

Volunteering in Canada:
An Application of Social Resources Theory to the Likelihood of Being a Volunteer, and
to the Determination of Volunteer Effort

by

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Abstract

The social resources theory proposed by Wilson and Musick in 1997 is employed to investigate the social dynamic that underpins formal volunteering in Canada. The theory postulates that volunteering is determined by an individual's economic resources, and human, social, and cultural capital. From this, two structural models of volunteering are developed and applied to data from the 2000 National Survey of Giving, Volunteering and Participating.

The first model, based on logistic regression, examines the likelihood of being a volunteer. A model for Canada as a whole is estimated, and then differences across subgroups, defined by region, religion, gender, and ethnicity, among others, are examined. The results show that subgroup differences are due to more than differences in the average levels of volunteering. In particular, the research identifies significant differences between religious groups in how social resources affect the likelihood of volunteering, while none of the other subgroup dimensions have appreciable effects.

The second model applies the social resources theory to an explanation of the time and effort contributed by volunteers. Volunteer effort is defined by four variables: duration as a volunteer, number of organizations volunteered for, diversity of tasks undertaken, and as the final outcome, the number of hours volunteered annually. These four are endogenous variables in a set of structural equations representing a recursive causal model with social resources as the explanatory variables, and are estimated as a path model in LISREL. This shows that hours volunteered are not directly determined by social resources, but are largely affected indirectly through the impact of resources on the three precursor measures of effort. The analysis also examines possible differences

among men and women in the effort devoted to volunteering. The results show that social resources tend to have the same effects for both sexes, although there are important differences that relate to how men and women respond to the demands of paid work and raising children.

Overall, the research shows that the social resources theory provides a useful framework for understanding how social resources promote participation in volunteering, and affect the time and effort people devote to volunteering.

*This dissertation has been, in its own way, a labour of love and is dedicated to the
memory of Peggy Selbee whose labour of love, so tirelessly pursued and so well realized,
was her nine children.
She is forever in our hearts.*

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Chapter One

Volunteering in Canada

The Problem

Nonprofit organizations, community groups and many other types of voluntary associations in Canada depend on a substantial amount of unpaid labour to run their organizations and to deliver their services, whether to members alone, to a specific clientele, or to the public at large. Whether organizations need to recruit people as volunteers for community projects, for charity events, or just to help out with a Little League baseball team, the answer to the question of who volunteers and who does not is germane. Since the early nineteen-nineties, the question has gained some urgency as governments at all levels have shown less and less inclination to use taxpayers' money to support the diverse kinds of social services and activities that many people need and demand. For many voluntary organizations, drawing people in as volunteers is vital if they are to cope with the demand for their services. For these organizations, a better understanding of who is likely to volunteer, and among volunteers, who is likely to devote substantial amounts of time to this form of unpaid work, is central to improving their ability to develop effective and efficient recruitment and volunteer management strategies. For those who study volunteer activities as a social behaviour, the question is no less important. In addition to the role voluntary organizations play in the delivery of socially important goods and services, volunteering, and participation in voluntary organizations more generally, are seen as a mainstay of grassroots civic engagement and

are important sources of social integration, and thus reflect the health of the democratic process in society. Underlying both concerns is an interest in identifying the social processes that underpin participation in voluntary organizations, and more specifically, active participation represented by provision of unpaid labour to these organizations as a volunteer.

The patterns of volunteer participation since the mid-nineteen-eighties show several important trends that bear on the ability of voluntary organizations to attract volunteers. Three national surveys of volunteering, conducted by Statistics Canada in 1987, 1997, and 2000, provide some important details about these trends. Volunteering rose in the decade between 1987 and 1997 from 27% to 31% of the population age 15 and older, and then declined over the next three years to 26% in 2000. The pattern of an increase and then a decline in volunteering is consistent for men and women, and across all regions of Canada.

Among Canadians as a whole, hours volunteered rose slightly from 46 hours in 1987 to 47 hours in 1997, and then declined to 43 hours in 2000. Among the regions of Canada, hours volunteered increased only in the Atlantic provinces between 1987 and 2000, and this was primarily due to a substantial increase in the hours volunteered by women. Hours volunteered in the population were stable in Ontario but declined everywhere else.

The pattern of time committed to volunteering, by volunteers age 18 and older, also shows a decline over time. Among volunteers, average annual hours volunteered dropped from 172 hours to 165 hours between 1987 to 2000. The median hours declined by even more, from 95 hours in 1987 to 79 hours in 2000. The drop in hours volunteered

was mostly due to the decline in hours volunteered by men from 191 in 1987 to 173 annually in 2000. Women actually increased the hours they volunteered from 157 to 159 annually over this period. If these patterns presage a shift in responsibility for volunteering towards women, it has important social implications. Women already bear much of the responsibility for other forms of unpaid work in the family and in the household, such as providing care for children and the elderly, and an increased reliance on women as volunteers will increase that burden (Phillips, Little, and Goodine, 2002: 7).

In terms of the total contribution of volunteers over this period the trends are the same. In 1987, 5.3 million volunteers contributed over 900 million hours of unpaid labour to these ends. In 1997 more than 7.5 million Canadians volunteered some part of their time to work for formal nonprofit organizations. This amounted to more than 1.1 billion hours of unpaid labour. By 2000 these numbers had fallen to about 6.5 million volunteers and 1.0 billion hours volunteered. Although for many individuals volunteering may involve a relatively small commitment of time each year, it is evident that a substantial number of Canadians do participate as volunteers and as a group do provide a substantial amount of unpaid labour each year.

These patterns of decline, even as the proportion of Canadians who volunteer remained virtually the same at 26% in 1987 and 2000 may be cause for concern. It shows that proportionately the hours of work available to nonprofit organizations are shrinking as volunteers give less of their time to these organizations. As the population grows and ages, and as governments at all levels download services to the sector, the need for volunteer labour will undoubtedly increase and become an even more important issue than it already is. This prospect gets even more worrisome if we consider that in 1987

only 6.3% of Canadians accounted for 67% of all hours volunteered and this proportion had fallen to 5.4% by 2000 (Reed and Selbee, 2001a: 764). If the trends evident in these data continue, nonprofit organizations will face even more severe labour shortages in the future.

The overall picture these data give is that on one hand, a substantial proportion of Canadians undertake volunteering each year, and if data were available on volunteering histories, would likely be an activity that a majority of Canadians have taken part in during their lives. On the other hand, these data clearly show that volunteering and hours volunteered have declined in recent times. Whether or not these are long term trends is not yet certain, but if they continue then the viability and dynamism of many organizations in the third sector may be reduced. At a time when the sector is becoming more important in the delivery of social services and in its role as a major locale for the development and maintenance of civic society, to have participation shrinking raises serious social policy issues. In light of these trends, it is even more important than ever to understand the social dynamic that underpins participation in the third sector. This dissertation is an attempt to provide a coherent picture of the factors that affect participation as a formal volunteer and the amount of effort Canadians devote to these activities.

Despite its prevalence, in the past there has been very little sociological research that specifically examines volunteering at the national level in Canada. Over the past seven years this has begun to change. The availability of three national surveys on volunteering and the associated work of the Nonprofit Sector Knowledge Base Project at Statistics Canada has made important advances in our understanding of the volunteer and

the context of volunteering (Reed and Selbee, 2000a; 2001a). But this project is the first of its kind to systematically address the issues that surround volunteering in Canada and it has identified many questions that remain to be addressed. In an important way, however, it has mapped the research terrain where more specific questions and issues can be explored. The research reported in this dissertation builds on the work of the Knowledge Base Project in order to increase our understanding of the social dynamic that underlies volunteering in Canada. This research uses a theoretical model of volunteering, the social resources theory recently proposed by Wilson and Musick (1997a), and data from the 2000 national survey on volunteering, to develop explanatory empirical models of volunteering. The social resources theory attempts to integrate a number of theoretical strands that currently exist in the study of volunteering. Its central argument is that volunteering is a consequence of the resources individuals possess in the form of knowledge and abilities, or human capital, resources based on participation in social networks and formal organizations, or social capital, and resources derived from culturally approved attitudes and values, or cultural capital.

The research represents the first attempt, using Canadian data, to develop comprehensive explanatory models of two fundamental aspects of volunteering; the likelihood that individuals will volunteer, and the amount of time they devote to these activities once they become involved as volunteers. As part of the application of the social resource theory to volunteering, this dissertation expands and clarifies the theoretical model and grounds it in more general sociological theories. Its originality lies in the application of the theory for the first time to Canadian data and in its use of

statistical methods to estimate structural models that reflect the social dynamics that give rise to volunteering in Canada.

This introductory chapter outlines three approaches to the study of volunteering, examines the way volunteering has been defined in the literature, and sets out the approach and definition used in this research. The chapter ends with a brief overview of each chapter in the dissertation.

Research on Volunteering: Three Perspectives

The study of volunteering is part of a much wider field of investigation that focuses on the nature and role of what is variously called the voluntary, nonprofit, or third sector in society. Research about participation as a member of voluntary or nonprofit organizations and as a volunteer in these organizations has been framed within three wider perspectives that focus on the role of organizations in the third sector. In each, volunteering plays an important conceptual and analytical role in the study of the third sector, and each perspective provides a guiding framework within which research on volunteering has been carried out. Each brings to the discussion a different set of assumptions and assertions about what volunteering is, and about the relevance of volunteer activities for society in general. These perspectives frame the analysis of volunteering as (a) a component of charitable behaviour that contributes materially to a collective good, (b) a component of civic engagement, or (c) a component of productive work in society. As Morris (2000) notes, these represent three basic ways that issues relating to the third sector have been conceptualized. Although a distinction is drawn between these three perspectives, they do not represent different theories of volunteering.

In most research in the literature on volunteering, it is common to find aspects of all three perspectives used to provide an analytical framework. However, in each perspective, the role of volunteering and its definition are distinct enough to represent a unique approach. In each perspective, different substantive and theoretical implications are drawn from the nature of volunteering in society. Each approach is a useful and valid approach to the study of volunteering, but they each come at the central question of the role of volunteering with different conceptual and practical goals. When volunteering is viewed as an important form of contributory behaviour, the field of study tends to be somewhat restricted. In this approach, volunteering is one of the ways individuals can actively provide assistance to others in the provision of needed social goods and services. In short, volunteering is seen as one of a number of activities that contribute to a common good.

When volunteering is viewed as a part of civic engagement, the basic issues relate to the determinants of citizen participation in the maintenance of communities and more generally in the governance of society, including the production and reproduction of democratic social institutions.

Finally, when volunteering is seen as productive but unpaid work, it can either provide goods and services that otherwise would not be as readily available in society, or it can represent the maintenance of organizations in which civic participation is possible. In either case, volunteering simply becomes work that would have to be purchased in the labour market if it was not being provided by volunteers. The focus here turns to the factors that determine the conditions under which individuals will devote time and effort in the form of unpaid labour to nonprofit or voluntary organizations.

Each of these will be examined briefly below in order to map out the conceptual terrain in which volunteering is typically studied and in order to situate the current research project within the approach that views volunteering as unpaid work in a formal organizational setting. This discussion identifies how the study of volunteering is part of the more broadly-based study of the third sector, and outlines some of the central issues surrounding the way volunteering has been defined, located and researched, and is intended to provide an outline of the larger context in which the more specific intent of the current research project is located.

Volunteering as Contributory Behaviour

When seen as a way individuals provide for the well-being of others in society, volunteering is typically viewed as part of a broader complex of activities that can generically be described as contributory behaviour (Reed and Selbee, 2000b: 1-2). This approach views volunteering as one instance of behaviours that have been described as “building caring communities” (Hodgkinson, 1995: 23), “philanthropic activities” (Sokolowski, 1996: 261) or simply “helping behaviour” (Jackson et al., 1995: 60-61). This is what Smith calls the charitable service view of the third sector (1997: 270). In this approach, the central concerns are the patterns of charitable giving in society, where giving means the provision of an individual’s time, money or goods to others in society. This can take the form of giving time or money to or through formally constituted organizations in the third sector, or it can take the form of providing help and assistance directly to individuals in need (Hodgkinson, 1995: 23).

When volunteering for formal nonprofit organizations is seen as a form of contributory behaviour, one question that has received considerable attention is what types of organizations constitute those whose activities are seen to represent charitable service. These are the organizations that contribute to the public good or are socially beneficial in some significant way, as compared to the organizations that are constituted mainly for the direct benefit of their members. This distinction has been described in various ways, but the essential difference is between public-oriented and member-benefit organizations. Public-oriented organizations in the third sector are those voluntary associations or nonprofit corporations that provide some form of public service or public good, while member-benefit organizations are mainly concerned with "...the immediate enjoyment of fellowship and consummatory group activity." (Van Til, 1988: 8). This has also been described as organizations with an outward rather than inward orientation (Quarter et al., 2001: 352). This distinction is not intended to exclude member-benefit organizations from the third sector, but rather is intended to identify a fundamental dimension that differentiates between organizations in the third sector that provide charitable service from those that are not considered to do so (Van Til, 1988: 87).

When the distinction is drawn between public-benefit and member-benefit organizations, the focus of attention for studies of volunteering as contributory behaviour tends to be restricted to those activities that take place in public-benefit organizations that are deemed to provide a benefit to society and the general welfare (Smith et. al., 1972: 167). Smith makes the same distinction when he suggests that the term "volunteer work" refers to public-benefit activities, while member-benefit activities are examples of "association participation" (1994: 244).

The issue of which organizations in the third sector are public-oriented has important implications for defining which activities are considered to represent volunteering as a contributory behaviour because it is almost exclusively in reference to work performed for these organizations that volunteering is viewed as contributory behaviour. On one side, this approach excludes activities that would be volunteering but for the fact that they do not take place in nonprofit voluntary organizations whose stated mission is considered to be public-benefit. This would include any unpaid work undertaken for both government and private for-profit organizations. Helping organize activities for seniors in a private retirement home, for example, would not constitute contributory behaviour, yet for the individuals involved it is difficult to see how this is fundamentally different from performing the same work for a nonprofit organization where it would constitute contributory behaviour. Volunteering for government agencies or departments is also excluded by this approach, and this may represent a fairly substantial amount of volunteer activity (Brudney and Kellough, 2000: 112-113). On the other side, this approach also excludes nonprofits that are seen as mainly member-benefit organizations, even though they often take an active part in community events that do produce a public good in the form of charitable donations (the involvement of social or cultural organizations in telethons, for example).

Attempts to differentiate between volunteer activities that are contributory and others that are less contributory behaviours have run into theoretical and methodological problems. One difficulty involves the attribution of a generalized generosity motivation to some volunteers but not to others who volunteer in different types of organizations. Schervish and Havens, for example, conclude that the study of charitable giving and

volunteering as exemplars of contributory behaviour runs the risk of making unwarranted comparisons of generosity and quickly becomes moralistic (Schervish and Havens, 1997: 256). A second issue with the attempts to distinguish between public-oriented and member-benefit organizations is that the taxonomies constructed may not be sociologically useful (Wilson, 2000: 233-234). Even organizations that are formally constituted as member-benefits often provide external benefits in the form of charity work in the community. Attempts to operationally distinguish between activities that are contributory and those that are not by distinguishing between types of organizations have not been very successful.

Volunteering as Civic Engagement

The second broad perspective on the third sector in which volunteering and other forms of participation in voluntary associations play an important role is the study of civil society and civic engagement. Compared to the view of volunteering as contributory behaviour, this shift in emphasis represents a move away from the charity model to the civil society model of voluntary organizations (Phillips, 2003: 18). This has important consequences, not only in how organizations in the sector see their role in society and how researchers study these organizations, but also for how participation as a volunteer in these organizations is viewed. In this approach, the issues surrounding research on volunteering are not confined to its contributory aspect but are more broadly framed in terms of how it represents civic participation in formal voluntary organizations and associations. Since volunteering is an active form of participation, it becomes an

indication of an individual's level of civic engagement (Janoski, Musick and Wilson, 1998: 496).

Early research on participation in voluntary organizations, and volunteering in particular, often framed these activities in terms of their role as mechanisms of societal integration. Two of the main themes of this research were the adaptive and integrative functions of voluntary organizations for both society in general and for individuals in society. For society, voluntary organizations support the normative order or provide avenues through which to change it, and play an important role in the distribution of power and decision-making, and in socialization (Babchuk and Booth, 1969: 31). For individuals, participation in voluntary organizations connects them to networks in the wider community that provide affective support and counteracts the disintegration of traditional forms of community in modern industrial society (Tomeh, 1973: 91; Wellman, 1979: 1206).

The view that voluntary organizations are important integrative mechanisms continues today, particularly in the study of social capital. Social capital theory focuses on role of social networks, norms and trust in facilitating collective action (Putnam, 1995:67), and is important because it is seen as the basis for the maintenance of a vigorous civil society, and its democratic processes (Putnam, 2000: 19). There is considerable debate surrounding social capital theory (Edwards and Foley, 2001; Grix; 2001) but it has become one perspective in which volunteering has received substantial attention. In the main, voluntary organizations represent one type of appropriable social organization that individuals can use to access social capital (Coleman, 1988: S109). As the active form of membership in the context of voluntary organizations, volunteering is

one indication of the intensity of participation, and is important because it represents the face-to-face interaction that facilitates the development of social capital through organizations (Wollebaek and Selle, 2002: 39). Thus it becomes one of many activities that depend on the level of social capital that exists in specific communities and thus can be taken as an indicator of the health or soundness of civil society.

Volunteering has also been seen as an indication of citizen participation outside of the explicitly social capital approach to civic engagement. In studies of political participation in the United States, for example, participation in voluntary organizations is often taken to be an important determinant of political engagement (Abowitz, 1990; Barkan et al., 1995; Verba et al., Brady et al., 1995). In studies of social movements, volunteering is seen as a direct cause of social activism (Caputo, 1997: 168) and in studies of social networks in local communities, volunteering is active involvement in networks that extend beyond those of one's immediate circle of family and friends (Marsden and Campbell, 1984: 489). All of these link volunteering to various forms of civic engagement.

This shift in emphasis does not mean that researchers ignore the contributory aspect of third sector organizations and participation, but rather that this is no longer seen as the only significant societal role the third sector can play. One implication of the civic engagement perspective is that where the contributory perspective tends to sharply circumscribe the behaviours and organizations that qualify as contributory activities, the engagement approach has not seen extensive efforts to restrict the range of organizations and types of participation that represent engagement. As several analysts have pointed out, a substantial number of the smaller grass-roots types of organizations, that the

contributory approach tends to exclude, play an important role as vehicles of engagement (Smith, 1997: 270; Toepler, 2003: 238).

Although volunteering is an important part of research in the civic engagement literature, the main limitation with using it as a framework to study these activities is that it does not examine volunteering as a social behaviour in and of itself. Instead, volunteering is simply another form of participation in the civic sector and the focus is more on how third sector organizations promote civic engagement in all forms rather than specifically through volunteering. This does not disqualify this approach as a framework for studying volunteering, but it does tend to de-emphasize participation in those organizational contexts that clearly do not represent engagement other than in the very peripheral sense of participation in groups beyond the family. Participation in sport or hobby clubs would be examples of organizations that are not noted for the degree of civic engagement they engender in their participants (Grix, 2001: 196). Yet volunteering for these organizations does provide unpaid labour that is put to ends that benefit more than just the participant, even if the benefit accrues mainly to other members. From the perspective of democratic governance or civic engagement these organizations may be less important, but from the perspective of volunteering as unpaid labour provided to third sector organizations there is no clear reason why a distinction should be made between unpaid labour that represents a possible source of civic engagement from unpaid labour that apparently does not do so.

Volunteering as Unpaid Work

A third perspective on volunteering has emerged that focuses less on the role of volunteering in the context of contributory behaviour or civic engagement and more on the fact that it, like paid work, involves a labour market in which participation in, and attachment to, the labour force are dependent on the social resources an individual brings to that market. As described above, both the contributory and engagement perspectives have limitations when it comes to the study of volunteering as a widespread social activity. The desire not to restrict volunteering to contributory behaviour or to see it as just another form of engagement, has led to efforts to re-conceptualize the study of volunteering in a way that is more inclusive of all forms of this activity and one that focuses explicitly on developing a theoretical explanation for volunteering as a social activity in and of itself (Wilson, 2000: 216). This approach starts from the proposition that volunteering is a form of productive labour on a par with paid work performed in the regular labour force. Sundeen, for example, defines volunteering as coproduction when it increases the level of publicly available goods and services (1988: 548). The central question then, concerns the resources that determine the level of participation in this labour force. On one hand, this perspective avoids the vexing question of whether or not the activity is in some way contributory behaviour, and on the other, re-focuses the research agenda specifically on the activity itself rather than treating it as simply an indication of social engagement.

This perspective on volunteering is not a new approach. For some time it has informed the analysis of volunteering as an economic activity, and has been the subject of some research by economists. The strict economic approach, however, has not found

widespread acceptance in the social analysis of volunteering mainly because of its strict adherence to the utility model of economic behaviour, and the evident weakness of the economic model for explaining volunteer behaviour (Kingma, 1997).

When volunteering is viewed simply as productive unpaid labour provided to organizations there is less concern with establishing the limits of the nonprofit sector. Instead, any work that is unpaid and provided under the auspices of a formal organization qualifies as volunteer labour. This perspective also starts with the same kinds of research issues that have long been applied to the study of work in the regular labour force, including the essential role of human capital. It also acknowledges the social context in which this kind of work occurs and brings in the relevance of social and cultural capital for participation in this activity. A recent elaboration of the “volunteering as work” perspective has produced the social resources theory of volunteering (Wilson and Musick, 1997a). This theory is the focus of the research in this dissertation and is dealt with in detail in the theoretical chapter to follow.

Focusing on volunteering as a productive activity does not obviate the need for research on the kinds of questions and issues about volunteering that are central to the other two perspectives, but it starts by looking specifically at volunteering and does not try to decide the issue of its contributory status at the outset. Nor is it specifically interested in explaining volunteering as a form of citizen engagement. These issues have their place and are of interest in specific situations, but the intent here is to take a less limited approach to volunteering by treating it as a broadly defined productive activity. An understanding of volunteering as a behaviour in and of itself may improve the

analysis of other forms of the activity, including its role as contributory behaviour or as a form of engagement, but these are issues for other research projects.

What is a Volunteer: Defining the Activity

The choice of one of the three perspectives in which volunteering is typically conceptualized has important implication for the way volunteering is studied, and there has been particular debate over how to define the “volunteer” within each perspective. When seen from the contributory perspective, the question of how to define volunteering has focused on how to identify activities that are contributory in nature as opposed to those that are undertaken in the volunteer’s self-interest. In the same way that the question of which organizations exemplify contributory behaviour, the issue of what forms of volunteering constitute contributory behaviour has resolved itself into a debate over activities that are public-oriented as compared to those that are member-benefit (Van Til, 1988). When volunteering is seen as one avenue of civic engagement, the issue becomes one of which activities and which organizations are defined as effective arenas for citizen participation and which volunteer activities are simply examples of charitable helping or program volunteering and do not represent sociopolitical participation in any meaningful way (Smith, 1997: 270). The least exclusionary definition of volunteering is employed when it is seen as unpaid work. Here question is not what function volunteering serves but rather its role as unpaid work. In some ways, the issue then becomes the extent to which these activities have the characteristics of work in the paid labour force and what are the resources and constraints that govern how and when people contribute unpaid labour to formal organizations.

Despite these differences, there are a number of characteristics that are typically agreed upon as defining the volunteer. In general, the four dimensions to the definition of volunteering are, first, that it is an activity that is undertaken voluntarily, without coercion; second, it is unpaid or un-remunerated; third, it occurs in the context of a formal organization or group; and fourth, it produces some general benefit for more than just the volunteer, including for society in general. As several authors who have dealt with the definitional issue note, combinations of these dimensions have produced a variety of definitions that range from broad inclusive views of volunteering to narrow exclusionary views of “pure” volunteering (Van Til, 1988: 6-8; Cnaan, Handy and Wadsworth, 1996: 369-371). There have been concerted attempts to provide some clarity to the question of what defines a volunteer. Cnaan and colleagues, for example, have examined the question extensively and in their most recent analysis identify a cost-benefit calculation as the basis of the public’s conception of what constitutes a “volunteer” (Cnaan, Handy and Wadsworth, 1996; Handy et al., 2000). The question these studies beg is the value of using the “popular conception” of who is more of, or less of, a volunteer as the basis of defining the limits of volunteering as a subject for sociological analysis.

It is not my intention to resolve this definitional debate. As is evident in the three approaches to the study of volunteering, the definition of the volunteer and the reasons for examining this behaviour depend very much on the analytical context in which volunteering is studied. There is little to be gained by trying to produce a theoretically exact definition since these tend to exclude some examples of volunteering while giving prominence to others. Instead, it is more appropriate to accept that the relevance of

various activities as volunteering will depend on the point of the analysis and the perspective adopted. This is much like Ragin's point about the debate over defining the third sector itself, where he argues that there are different dimensions whose conceptual centrality depends on the intent of the researcher, and that there is no benefit in trying to establish a definition that is applicable in all situations. To include or exclude various types of volunteer activities by fiat as not being examples of volunteering serves no purpose. The seeming confusion in the research literature that Cnaan points to is not so much a result of not having a clear definition of what is volunteering as it is the result of not clearly defining what the particular study means by volunteering, and being able to operationalized that definition in the data being examined (Cnaan and Amroffell, 1994). Rather than debating the range of activities that should or should not be included in volunteering, it is more productive to clearly indicate the particular definition being used and the implications of doing so.

The definition used in this study conceptualizes volunteering in very broad terms. It includes any activity where unpaid work is provided to a formal organization or group. In this regard it does not limit the scope of inquiry on the basis of the kinds of organizations in which the activity takes place, the motives of the people who do it, or the function of the activity for society in general. On the other hand, it does exclude the kind of direct helping described as informal volunteering and also excludes unpaid work done in the household. To some extent this definition is a product of the way volunteering is defined in the data that will be employed in this study, but it also is the most appropriate definition when volunteering is seen as productive labour offered in a labour market of sorts.

When the scope of volunteering activities is this widely defined it raises the issue of heterogeneity in the range of activities included as volunteering (Cnaan, Handy and Wadsworth, 1996; Handy et al., 2000). This may be the case, but heterogeneity in volunteer activities and in the social process that connects people to these activities, is an empirical question rather than one that should be resolved by definition or any other a priori reason. In other words, the practical approach to the question of heterogeneity is to start with an inclusive definition of volunteering and then use the theoretical and empirical models developed in that context to examine sub-sectors of the field in which the social dynamic may be different enough to warrant separate analytical approaches. To date there is some evidence of heterogeneity, particularly in the motives offered by, or the perceptions and values of, those who participate in these activities (Cnaan and Amroffell, 1994; Cnaan, Handy and Wadsworth, 1996; Reed and Selbee, 2003). But this evidence mainly concerns the way volunteers see themselves and their activities, and does not demonstrate convincingly that the social process that connects people and volunteering is actually substantially different for sub-groups of the population. In the terms of the research undertaken in this dissertation, the issue of heterogeneity is essentially a question of whether or not social resources act in different ways for different sections of the population in prompting participation as a volunteer. This issue will be addressed directly in the empirical models that account for volunteering in Canada.

Limiting the analysis of volunteering to activities that take place in the context of formal organizations, or at least in the context of an informal group, also raises the question of how to conceptualize the kind of assistance individuals on their own offer to others without the intervening organization or group. There has been an inclination to

broaden the conceptual domain of volunteering by including other forms of what are called informal helping behaviours. The result is that direct helping is seen as another manifestation of a “general cluster of helping activities...” that also includes formal volunteering (Wilson, 2000: 216). But there is a basic difference between direct helping and volunteering that should be recognized by those who would apply the same empirical models to these behaviours. Formal volunteering involves work for an organization of some sort and thus the benefits that come from that work, other than intrinsic benefits, accrue to the organization, to its members, and to its clientele. The connection between the volunteer and these individuals exists mainly in the context of the organization. For direct helping, in contrast, the relationship is based on being part of a social network and these are defined by more or less intimate social ties (Paxton, 1999: 100-101). So while formal volunteering and direct helping are on one level similar behaviours, the context in which they occur are distinct enough that it may be unproductive to treat them as the manifestations of the same behaviour (Mutchler, Burr and Caro, 2003: 1269). Doing so obscures structural and contextual differences that may be important to understanding the nature of each behaviour.

While it is argued that most direct helping is fundamentally different from formal volunteering, there is a part of it, helping strangers or people of distant acquaintance, that is probably very much the same as formal volunteering. And certainly when one is looking at the contributory aspect of helping others, this form of helping is similar to formal volunteering.. However, as research on direct helping indicates (Amato, 1990; 1993; Wellman and Wortley, 1990), this is likely to be a very small part of all direct helping reported in most social surveys. As a consequence, informal helping activities are

excluded from consideration in the analysis of volunteering in the current research. The activities that are the focus of this research are those unpaid activities that take place in the context of an organization or group.

Outline of the Dissertation

Volunteering has been the focus of a fairly long tradition of research, particularly in the United States. This research has not been confined to one or two theoretical traditions, nor to specifically sociological analyses. Rather it represents a broad range of disciplines and theoretical approaches. In Chapter Two, the history of research on volunteering is documented, beginning with the early examples where the research was mainly guided by the effort to identify the socio-psychological correlates of volunteering. Along with these explanations there also developed a theoretical approach that has come to be known as the dominant status model. This was an attempt to formalize a body of empirical research that found that the strongest predictors of volunteering were those characteristics of individuals associated with more highly valued or preferred statuses in society, such as high income and education. A more recent development in the theoretical approaches applied to the understanding of volunteering is the social capital model. In this approach, volunteering is seen as an indication of an individual's level of civic engagement and is a product of their social capital, particularly in the form of their social networks. The difficulty with these various theoretical approaches to the study of volunteering is that none really provides an adequate theoretical description of volunteering. As a result, John Wilson and Marc Musick in 1997 proposed a theory that integrates the main components of the previous approaches in a single theory they call the

social resources model of volunteering. In Chapter Two, their formulation of this theory is described and a number of revisions are proposed that expand the applicability of the theory to explanations of both the likelihood of being a volunteer, and the amount of time and effort individuals devote to volunteering.

Chapter Three describes the data on which the two empirical analyses are based. These data, taken from the 2000 National Survey of Giving, Volunteering and Participating, represent a rich and high quality body of data about many aspects of volunteering in Canada. This chapter also describes the operationalization of the variables for both the analysis of the likelihood of volunteering and of volunteer effort. The statistical techniques used to generate the two empirical structural models are different and Chapter Three discusses the procedures used in each analysis. The basic techniques of logistic regression are applied to the analysis of the likelihood of volunteering, while path analytic techniques for estimating a structural model based upon the LISREL program are used to develop the structural model of volunteer effort.

Chapter Four presents the first of the empirical application of the social resources theory to the development of a structural model of the likelihood of being a volunteer in Canada. A national model is developed which suggests that the social resources theory is a useful and informative perspective on volunteering. The national model is then used to examine group differences in volunteering. This research reveals a more complex model that incorporates main effects for region and religion, and a set of religion-by-resource interactions. These findings provide a more detailed understanding of where, and perhaps why, differences in volunteering exist among religion groups and across regions in Canada.

Chapter Five turns to the development of a structural model of volunteer effort.

Path models are developed that incorporate four endogenous measures of volunteer effort and an extensive set of exogenous variables representing the components of the social resources theory. The analysis finds that a national model of volunteer effort provides a relatively good fit to the data. This model is then used to examine the possibility of gender differences in how social resources affect volunteer effort. The gender model reveals important but not extensive gender differences. The chapter concludes with a discussion of the implications of the findings from the national and gender models for our understanding of the amount of time and effort people devote to volunteer activities.

The final chapter summarizes the main findings from the two applications of the social resources theory. It also presents an evaluation of the usefulness of the theory for the study of volunteering, and a discussion of the implication of the findings for those who work in the third sector and depend on the work of volunteers. The chapter also discusses how the social resources theory can be improved both in terms of its conceptualization of volunteering, and particularly in terms of the kinds of measures that need to be developed in order to better develop empirical representations of the social processes that underlie volunteering. The chapter concludes with a discussion of the kinds of research that would deal with some of the issues that are not dealt with in the current research.

Chapter Two

Volunteering in Theory

In many ways, volunteering is a practice in search of a theory. It has been studied from almost every social scientific perspective and from within many theoretical traditions. Each perspective brings its own theoretical and empirical insights to the field but none has shown itself to be a coherent or unified approach to the study of volunteering. Reviewing the state of the art in the area, Wilson (2000) concludes that a comprehensive theory of volunteering does not exist, despite substantial progress in identifying the social correlates of volunteering. Empirical investigations of the phenomenon have identified a wide range of factors that influence volunteering, but this has not had much effect on theory development. Instead, theorizing in this area is characterized by a number of approaches that constitute only partial explanations of volunteering. At the same time, volunteering has not received much attention in any of the more traditional areas of sociology. Thus, there is a need to develop a more encompassing theoretical model of volunteering, and to do so in a way that incorporates the principal findings of these varied approaches. The first section of this chapter reviews the main attempts at theorizing volunteering, and concludes with a discussion of a relatively recent theoretical model, the social resources theory. This theory brings together many aspects of the earlier theories in a single coherent explanation of volunteer participation. The second section proposes a more nuanced way to look at the outcomes the social resources theory is meant to explain and presents a new structural model of

volunteer effort. The third section proposes revisions to components of the theory in order to clarify its connections to volunteering.

Theories of Volunteering

Inventories: The Early Models

Early attempts to systematize the existing knowledge about volunteering mainly produced inventories of the correlates of volunteering (Payne, Payne and Reddy, 1972; Tomeh, 1973). One significant attempt to develop a comprehensive theoretical model of volunteering was Smith's Sequential Specificity Model (Smith and Reddy, 1972; later refined in the General Activity Model; see Smith, Macaulay and Associates, 1980). This model attempted to systematically relate the factors that explain individual participation in organized voluntary action as a sequence of increasingly proximate categories of causal variables. At the most general level are contextual factors such as cultural formations and social structures that foster participation, including the structure and operation of voluntary organizations. Next are variables that are characteristics of individuals, including social background, personality traits and specific attitudes relating to voluntary action. Lastly are the situational perceptions that govern individual action. The variables at each level of proximity or specificity causally influence those at the next level, with individual participation in voluntary organizations as the ultimate dependent variable (Smith and Reddy, 1972: 322-328). While it identified the factors found to be empirically important determinants of volunteering, and organizes them into broad analytical categories, the model only loosely describes the structural connections that should in theory exist among specific components (Smith and Reddy, 1972: 328-329).

Ambitious as they were, the early attempts to bring order to the empirical findings did not evolve into a coherent theory of volunteering. However, they did point to the systematic inclusion of both individual and structural attributes in the explanation of volunteering. In this way they show that an adequate theory must incorporate both types of characteristics in any valid explanation of volunteer activity.

The Normativist Theories

A second approach to theorizing volunteering grew out of a generalized concern with the social basis of caring, compassion, and helping behaviour in society, and has a long tradition in the area. This approach, which can be broadly characterized as the normativist perspective (Janoski, Musick and Wilson, 1998: 497), focuses on the role of values, norms, and attitudes in explanations of volunteering and is part of a more general body of research on prosocial behaviour.

Interest in the normative basis of prosocial behaviour has led to wide-ranging explorations of the nature of helping in society and is exemplified in the sociological literature by the work of Wuthnow (1991, 1995), and Bellah and associates (1985). Wuthnow, for example, attempts to reconcile the perceived dominance of self-interest, as a guiding normative component of modern societies, with the acts of compassion that are so prevalent in American society (Wuthnow, 1991: 18-20). Others have examined the range of values and attitudes that appear to be associated with volunteering, including altruism, self-improvement and utilitarian motives (Clary, Snyder and Stukas, 1996; Sokolowski, 1996).

Normative explanations highlight the social-psychological determinants of prosocial behaviour but place less emphasis on the social context (social structure) in which volunteering occurs. In the main, these are cultural explanations of volunteering; the habits of the heart (Bellah), or acts of compassion (Wuthnow) that constitute helping others. While there is debate over whether values are causes of prosocial behaviour or are more appropriately seen as the ways individuals explain or rationalize their participation in voluntary behaviours (Dekker and Halman, 2003: 4-5), the normative studies suggest that we cannot wholly discount the place of values in the study of volunteering. These approaches indicate the need to integrate the normative aspect of prosocial behaviour in a comprehensive theory of volunteering.

The Dominant Status Model

Another attempt to systematically describe the factors that are associated with volunteering is the dominant status model. This model arose less as a formal theory of volunteer participation than as an attempt to bring order to the accumulation of evidence from diverse empirical investigations. Although the dominant status model has yet to be enunciated as a formal theory, it does constitute an “underlying principle” that has repeatedly appeared in the literature and thus has achieved the de facto status of a theoretical model of volunteer participation (Smith, 1994:247).

Early research on volunteering consistently found that characteristics such as high education, high income, high occupational prestige, being married, male, middle aged or a homeowner, among others, were positively correlated with participation (Payne, Payne and Reddy, 1972). Attempts to explain these patterns led to the assertion that volunteer

participation is greater for individuals who occupy social roles or positions that are more highly socially valued or preferred (Smith, 1994:246). Dominant status, it is argued, encourages participation because such roles are the basis of important social resources, individual dispositions, and acts as a signal of the individual's qualification for participation.

In the first instance, dominant status reflects higher levels of the social and economic resources that facilitate participation. High status individuals have the economic resources that in themselves reduce barriers to participation. Lower status individuals, in contrast, may face real economic constraints to participation. For those with limited resources, the direct costs associated with volunteering, such as transportation, babysitting, or time off work, may be barriers to involvement (Sundeen and Raskoff, 1994:384; Wilson and Musick, 1998:800). It has also been suggested that those with higher economic resources will have more time to devote to voluntary participation (Sundeen, 1988:548). Wealth can be used to "buy off" other uses of one's time in order to volunteer – such as hiring a gardener rather than doing yard work oneself. However, the evidence that high status is positively related to discretionary time is ambivalent. Research on political participation, for example, finds no connection between amount of free time and social status (Verba, Schlozman and Brady, 1995: 291-295) or between free time and education (Brady, Verba and Schlozman, 1995: 274). So it is unclear whether or not dominant status is indicative of greater discretionary time.

Other resources linked to dominant status can generally be seen as components of an individual's human capital: higher education itself is considered a dominant status (Wilson and Musick, 1998:800: 1997a: 698). But it may also be the case that dominant

status roles impart practical social skills such as cognitive abilities (Goss, 1999: 381; McPherson and Rotolo, 1996:183) or civic skills and leadership abilities (Verba et. al., 1995:284; Wilson and Musick, 1997b:254-255). As a consequence of possessing these aspects of human capital, some individuals are more “qualified” and therefore better prepared to participate in voluntary organizations.

Dominant status is also seen as generating a set of attitudes, values and norms that dispose the individual towards participation. The main feature of the disposition associated with dominant status is the development of a sense of civic responsibility (Wilson and Musick, 1997b: 256). Dominant status individuals typically have a greater stake in the public goods that are the outcome of participation and thus have more reason to become involved (Wilson and Musick, 1998:800; Sundeen, 1988:548; Verba, Schlozman, and Brady 1995:281). Dominant status is also associated with a greater awareness of the needs of one’s community and of the opportunities to actively participate in organizations that meet those needs (Sundeen, 1988: 557; Wilson and Musick, 1997b: 256).

Other dispositions associated with social status are asserted to be relevant for participation -- high status roles tend to reduce psychological barriers to participation by increasing confidence or competence in social interaction (Goss, 1999: 381; Wilson and Musick 1998: 800; Sundeen, 1988:551), and higher status individuals tend to receive greater rewards from participation (McPherson and Rotolo, 1996:183; Janoski and Wilson, 1995:273). For example, volunteering can be viewed as consumption of a symbolic good (status reinforcement) so that the prestige returns to participation are greater for dominant status individuals (Wilson and Musick, 1997a: 696). Participation

by high status individuals also has greater implications for career enhancement than it has for lower status individuals (Sundeen and Raskoff, 1995:341; Wilson and Musick, 1997b: 253). In fact, many high status occupations may carry with them a strong and at times explicit obligation to participate as volunteers in the community (Goss, 1999:381; Wilson and Musick, 1997b: 253).

Finally, the dominant status model includes an explanation for the increased participation of higher status individuals based upon the role of dominant status as a signal. While resources and dispositions relate directly to the factors that encourage and facilitate the participation of high status individuals, signaling involves how organizations and their members actively recruit specific kinds of volunteers. Dominant status is a signal to organizations that individuals have the appropriate qualifications for participation. This is important because these qualifications (resources and dispositions) are valuable to the organization and presumably are in short supply in the population (McPherson and Rotolo, 1996: 183; McPherson, 1981: 718; Wilson and Musick, 1997a: 698). Organizations will more actively recruit individuals with these resources, and dominant status indicates that a person has the needed resources. Signals reflecting high status are also important because the organizations themselves tend to be socially stratified and have a strong tendency to status homogeneity (Tomeh, 1973:97; Gordon and Babchuk, 1959:27). Both of these find expression in the fact that the main road to participation is often through being asked (Wilson and Musick, 1998: 800; Freeman, 1997: S141).

Deficiencies in the dominant status model largely stem from the fact that there is no clear demonstration that these roles actually have the purported “preferred qualities”

that facilitate participation. As Smith notes, for many of the proposed dominant roles the association with prestige and respect is suspect (1994:247). Some empirical research either contradicts the model or at least shows ambivalent results (Auslander and Litwin, 1988; Berger, 1991; Smith, 1994; Tiehen, 2000). It has also been suggested that one type of resource associated with dominant status, human capital, may be important in volunteering for self-interest types of organizations, but is not relevant for those who volunteer for community-oriented organizations (Janoski and Wilson, 1995:289).

The Social Capital Model

A more recent theory that explains volunteering as one component of a whole range of behaviours that represent civic engagement in democratic societies is the social capital model. Originally proposed by Bourdieu (1986) and separately by Coleman (1988), the notion of social capital has since found a place in explanations of participation in voluntary organizations and for volunteering itself largely through Putnam's work (1995; 2000) on the decline of social capital in the United States. In surveying the perceived decline in civic engagement in the U.S., Putnam identifies participation in voluntary organizations, and in volunteering, as important indices of the social capital available to individuals and to communities (1995: 68-70).

In Coleman's formulation, social capital is a characteristic of social structure that facilitates the productive actions of individuals or groups -- social capital makes possible the achievement of specific group goals that would not otherwise be possible (1988: S98). Social capital exists in three forms. First, social capital exists in the obligations,

expectations and trustworthiness that arise in the reciprocal relations among individuals in a group (Coleman, 1988: S102-S103). Second, social capital exists simply in its information function: relations among individuals are important sources of useful information that can be acquired at lower cost to the individual than would be true otherwise (Coleman, 1988:S104). Third, social capital derives from strong norms and effective sanctions within social groups. These not only facilitate certain types of action, in particular generalized reciprocity among group members, but importantly, they also constrain other actions (Coleman, 1988: S105).

Particularly important for the accumulation and effective use of social capital is the existence of social networks. The network of people an individual interacts with on a regular basis form the “social group” in which social capital is created. The more that individuals in a network are known to each other on a face-to-face basis, the more accessible are various resources, the greater the effectiveness of norms and sanctions, and the greater the level of trust. A second aspect of social structure that is important for realizing social capital is what Coleman calls “appropriable social organizations”. Formal organizations provide a structured context in which the three forms of capital can be developed and thus are particularly effective for accessing resources (1988:S108-S109).

Early research on participation in voluntary associations did not underestimate the importance of social networks (cf., Tomeh, 1973:104-105; Kahl, 1957:147-150). And certainly, more recent studies of participation in both formal and informal groups highlight the relevance of social networks (Auslander and Litwin, 1988; Marwell et. al.,

1988; Guterbock and London, 1983). But the connection between volunteering, social networks and the more general idea of social capital is a more recent development (Janoski, Musick and Wilson, 1998:496; Wilson and Musick, 1998:799).

The specific resources social capital makes available to members of networks include amplification of personal resources, information, pooled labour, contacts, and mutual obligations (Wilson and Musick, 1997a: 695; Wilson and Musick, 1998: 800; Paxton, 1999: 92). Along with resources, social capital also generates dispositions that foster volunteer participation, including trust, norms of group reciprocity, and an awareness of community, or what has been termed “bounded solidarity” (Wilson and Musick, 1997a; Janoski, Musick and Wilson., 1998: 497; Portes, 1998: 8). Finally, social capital in the form of social networks reflects the individual's visibility in the community which in turn increases the likelihood of being recruited to volunteering by others.

A number of problems exist with this approach to understanding voluntary participation. As developed by Putnam and others, the notion of social capital is substantially removed from either Bourdieu's (1986) or Coleman's (1988) original conceptualization. In fact, it is in danger becoming tautological: social capital becomes equated with the outcomes it supposedly generates (Edwards and Foley, 2001; Wilson, 2000; Portes, 1998:5). But perhaps the most significant problem is that social capital is treated as an exogenous factor in explaining volunteering. This literature rarely attempts to explain why social capital should be expected to vary across individuals. It may be true that individuals with greater social capital are more likely to volunteer than others, but the question remains of why some have more social capital than others.

The Synthesis: The Social Resources Model.

The theoretical approaches discussed to this point explain some of the social patterns associated with participation as a volunteer, but they are not complete explanations in themselves. It is often the case that empirical studies of volunteering will explain the impact of one variable in terms of one theoretical perspective while another is used to account for other significant effects. Taken individually, these theories are only partial explanations of volunteering. The main deficiency with any one of these theories is that they do not account for the connections that should exist between values, social status, and social capital as factors that affect volunteering. In response to this situation, Wilson and Musick have proposed a synthesis they call the social resources model that brings the central components of the various approaches together in one theory (1997a; 1998; 2000).

As presented by Wilson and Musick (1997a), the social resources model begins with three specific propositions. First, volunteer work is productive labour for which there exists a market that operates in much the same way as the market for paid labour. As such, attachment to, and performance in, the market is contingent upon an individual's qualifications---in other words, on human capital. Second, volunteer work involves collective action in the production of a good that, in varying degrees, is a public good. Two problems are associated with the production of a public good: the recruitment of individuals for production and the free-rider problem. The principal resource that resolves both problems is social networks or social ties (Marwell et. al., 1988). As social capital, social ties are a resource that generates trust, support, and reciprocal obligations, thereby

facilitating mobilization and reducing the free-rider problem. Third, volunteering involves a cultural component described as the “culture of benevolence” (Wilson and Musick, 1997a: 696-697). The social values that encourage helping behaviour are a form of cultural capital that enable individuals to acquire and consume symbolic goods associated with volunteering. Drawing on the work of Bourdieu (1986), they argue that attitudes and preferences associated with helping behaviour represent a component of cultural capital that can be invested for a return in the form of social profits such as esteem and approbation (Wilson and Musick, 1997a:696).

These three factors represent the core of the social resources model: human capital, social capital and cultural capital are interrelated and jointly determine the likelihood of participation as a volunteer¹. Specifically, human capital directly affects the levels of social and cultural capital individuals possess, and all three directly affect the likelihood of being a volunteer.

The model also incorporates factors that affect all three types of capital, but are themselves unexplained by the theory (they are exogenous influences): age, gender and race. One weakness in the social resources model is the lack of theoretical attention given these three. The justification Wilson and Musick provide for including these factors is simply the fact that empirical studies have shown them to be important influences on volunteering (Wilson and Musick, 1997a:700-701). Age is included in their model because it represents the social obligations associated with stages in the life-cycle. These obligations, particularly as they pertain to raising children, and perhaps in caring for

¹ A fourth type of capital, economic capital, is implicit in Wilson and Musick’s theoretical model, and explicit in their application of the model (2000:1541). In their theoretical discussion, however, economic resources are treated as a component of human capital.

elderly parents, increase at early ages, peak in mid-life and decline thereafter. This pattern partly explains the curvi-linear relationship that has been found to exist between age and volunteering (Selbee and Reed, 2001). Race is included because as an oppressed minority in American society, Blacks are characterized by lower levels of human capital, but because of greater bounded solidarity, they also exhibit higher levels of social capital (Musick, Wilson and Bynum., 2000: 1543). Gender is included because women's levels of social resources are hypothesized to differ from men's as a consequence of socialization that has centered on roles in the private domain while the socialization of men focuses on roles in the public domain (Musick, Wilson and Bynum., 2000: 1540; Wilson and Musick, 1997a: 700-701). Beyond these rather superficially hypothesized relationships, Wilson and Musick do not expand on the theoretical underpinnings of these components.

While there are problems with some details , the social resources model does have the advantage of presenting a theoretical framework that integrates essentially all the factors that have repeatedly been associated with volunteering. Importantly, the major components of this model are all central concepts in broader sociological theories that in themselves are not specifically concerned with volunteering. For this reason, the social resources model has the potential for integrating the analysis of volunteering into a more coherent whole.

For example, the analysis of social and cultural capital in Bourdieu's work explicitly connects these to a theory of capitalist society and the production and reproduction of the class structure. Thus the conceptualization of both forms of capital

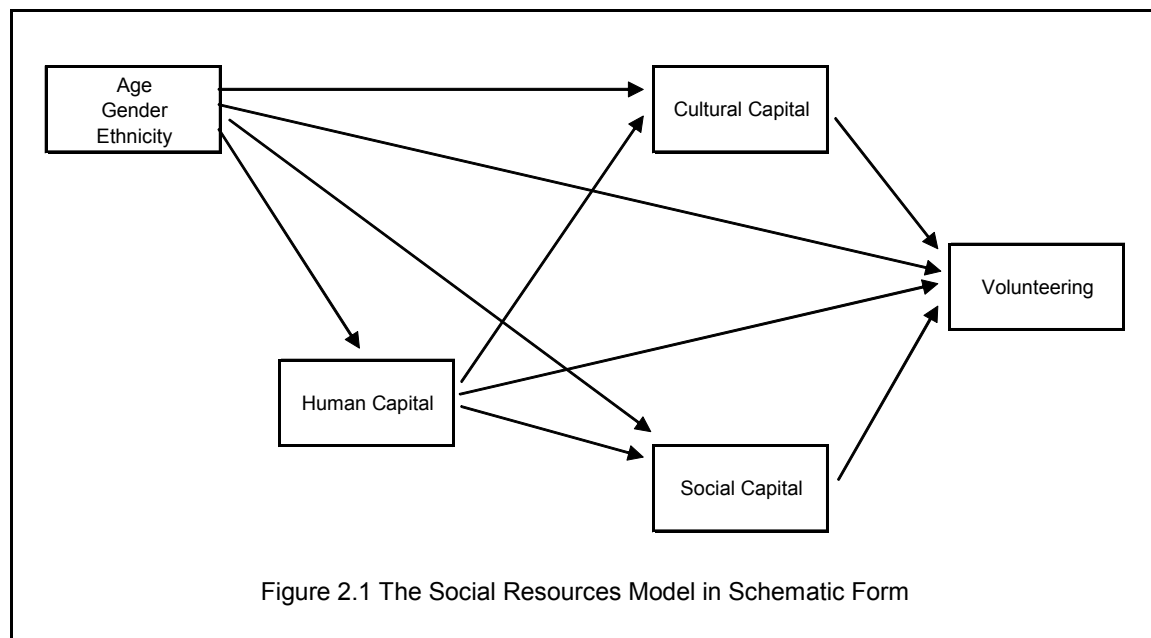
brings the issue of social class into the analysis of volunteering. The effects of social class have been examined in the literature on volunteering, but typically class is defined as socioeconomic status (e.g., Musick, Wilson and Bynum., 2000:1540) or is simply equated with education (McPherson, 1981: 711). With few exceptions (Daniels, 1988; Van Til, 1988; Wilenski, 1962) the connection between class and volunteering has not been analyzed from a relational class perspective. This is surprising since as Wuthnow (1991:307) points out, “Voluntarism is, and has been from its inception, largely a feature of the middle-class.” It is also surprising since voluntarism is a distinctive characteristic of advanced capitalist democracies and is firmly embedded in prevailing social and economic structures (Salamon and Anheier, 1998:227). Some early research examined differences in volunteering across social classes (e.g., Gordon and Babchuk, 1959; Kahl, 1957: 147-150), but in recent research the concept of discrete class categories has been replaced with a concept of gradational differences (social status) that lack identifiable group boundaries. There may be some advantage to integrating social class into the analysis of volunteering since at least one analysis of Canadian data suggests that volunteering is more strongly influenced by class position than by social status (Selbee, 2001). Theories that focus on other dimensions of differentiation, such as gender and ethnicity, may similarly provide a more complete understanding of variations in social resources.

Revising the Social Resources Theory: The Outcomes

The social resources theory of volunteer activity brings together in one model the various strands of explanation that have informed research on this subject in the past. The

model, as developed by Wilson and Musick, is presented in schematic form in Figure 2.1.

In general terms, the model states that variations in volunteer activities are affected by



variations in the level and type of human, social and cultural capital. Cultural and social capital in turn are affected by levels of human capital, and all three types of capital, and volunteer activities, are themselves directly affected by exogenous factors --- those not explained or accounted for, in whole or in part, by the model. As it stands, the model is a reasonable first approximation to an integrated theory of volunteering but there are aspects that can be improved by revisions to the model. These not only bring the model more in line with broader sociological theories that account for variation in all forms of capital, but also more clearly identify the conceptual components of the model and how they interrelate. The revisions also expand the range of activities (range of volunteer behaviours) to which the model might apply. In the discussion that follows, these changes to the model will be examined in detail.

Outcomes: The Likelihood of Being a Volunteer.

The social resources model was developed in order to explain specific types of helping behaviour. It was initially used to account for the range of formal organizations an individual had done volunteer work for, and the hours spent working for these groups, and for the types of direct personal helping (informal volunteering) an individual had provided to others, and the time spent in these activities (Wilson and Musick, 1997a: 702; 1998:805). In a later application, it was also used to explain an individual's attachment to volunteering --- the tendency to maintain volunteer activities over time (Wilson and Musick, 1999:245). In the sense that it has been used to account for a number of factors that measure the level of an individual's involvement in volunteering, it is evident that the model is meant to explain a broad range of characteristics of volunteer work. If this model is a general account of volunteering, then it should be possible to use the model to explain aspects of volunteering with which it has not yet been explicitly connected.

Volunteering as social behaviour can be characterized as composed of two separate components: the first is the likelihood of an individual being a volunteer, and the second is the nature of their participation as volunteers --- what here will be called 'volunteer effort'. Wilson and Musick tend not to distinguish these two components of helping behaviour. When they examine the hours individuals commit to formal volunteering, for example, they combine those who have zero hours, the non-volunteers, and those who have positive hours, the volunteers (Wilson and Musick, 1997:702). This is acceptable if one assumes that the factors that determine whether or not a person becomes a volunteer are the same factors, with the same effects, that determine how many hours they commit

to volunteer work. This assumption may be valid, in that the social resources theory can be used to explain both components of the process. However, this does not mean that the more restrictive assertion that the causal model is exactly the same in both cases must be maintained. Instead, at an empirical level the effect of social resources on the likelihood of being a volunteer may be quite different from their effect on the level of effort expended on volunteering. Moreover, this need not be an untested premise of the social resources model since it is a testable empirical hypothesis. This is precisely the analytical strategy pursued in this dissertation. In the first stage of the analysis, the social resources theory is used to explain the likelihood of being a volunteer while in the second analysis the same theoretical model is applied to understanding the level of effort volunteers put into their volunteer work.

The helping behaviour that the social resources model is hypothesized to explain is defined in a more restricted sense here than it has been by its originators. As noted above, two of the outcomes to which the model has been applied involve direct personal helping, what is described as informal volunteering (Wilson and Musick, 1997: 649-695). The intent, in looking at both formal and informal helping behaviours, is to recognize that direct helping and formal volunteering are both socially productive behaviours that deserve sociological attention. This is undoubtedly true and it may well be the case that the social resources model provides a theoretically informed explanation of direct helping. But as Wilson himself notes, where informal helping tends to be a sporadic and reactive behaviour, formal volunteering "...is typically proactive rather than reactive and entails some commitment of time and effort. Whether or not it should include behaviours conventionally described as caring is currently under debate." (2000: 216).

And in the research where they first propose the social resources model, Wilson and Musick "...anticipate several differences in the social foundations of formal and informal volunteer work." (1997: 700). The fact that 66% of Canadians take part in some form of direct helping, while only 26% take part in formal volunteering, supports the contention that there are different processes at work and that at a minimum the two phenomena should initially be treated as analytically separate, if not theoretically different. It is not the intent in the research proposed here to theorize informal helping. Instead, the research focuses only on volunteering behaviours associated with formal organizations. It is notable in this regard that Wilson and Musick (1997a) themselves recognize the need to distinguish between the two in that their empirical research treats them as separate dependent variables---measures of one are not combined with measures of the other to create a single measure of helping behaviour.

Outcomes: Volunteer Effort.

Wilson and Musick identify three components of volunteer participation that are hypothesized to be explained by the social resources model: (i) attachment to volunteering over time; (ii) the number of types of organizations for which people volunteer; and (iii) the number of hours volunteered. In the research undertaken here, slightly different indicators of volunteer participation, or what here is described as volunteer effort, are employed. In addition, a specific causal structure among the components of effort is a central part of the model of volunteer effort as it is applied to the Canadian data..

Attachment to volunteering is defined as “...the consistency with which individuals are to be found in the [volunteer] labour force over time.” (Wilson and Musick, 1999: 245). This is the same as the idea that is routinely used to describe continuity of participation in the paid labour force. Wilson and Musick measure attachment by comparing whether or not a person was a volunteer in two waves (1986 and 1989) of an American panel study. Attached individuals are those who were volunteers in both waves of the study. This group is then compared to those who were volunteers in the first wave but not in the second --- those who had ‘detached’ from the labour force (Wilson and Musick, 1999: 251).

The NSGVP 2000 data are cross-sectional so it is not possible to measure this form of attachment. There is, however, information about how long the respondent had been a volunteer for one of the organizations for which they currently volunteered. This aspect of volunteer effort, the duration of current attachment, is used to measure commitment to the volunteer labour force.

The second aspect of volunteer effort in the social resources model is the number of organizations for which the individual has volunteered. In their research, Wilson and Musick measure this as the number of different types of groups rather than the actual number of groups (1997:702). In the NSGVP data, the number of organizations a person did volunteer work for is measured directly.

The third aspect of volunteer effort identified in the social resources model is the most obvious --- it is the number of hours volunteered for all organizations combined. As with the number of organizations, this is measured directly in the NSGVP data as the total of all hours volunteered for all organizations over the prior twelve months.

The NSGVP data allow for a fourth measure of volunteer effort --- the diversity of tasks undertaken by a volunteer on behalf of one or more organizations. Most volunteer organizations depend on their members to undertake a variety of roles, both in running the organization and serving the needs of the members and clientele, if any. In many organizations this involves members choosing the tasks they will undertake and often rotating through different positions at different times (Rothschild-Whitt, 1979: 517). But in practice, it is often the case that some volunteers take on a larger share of the workload than others. Often this occurs because the work would not get done otherwise (Oliver, 1984). Those who are more responsive to the needs of the organization and undertake a wider range of activities in the organization exhibit a higher degree of volunteer effort.

The effort an individual puts into volunteering can be expressed in any or all of these four ways. The longer the duration of attachment to the volunteer labour force, the greater is the level of volunteer effort. The same holds true, on average, for the number of organizations volunteered for, the number of tasks performed, and the number of hours worked. These are not meant to exhaust the possible ways to assess the effort people devote to volunteering. There may be other ways to evaluate effort that are not captured by these four measures. For example, some positions in voluntary organizations may not require substantially more time or more diverse activities but still place demands on the volunteer that require more effort than other positions. Oliver, in studying individuals who undertake active leadership roles in volunteer organizations, notes that they are often "...under-rewarded workhorses..." who absorb the "...high costs of their participation while personally realizing relatively little of the collective goals." (1984: 601). In other situations some volunteers may be doing jobs that are more physically demanding, or are

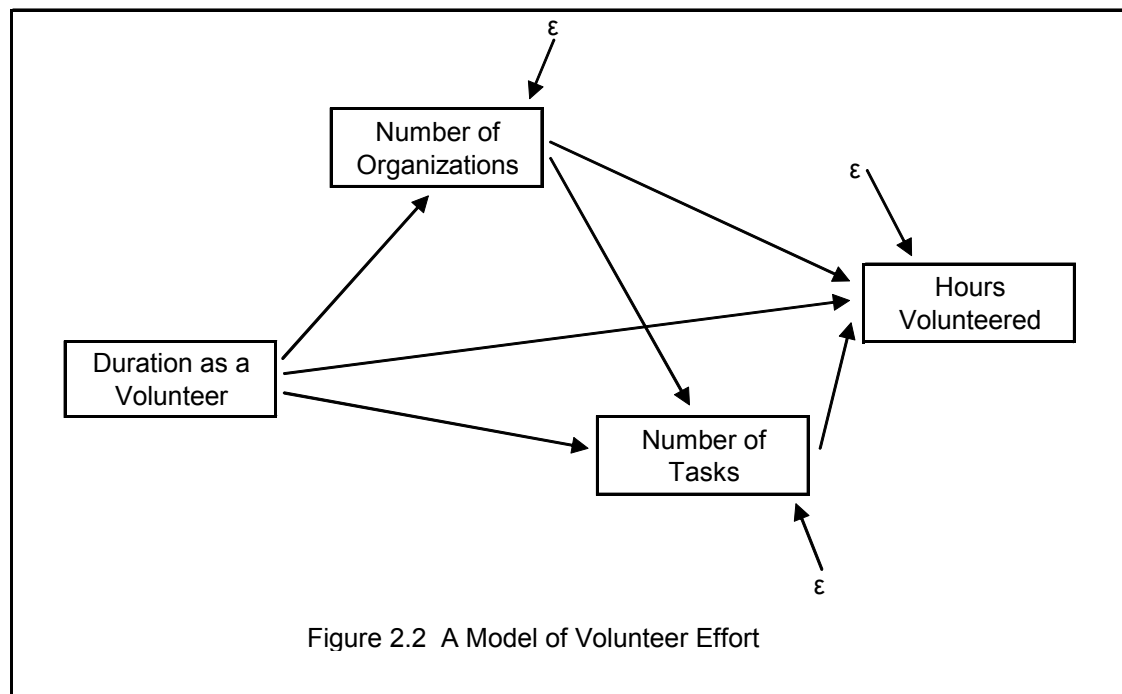
less pleasant than others they work alongside. These all represent aspects of volunteering that could conceivably be used to measure levels of effort (Tomeh, 1973: 93).

Nonetheless, the four measures that will be used here probably represent the major ways differences in effort are expressed in the volunteer population.

Although Wilson and Musick analyse different aspects of volunteer effort, they do not formally set out the structural relationships that will exist among them. They do not describe the causal relationships hypothesized to exist among the indicators of volunteer effort. Instead, they combine the number of organizations (their ‘volunteer index’) and hours volunteered to create two latent variables labelled the ‘volunteering construct’ at time 1 (1986) and time 2 (1989). The social resources model is hypothesized to affect the 1986 volunteer construct, and both the 1986 construct and social resources affect the 1989 construct. Because the number of organizations volunteered for and the number of hours volunteered are used as indicators of an underlying factor, the relationship between each, and between them and the social resources are not analysed directly. Since their goal was to examine how social resources affect volunteering in general, the strategy they followed is acceptable. However, it does not represent a complete examination of the possible causal relationships that might exist among indicators of volunteer effort. One aim of this dissertation is to specify and then test the theoretical connections between the four components of volunteer effort, and to identify the influence of social resources on each of the components.

A Structural Model of Volunteer Effort.

The proposed model of volunteer effort is presented in Figure 2.2 as a saturated recursive model. It states that all causal relationships are one-way --- there are no instances of mutual causation --- and that all prior variables affect all subsequent



variables. Thus the length of time an individual has been a volunteer has a positive effect on the number of organizations they belong to. Both of these then have a positive effect on the diversity of tasks a volunteer will undertake, and in turn these three will have a positive effect on the hours devoted to volunteering each year. The presence of disturbance terms (ϵ 's) in the model indicates that these relationships are stochastic rather than deterministic (Duncan, 1975: 3-4). This simply acknowledges that the prior variables are not considered to completely determine the subsequent variables. It leaves open the possibility that there are other factors that may account for some of the variation in each of the components. Perhaps the most important of these involves the “demand

side” of the volunteering model. The social resources theory largely focuses on the way the characteristics of individuals affect the likelihood of being a volunteer and the effort expended in volunteer activities. It is important to remember, however, that volunteering has both a supply side and a demand side. The supply side refers to the process through which an individual becomes a volunteer and then devotes time to volunteer activities. The focus here is on the characteristics of those who are and are not volunteers. But formal volunteering takes place in the context of an organization and it is organizations, through the ways they recruit and employ volunteers, that determine the demand side of the equation. An important part of understanding the connection between social resources and volunteering is understanding the nature of the demand for volunteers. Demand partly determines which resources matter and is responsive to resources that are available in the pool of possible recruits. In fact, social resources may at times actually define the pool of possible recruits. This is, in the main, what underlies the dominant status model of volunteering. It suggests that higher status people are more likely to volunteer because the organizations more actively attempt to recruit them or are more willing to have them as volunteers--- they are more desirable as volunteers. So social resources can act in two ways; as resources for the individual that dispose or enable them to volunteer, and as resources volunteer organizations access by recruiting a particular volunteer, or use to identify potential recruits. Often these two aspects of resources mutually reinforce each other, but there can be contradictory forces at work in supply and demand conditions. People with low levels of attachment (low hours) may be volunteers more due to “moral obligation” than commitment; as Freeman says, they would rather not do it but feel obligated to do so (1997).

The causal ordering of the volunteer effort structural model is based on both an implicit temporal ordering of the components, and an explicit description of how change in a prior component produces change in a subsequent component. Admittedly, there are situations in the real world where the sequence of causation will not follow the hypothesized sequence. However, the causal ordering as set out is presumed to apply in the majority of volunteer effort situations. Lacking evidence to the contrary, reciprocal causal paths are excluded from the model. If such evidence arises, the model can be reformulated with appropriate non-recursive effects. This would introduce more complex estimation procedures to an empirical analysis because the disturbance terms are not independent in a non-recursive system, but the problem is tractable and could be tested from the available data (Hanushek and Jackson, 1977: 231-236). As a starting point, however, the structural model of volunteer effort is treated as a recursive system.

Duration as a volunteer represents an individual's attachment to volunteering as more than just a periodic, obligatory response to external demands. Individuals who have been volunteering for protracted lengths of time clearly are willing to expend effort on these activities. These are the kinds of people for whom volunteering takes on aspects of a career---a regular, recurrent part of their lives (Wilson and Musick, 1999: 245). In contrast, individuals whose attachment is low will be characterized by short term and episodic bouts of volunteering. One consequence of increased commitment to volunteering will be an increased tendency to volunteer for more than one organization. Research has shown that being active in one organization is the strongest predictor of being active in other organizations (Cress et al, 1997; McPherson, 1981; McPherson and Rotolo, 1996). This suggests that individuals who are active in one organization are more

disposed to involvement in other organizations (supply side) and that being a volunteer in one organization increases an individual's exposure to active recruitment by other organizations (demand side). For individuals who are recent volunteers, the tendency to take on other commitments, and their potential as objects of recruitment, will be lower.

As duration increases, the range of activities or tasks a volunteer will undertake will also increase. This is much like the effects of on-the-job training and years of labour force experience in the regular labour force. The longer a person has been active, the more they develop the competencies to undertake a wider range of tasks. It may also be the case that those with the longest durations are the core organization members who typically undertake more tasks (Pearse, 1993: 10).

Duration increases hours volunteered directly. Long-term volunteers have established a commitment to volunteering and will be more responsive to the needs of the organization for volunteer work. Long term volunteers will also have reconciled the trade-off between volunteering and other demands on their time and thus will be more disposed and able to increase their commitment.

The number of organizations a person volunteers for increases the number and diversity of tasks they undertake simply because the range of different tasks available will increase as the number of organizations increases. Diversity in structure, purpose and clientele across organizations will expand the range of tasks available to a volunteer (Smith and Reddy, 1977: 323-324).

Number of organizations increases hours volunteered because volunteering for more than one organization means a commitment of time to multiple organizations. While some volunteers may adjust the hours they work for multiple organizations in

order to maintain a fixed level of effort, the tendency in most cases will be for the total commitment of hours to increase.

Finally, as the number of tasks undertaken increases, the number of hours volunteered increases simply because each task requires a finite amount of time. A volunteer who is doing one particular task regularly will tend to increase time volunteered if they take on another task. Taking on additional tasks, in itself, implies an additional commitment of time.

Modelling the structure of volunteer effort as a set of interrelated factors makes it possible to determine how different social resources affect each aspect of volunteer effort separately. Empirical tests of the model will indicate how components of the social resources model affect components of volunteer effort directly and how they affect various aspects of effort indirectly --- through their effects on other parts of the structure. This will clarify the social processes that in the end generate the outcome of interest in the theory: hours volunteered. For example, research shows that there is a strong connection between level of education and volunteer effort. The dominant status model, for example, says that this occurs because these individuals are more 'attractive' to volunteer organizations and thus will be more actively recruited by those organizations. If educated people respond to recruitment efforts, it implies that educated people will tend to be active in more organizations than those who are not actively recruited --- low education individuals (Smith, 1994). The effect of education as a social resource will be expressed in its tendency to increase the number of organizations a person volunteers for. However, McPherson's longitudinal studies show that educated people are also likely to remain volunteers for longer spells (McPherson, 1981: 719). If duration as a volunteer

means that one's risk of being recruited by other organizations increases, then the effect of education on the number of organizations may be through its tendency to increase duration rather than by directly increasing the number of organization. By specifying the causal structure among the four aspects of volunteer effort it will be possible to identify precisely how social resources affect different components of volunteer effort. In particular, it will allow identification of the direct and indirect effects of resources on each component of effort. Given the rather amorphous character of explanations of the specific connection between resources and volunteering, this will certainly improve our understanding of how resources translate into differences in volunteering.

Revising the Social Resources Theory: The Causes.

The structure of the social resources model as presented by Wilson and Musick was determined by their research goals and the data available to test the theory, and in this way it is limited in its generality. In particular, the discussion of what constitutes human capital and the role of exogenous factors such as age, gender and race can be reformulated in a way that more accurately reflects current understandings of these components and their inter-relationships.

Group Differences in the Social Resources Model.

A first problem with the social resources model is the inclusion of exogenous factors such as age, gender and race as factors that affect the levels of capital and volunteering. This was obviously done in order to incorporate in the model factors that have repeatedly been shown to significantly impact volunteering (Wilson and Musick,

1997: 700-701). This is desirable, but these effects should be incorporated in two different ways that are more appropriate for a structural model.

Age need not be treated as an unexplained exogenous factor but rather is properly seen as a component of human capital. Age can be viewed as an indicator of an individual's accumulated life-skills in much the same way years of experience in the labour force is treated as an indicator of accumulated work skills in human capital theory (Becker, 1975: 232; Day and Devlin, 1996:43). Indeed, in examining how civic skills affect political participation, Brady, Verba and Schlozman note that these skills are not only acquired early in life through socialization and education, but are also continually expanded and improved over time through participation in many spheres of life (1995:273). These life-skills, as with formal education, represent human capital resources.

Factors such as gender, race, or even religious affiliation are often important predictors of volunteer behaviour and need to be considered when analysing the sources of that behaviour. But they are not properly part of a structural model of volunteering --- they are not causally related to the components of the model. Rather they represent qualitatively distinct groups of people for whom the mean levels and strength of the paths of the structural model may be substantially different. When variables such as gender are included in these models they are proxies for unmeasured variables that correlate with group differences. Importantly, they do not explain why there are group differences nor how group differences affect components of the model. A significant effect for these types of variables only says that there are significant differences in the mean level of the outcome variable across groups. But that is only part of the possible effect of group

differences in the structural model. As important is the question of whether or not there are significant group differences in the path coefficients of the structural model itself. The answer to this question requires a more complex analysis strategy than simply adding indicator variables for the groups of interest. It requires that we examine the presence or absence of structural paths, and their strength, across groups, in addition to simple differences in mean levels. In doing so we can begin to understand precisely how the differences between groups affect the structural model (and thus the social process it represents).

The essence of this approach, as will be described in more detail in Chapter Three, is to examine both the main effects and the set of interaction effects between the grouping variable and the components of the structural model. This provides a way to better understand how group differences are translated into differences in the way the structural model operates across groups. This basic strategy is followed in order to examine the effects of nominal variables (group differences) on volunteering.

Human Capital and Economic Capital: Distinct Resources.

In their formulation of the social resources model, Wilson and Musick include socio-economic status, as measured by education and income, as one component of human capital resources (Wilson and Musick, 2000: 1548). This has the effect of combining two analytically distinct types of resources --- those that are intrinsic to a particular individual (human capital resources) and those that are connected to both the individuals, their current family, and their position in the basic social structures that differentiate social positions hierarchically (economic resources).

In the extensive economic literature, human capital is primarily seen as the resources that enable a person to perform competently in the regular labour force. These resources are knowledge acquired through formal education and on-the-job training, and health (Becker, 1975:16) Human capital does not include economic resources, it is only one of the factors that determines an individual's economic resources. Factors other than human capital also affect the individual's economic resources. Being part of a union or facing segmented labour markets can also positively or negatively affect an individual's economic resources (Baron and Bielby, 1984).

Becker's theory of human capital primarily focuses on earnings (income) differences as the outcome of differences in human capital, but earnings are acquired through performance of a particular job in the labour force, and positions in the occupational structure are both horizontally and vertically differentiated both in terms of their social status (Blau and Duncan, 1967) and social class positions (Wright, 1985). Human capital represents resources that in part govern access to these positions. Thus economic resources depend on, but are analytically separate from, resources defined as human capital. In research on volunteering this distinction is important. Human capital resources are connected to specific individuals and are non-transferable in the sense that a person cannot access another person's human capital. In contrast, economic resources characterize an individual's position in the basic structures of inequality in society and that position can be defined by one or more person's economic resources. The basic idea is that human capital is derived from the individuals' own characteristics, but economic resources are often defined by the family or household in which they live. The level of economic resources this represents need not be linked specifically to the resources that

are intrinsically their own. Rather they usually share access to these resources as part of a family or household unit. It is quite conceivable that the effect of human capital and economic resources on volunteering are different. By separating them it will be possible to identify how each affects volunteering without confounding their effects.

In addition to education, human capital resources include age and health. Age represents the life-skills acquired over time by simply living in society. These are communication and organizational skills that increase the ability of the individual to participate effectively in many types of organizations, including volunteer organizations (Brady, Verba and Schlozman, 1995: 271). Education also facilitates participation because it imparts basic skills and knowledge. In addition, age and education credentials are important signals that the individual is “qualified” for a particular volunteer job. This may lead to a greater likelihood of recruitment, and greater success in competing for volunteer positions (Wilson and Musick, 1999: 247). Health affects volunteer activities because poor health has a limiting effect on the individual's ability to participate (Caputo, 1997) and on the amount of time they can contribute (Gallagher, 1994: 574; Wilson and Musick, 1997: 699).

Economic Resources

Economic resources include income, status, class, and employment characteristics. Income is a direct indicator of the wealth (money) an individual has with which to defray the monetary costs of volunteering that may be barriers to volunteer participation (Sundeen and Raskoff, 1994: 384). In very broad terms, income represents the level of discretionary spending available to individuals (Wilson and Musick, 1998:

800). Income also represents the opportunity costs individuals face when making decisions about how to allocate their time. Where greater discretionary spending may facilitate volunteer participation, opportunity costs may inhibit participation. Individuals may decide to spend their time in ways that have a more concrete reward (Menchik and Weisbrod, 1987: 161).

In the economic literature on the supply of volunteer labour, the notion of opportunity cost plays a central role in explaining people's behaviour. The economic explanation of volunteering begins from the proposition that in making decisions about how they will allocate their time, individuals seek to maximize some unobserved utility subject to constraints on their time and the wage-rate they face (Day and Devlin, 1996: 39-40). The opportunity cost individuals face in deciding to volunteer or not is what they could earn if the hours volunteered were devoted to paid work. This is best measured by their own current wage-rate or hourly pay (Menchik and Weisbrod, 1987: 161).

Wealth and opportunity cost are useful ideas for understanding how economic resources affect volunteering. But they are limited in their strict focus on individual wealth and costs. The majority of adult Canadians (65% in NSGVP 2000) do not live as separate individuals but as part of larger household units (most often families of various sorts). When assessing an individual's economic resources, personal data will often inaccurately reflect the actual resources available to the person. A more appropriate measure of economic resources such as income, is probably data for the household as a unit. Since these resources are typically shared among household members as needed, they are a better indication of any one individual's access to them. This resolves the issue of the economic resources of those who earn no employment income, but have access to

the income of others in the household. It is also possible to assess the opportunity cost to the household as a whole of a member doing volunteer work. As a rough approximation, given the data in the NSGVP, we can use the respondent's own income as a proportion of the household's income: the higher the proportion of household income a respondent contributes, the greater the opportunity cost to the household in foregone earning represented by volunteered time.

Two additional components of economic resources found in the literature are occupational status and class position. These represent possibly distinct dimensions of an individual's "social status" --- their position in a structured system of inequality. Social status differences are often used to explain differences in volunteering but what is meant by status in general is rarely well-defined. As many analysts have pointed out, even in the dominant status model, the attributes of individuals that constitute a dominant status are not clearly or systematically defined (Smith, 1994). In the revision of the social resources model two aspects of an individual's position in society represent social status --- occupational status and class position. Although these cannot be adequately operationalized in the NSGVP data and thus are not used in the ensuing analyses, they should be mentioned in the discussion of theoretical model

As employed in studies of volunteering it is evident that one meaning of dominant status is the prestige or social standing accorded occupations as social roles that are more highly valued or preferred (Smith, 1994: 246). In the revised model the rather vague idea of dominant status is replaced by the more specific idea of occupational standing as an economic resource. A related dimension of social standing is class position. Where occupational status is uni-dimensional vertical structure of economic differentiation, class

position is a multidimensional structure of differentiation. The two are not synonymous, each captures slightly different aspects of social standing. Occupational status (prestige) is related to how others evaluate a person's occupational position, while class relates to an individual's fundamental relationship to the economic structure of society. Class position involves fundamental differences in the nature and quality of economic resources, including wealth and power (Goldthorpe, 1980: 38-42; Giddens, 1973: 100-107). Cultural and social capital, as well as volunteering, can be seen in part as consequences of these types of economic resources.

Class and status are proposed as components of the theoretical social resources model, although they will not be part of the model as it is tested empirically. In order to include measures of these economic resources in the empirical model, information about the class and status positions of all volunteers would be required. This is not problematic for individuals who are currently in the labour force, since assigning individuals to class and status positions can be accomplished with occupation, education, and employment status characteristics (Selbee, 2002: 15). However, in the NSGVP data, 30% of respondents were not in the labour force (24% of volunteers and 31% of non-volunteers), and information about others in their households that could have been used to construct class and status positions for these people was not collected. Since being currently employed has repeatedly been found to have a large effect on volunteering (Wilson, 2000: 220), restricting the analysis only to those who were employed would result in a test of the social resources model that ignores this factor and eliminates almost one-third of those it was meant to represent.

Wilson and Musick do not discuss how economic or human capital resources affect cultural and social capital, other than noting that part of the effect of individual resources (human and economic capital) on volunteering may actually be located in the effect they both have on the intervening resources: social and cultural capital (1998: 801). In their discussion of social and cultural capital they draw on the work of Coleman and Bourdieu on social capital and Bourdieu for cultural capital. An expansion of this discussion can better illuminate the connections between human and economic resources and social and cultural capital and will be undertaken after the nature of social and cultural capital and their effects of volunteering have been considered.

Social Capital

Social capital is incorporated as one component of the social resources theory of volunteering in order to account for the way organizations mobilize participation, and at the same time overcome the free-rider problem associated with collective action. The resolution of both problems lies in the connection between social capital and social networks (Wilson and Musick, 1997: 695). Volunteering is then explained by the nature of the social networks in which individuals are embedded. Since the discussion of the role of networks in generating social capital is fairly brief in Wilson and Musick's exposition, this section examines in greater detail the role of social networks in both promoting and inhibiting volunteering.

Social Capital and Social Networks

In Coleman's description of social capital, individuals are more or less embedded in a web of social relations that affect their ability to access resources to achieve desired goals. These relations are the basis of social capital and are expressed primarily in the form of social networks (Coleman, 1988:S105-S106). In a similar vein, Bourdieu argues that social capital derives from "...possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition -- or in other words, to membership in a group...." (1986:248).

There is an extensive body of research on the nature of social networks, much of which focuses on how larger social structures can be understood in terms of the character and pattern of connections that exist among individuals as social networks (Wellman, 1983; Burt, 1980). At the center of this research is the question of how the pattern and content of ties in social networks provide opportunities and constraints on an individual's access to various social resources (Wellman, 1983: 157). In the study of volunteering, social networks are linked to participation in two important but distinct ways. The first focuses on how social networks affect the process of joining voluntary organizations. Since in many instances, joining a voluntary organization entails some level of commitment to volunteering, the factors that affect joining also affect the likelihood of volunteering. From this point of view, the effect on volunteering is through the patterns of recruitment to volunteering that exist within an organization. Social networks also have a direct effect on volunteering in the form of recruitment from outside an organization. In terms of the importance of social networks for either form of

recruitment, there are few differences of consequences for the study of volunteering. Social networks strongly shape both types of recruitment, although there possibly are differences in the type of social ties that operate in each situation.

There are many ways that networks determine how the social resources that represent social capital are accessed. Four characteristics of networks that are typically important in this regard are the size of the networks a person is involved in, the density of the ties that connect the individuals in those networks, the diversity of the networks involved, and the content of the ties that exist in the networks.

Social Capital and Network Size

Clearly, the accumulation of social capital in networks depends on the size of the network, defined as the number of individuals who are known to each other and who interact on more than a passing basis (Burt, 1980: 90). The larger the network, the greater the number of individuals among whom reciprocal obligations and expectations can develop. As a consequence, larger networks increase the likelihood of being recruited as a volunteer by exposing the individual to a larger number of people among whom these obligations and expectations of reciprocity exist. This effect is supported by research that has repeatedly shown that most people become volunteers by being asked to do so by someone they know personally (Freeman, 1997: S163). The size of the networks also determines the strength of the information function of social capital. The more people an individual interacts with regularly, the greater the range of information that they will have available to them and the greater their exposure to opportunities to volunteer. Thus the

size of an individual's social networks is linked to the amount of social capital the networks embody and is positively associated with the likelihood of volunteering.

Social Capital and Network Density

The second characteristic of social networks that is important for the accumulation and effective use of social capital is the density of the network---the number of social ties that exist among members of a network (Marwell and Oliver, 1988:505; McPherson et al., 1992: 158). Reciprocal obligations depend on the group's ability to enforce groups norms and expectations. The effectiveness of norms and sanctions is enhanced to the extent that there is closure in social networks (Coleman, 1988: S107). That is, the more that individuals in a network are known to each other on a face-to-face basis and the less they are bound to other networks, the greater the effectiveness of norms and sanctions, the greater the level of trust, and the greater the social resources they will be able to access. Thus density refers to the extent to which the members of an individual's network interact, not only with the individual in question, but also with each other.

How network density is defined in network analyses depends on the unit of analysis. As Burt (1980) points out, the unit of analysis in network theory can either be a single individual and his or her connections to others in the network, or it can be the network as a whole, where the concern is with all the connections between a specified group of individuals. When the analysis focuses on a single individual, then density depends on the nature of the ties a person maintains with others in his or her network.

When the analysis focuses on the network itself, it is the characteristics of the network as a whole, rather than the particular ties any one person has, that are of interest. In the second case, density is defined as the number of ties that exist among the individuals in a network compared to the number of possible ties (Wellman, 1979: 1215; Marwell, Oliver and Pahl, 1988: 505). From the perspective of the individual, however, network density has a slightly different meaning. It refers to how close or intimate are the ties to others in the network (Marsden and Campbell, 1984: 483).

In the second regard, an important determinant of network density is the contact frequency among members; the more that individuals interact with each other the more intimate the ties, the greater the density of the network and the stronger the reciprocal obligations they build (McPherson, Popielarz and Drobnic, 1992: 158). Thus, the greater the contact frequency among members of a network, the stronger the ties and the greater the level of closure. This leads to more social capital being available within the group.

Another important component of social capital that relates to the density of social ties is the existence of obligations and expectations of reciprocity among a network of individuals. The study of social capital in networks usually focuses on how a given individual accesses resources based on the nature of the ties in their networks. But each time individuals access resources through a network they are incurring an obligation to the person who acts as the source of that capital, as well as to the group as a whole. These obligations are the credits, the social chits, people develop by giving others in their networks access to resources they possess (Portes, 1998: 7). The obligation of the recipient to repay the debt, either directly to the donor, or indirectly through extending

help to another person in the network, is one form of the donor's social capital (Coleman, 1998: S103-S104). Few studies attempt to assess the social credits individuals accumulated through their networks, although this is an important consequence of the density of the relationships they maintain in their networks (Marsden and Campbell, 1984: 483). Granovetter even goes so far as to include the level of reciprocal services in a network as one of the four defining attributes of the strength of social ties (1973: 1361).

In general, network size and density will increase the individual's access to the social capital that exists in a network and will promote recruitment to volunteering from within the network. However, there is characteristic of networks that modifies the role social ties play in generating social capital and in promoting volunteering. As Granovetter points out, a dense network implies the existence of strong ties among its members (1973: 1370) and strong ties can have a limiting effect on some sources of social capital. While strong ties are important for preserving or maintaining resources within the network, at the same time they reduce the capital that can be generated between groups or between networks, particularly in the form of searching for and obtaining resources that do not already exist in the network (Lin, 2001: 10).

In Granovetter's analysis of ties within networks, a significant source of social resources, particularly in the form of information, is related to the weak ties individuals maintain with other individuals. The importance of weak ties for social capital lies in the fact that these ties tend to bridge socially dissimilar individuals and thus open up a broader range of resources for exploitation as social capital (Granovetter, 1973: 1370-1371). While strong ties will promote recruitment to volunteering from within a group, weak ties may be an important source of information about opportunities to volunteer that

is not available in the network. Weak ties may also increase an individual's exposure to recruitment from outside their social network (McPherson, Popielarz and Drobnic, 1992: 153).

Social Capital and Network Diversity

People are involved in multiple networks defined in terms of the content of the ties they maintain (Burt, 1976: 93). In broad terms, most people are involved in a number of more or less separate networks---their family, their friends, their acquaintances and neighbours, and perhaps their co-workers. These tend to provide different types of resources to the individual (Hoyt and Babchuk, 1983: 85). The density of the social ties and the contact frequency across these sub-networks defines the composition of the individual's entire complex of networks in terms of strong and weak ties. Strong ties are generated by frequent interaction among network members but this also means that all the individuals in the network interact with the same basic group of individuals most of the time. This tends to limit social capital in the form of the information and exposure components of networks (Burt, 1997: 340-341). In contrast, the existence of weak ties between different networks increases this form of social capital. Weak ties typically represent connections between rather than within networks and thus expand the range of potential contacts. Significant in this respect is Coleman's point that individuals involved in diverse (multiplex) sets of personal ties will have access to a greater pool of resources than those involved in less diverse (simplex) sets of relations (1988:S108-S109). As Wilson and Musick note, the contact frequency of networks (strong ties) should reduce

participation, while the diversity of networks (extent of weak ties) should enhance participation (1998:803). Strong ties reduce the range of information about volunteering opportunities, and limit the number of well known individuals who might themselves be volunteers and thus reduce the likelihood of recruitment either to an organization or to volunteering itself (McPherson, Popielarz and Drobnic, 1992: 157). Weak ties increase both aspects of social capital and thus tend to increase participation as a volunteer.

Another aspect of social networks that is related to network diversity and is of particular importance for realizing social capital is what Coleman calls “appropriable social organizations”. Formal organizations provide a unique context in which the various forms of social capital can be developed (obligations and expectations, trust, information and strong norms) and are a particularly effective base for developing social resources because the formal structure of these groups implies a set of rules of conduct that are enforceable (expulsion is the ultimate sanction). Membership in formal organizations results in multiplex relationships where “...resources in the form of other persons who have obligations in one context can be called on to aid when one has problems in another context.” (Coleman, 1988: S109). In this way, memberships in formal organizations indicate the diversity of networks an individual may be involved in. Since the membership of different organizations is unlikely to overlap in any substantial degree, each organization is a different source of resources based on weak ties (Granovetter, 1973: 1375).

A final way social capital accumulates is through the group member’s awareness and acceptance of the obligations they have to others in the group, or what Coleman calls strong norms of reciprocal obligation (1988: S104). Part of the development of strong

norms is based on what Portes calls “value introjection” and operates through socialization into consensually established beliefs (1993: 1326). This suggests that individuals with experience in diverse group situations will be better able both to access the information and obligation resources, and to respond appropriately to demands for their cooperation in the network (access to their resources by others).

To summarize, the impact of social capital on the likelihood of volunteering and on volunteer effort is obviously complex and depends to some extent on the nature of the social ties that make up any given individual’s social networks. Network size, regardless of the kind of ties, whether strong or weak, should increase volunteer participation. Network density, in the form of strong and weak ties, does not have a clear effect on volunteering. Strong ties mean there will be strong norms of reciprocity and a strong sense of mutual obligation, both of which should increase the likelihood of participation when recruitment occurs from within a network. On the other hand, weak ties are likely to provide more information on volunteer opportunities and may increase the individual’s exposure to other who are volunteers. These may increase the likelihood of recruitment across social networks. There is some evidence that strong ties will limit participation by increasing an individual’s commitment to a particular organization, while weak ties tend to draw individuals into more than one organization (McPherson, Popielarz and Drobnic, 1992). If this is the case, weak ties should promote participation more than will strong ties. Participation in formal organizations should increase participation since this represents a source of diversity in social networks and tends to be associated with a prevalence of weak ties. And finally, exposure to volunteering should increase participation through socialization into the values and attitudes that support and

legitimate the worth of this activity. The impact of social capital on volunteering is not uni-dimensional, but then neither is the concept of social capital. One goal of the research undertaken here is to unravel some of these effects and identify how the components of social capital empirically affect volunteering.

Cultural Capital

Cultural capital is the one new and untried component of the social resources model. As is the case with social capital, there may be much to be gained from an understanding of the role of cultural capital in volunteering.

The idea that individuals possess resources in the form of culturally based dispositions (“tastes”) derives from Bourdieu’s work on the forms of capital (1977; 1986). But in its incorporation in the social resources model, Wilson and Musick are proposing a new view of cultural capital. Specifically, they want to expand Bourdieu’s original idea to refer not only to the aesthetic components of culture, but also a moral component. In this form, cultural capital becomes the “culture of benevolence” that underpins helping behaviours---the values and attitudes that reflect a sense of social responsibility for the wellbeing of others (Wilson and Musick, 1997a: 697).

There is a small but important literature on the connection between values, attitudes and volunteering. In an early attempt to understand the values that motivate volunteers, Smith (1966: 254) identifies a number of general attitudes that distinguish volunteers from non-volunteer. In another study, Cnaan and Goldberg-Glen factor analyzed 28 motives associated with volunteering. They conclude that there is a single underlying dimension to volunteer motivations that could be interpreted as the desire for

a rewarding experience (1991: 281). This finding is contradicted by a 1996 study that found six distinct motivations (sets of values) associated with volunteering (Clary, Snyder and Stukas, 1996:492-493). In a study that used value orientations to differentiate between volunteers and non-volunteers among teenagers, Sundeen and Raskoff (1995) found that teenagers who volunteer place a higher value on charitable behaviours, and place less emphasis on material values such as making money (1995: 346). Janoski, Wilson, and Musick, (1998: 517) also found that pro-social attitudes were better predictors of volunteer activity than were measures of social participation.

None of these studies offer a theoretical model that would equate with the cultural capital conception in the social resources model. As a result, cultural capital is still a theoretical hypothesis, although it does conform to broader arguments that have been offered about a unique set of values associated with volunteering behaviour (Reed and Selbee, 2003). Bellah et. al., (1985) identify a “culture of separation” and a “culture of coherence” that they argue underlies caring behaviours in general. In the culture of separation, the individual is driven mainly by self-interest and is separated from the social, political and civic institutions of society. The culture of coherence represents a world-view that recognizes the interdependence of all members of society because they are, in fact, part of the institutions that make up a society. Others have argued the same point in slightly different terms: Wuthnow (1995) speaks of frameworks of understanding that value “caring”, and Schervish and Havens (1997) speak of “frameworks of consciousness” that promote individual commitment to a cause. To the extent that these “world-views” represent a unique constellation of “...attitudes, knowledge, and preferences [that]can be “invested” to yield “social profit” in the form of symbolic

goods, such as....social esteem....” (Wilson and Musick, 1997a: 696), they represent cultural capital. In the application of the social resources model, cultural capital is taken to be those values and attitudes that represent aspects of an individual’s world-view.

Connecting Human Capital and Economic Resources to Social and Cultural Capital.

The discussion to this point has attempted to present a somewhat more formal theoretical grounding for each component of the social resources model. How these aspects of human capital, economic resources, social capital and cultural capital can be operationalized will be described in detail in Chapter Three, but it remains to describe, at least briefly, how the components of the social resources model are themselves interconnected.

The relationships between social and cultural capital on one side and economic resources and human capital on the other are not systematically set out in Wilson and Musick’s presentation of the social resources model. This section attempts to point to some of the ways the relationships among the components of the theory can be conceptualized. This is presented only as a way to formalize the connections between the components of the social resources model. It is not meant to produce testable hypotheses because in the end, given the data available in the NSGVP, it is not possible to examine these connections empirically. Instead, the empirical analysis will focus on testing the connections between the components of the social resources model and volunteering, not the connections among the components of social resources. The precise nature of these connections is of theoretical interest but are beyond the scope of this dissertation to formally test in a complete manner. This discussion is intended to indicate the ways that

human capital and economic resources might influence volunteering indirectly through the impact they have on the levels and types of social and cultural capital individuals possess.

The connections between human capital and economic resources has been examined in detail above. For the majority of individuals in society, their economic resources amount to their income and are derived from working in the labour force. As some labour theorists have pointed out, income from work is tied less to the individual than to the occupational position the individual occupies. Thus economic resources will vary with the individual's occupational status, or class status (using two different conceptions of this dimension of inequality). Human capital theory states that the individual's occupational position is determined by their human capital. The skills, knowledge and ability acquired through formal education, on-the-job training and life in general will determine where in the occupational/class structure an individual is located and thus determine, in part, their economic resources. In turn, both human capital and economic resources affect the level and kinds of social and cultural capital individuals will possess.

As applied to volunteering, it is important to note, as Coleman does in relation to social capital, that in practice all individuals in the society will possess some amount of all three types of capital (Coleman, 1988:S105). However, the amount and efficacy of any form of capital as a social resource is determined largely by the individual's position in the class structure (Wright, 1985: 148-153). It is certainly the case in Bourdieu's discussion of social capital that, as with cultural capital, it is ultimately based on economic capital and thus is itself class-based (1986:252). This is precisely the situation

Wilson and Musick identify in one application of the social resources model when they conclude that social capital has a stronger effect (is more effective) on volunteering for individuals who possess more or “better” human capital (Wilson and Musick, 1998: 812).

Another way social capital is linked to social position is through the notion of social closure. In much of the literature on volunteering, social capital is usually equated with the extent of the individual’s personal ties. These ties must be of a particular kind – reciprocal, trusting and emotionally positive (Paxton, 1999: 93). But as Coleman himself argues, extensive personal ties, regardless of their character, are in themselves not enough to generate effective social resources. A necessary condition for the emergence of effective norms and sanctions, and the development of trust, is some degree of social closure in the individual’s social networks (1988:S105-S108). Portes suggests that “closure means the existence of sufficient ties between a certain number of people to guarantee the observance of norms”(1998:6). It is only on the basis of closure that groups can apply the sanctions that enforce norms and enable the growth of trust. But the notion of closure also implies that groups must also have the ability to exclude outsiders (Portes, 1998:15). This last is what Bourdieu means when he argues that developing social capital requires “... an endless effort at institution” (1986:249-250).

Strategies of closure in the class structure are intrinsic to class relations. Classes in dominant positions generally practice strategies of exclusion, while classes in subordinate positions practice strategies based upon bounded solidarity (Parkin, 1974: 118; Portes, 1998:8). Combining Coleman's arguments about closure, and notions of exclusion and bounded solidarity suggests that social networks will tend to extend within

classes rather than across class boundaries. The effects of social and cultural capital will be different for individuals in different locations in the social hierarchy.

As noted above, it is not possible to properly test the inter-connections among the components of the social resources theory. However, in analyzing the impact of social resources on volunteering these interconnections are potentially important. They suggest the ways that resources, such as education and income, may have indirect effects on volunteering through their impact on social and cultural capital. When the social resources theory is applied to Canadian data in order to determine whether or not it provides insights into the likelihood of being a volunteer and into the amount of effort individuals devote to volunteer activities, this limitation should be kept in mind.

Chapter Three

Methodology: Data, Models, and Variables in the Analysis

Introduction

This chapter describes the data, variables and methods used in the analysis of the likelihood of being a volunteer and the amount of effort individuals devoted to volunteering. The first section describes in detail the data on which the two analyses are based, the 2000 National Survey of Giving, Volunteering and Participating (NSGVP). The second section describes the dependent variables that are the focus of attention in each part of the analysis. The third section describes the indicator variables used to operationalize the four components of the social resources model. The fourth section discusses the form of the structural model that will be applied in each analysis of volunteering, including an explanation of the model development strategy, the statistical procedures for constructing a logistic regression model of the likelihood of volunteering, and the estimation of a structural covariance model of volunteer effort using the LISREL program. The fifth section discusses the rationale for modelling the effects of nominal factors or group variables on volunteering and volunteer effort with both logistic regression and covariance models. The sixth section discusses the procedures used to validate the models constructed, and the final section discusses issues relating to the use of cross-sectional data for estimating structural models.

The Data: The National Survey of Giving, Volunteering and Participating

The investigation of whether or not the social resources theory provides a useful explanation for volunteering in Canada, whether this is defined as the likelihood of being a volunteer, or as the level of effort people devote to volunteering, is based on analysis of the data in the 2000 Survey of Giving, Volunteering and Participating (NSGVP). This survey was carried out by Statistics Canada in November and December of 2000 as a supplement to the monthly Labour Force Survey (Statistics Canada, 2001). The survey produced extensive information on a nationally representative sample of the civilian, non-institutionalized population 15 years of age and older in Canada's ten provinces.²

The Labour Force Survey is based on a stratified, multi-stage design with probability sampling at all stages of the design. For the NSGVP component of the survey, the response rate was 63.2%, which produced a sample of 14,724 individuals with information on their giving, volunteering and participation activities, as well as extensive information on their socio-demographic characteristics. The data include a weight variable that adjusts the sample counts for sample design and non-response patterns to produce nationally representative population estimates. Application of this weight is required to make the sample representative of the Canadian population but it inflates the sample counts to population counts. To produce a weighted sample with the proper sample size, the weight was re-scaled by the ratio of the true sample size to the size of the population the sample represents. This ensures that statistical tests are based on the proper estimates of sample size and sample variances.

² The Labour Force survey design excludes residents of the Yukon, Northwest Territories and Nunavut. These areas, along with people on Indian reserves, in the military or inmates of institutions make up 2% of the Canadian population.

The NSGVP survey contains 10,791 non-volunteers (73.3%) and 3,933 (26.7%) volunteers aged 15 and over. As discussed below, the models examined in this research include variables intended to measure an individual's human capital and economic resources, among others. Since individuals under the age of 18 are likely still in school and living with their parents, their personal characteristics may not be very accurate measures of their resources. For this reason the data employed in this study are restricted to individuals aged 18 and over. This reduces the sample size to 13,929 with 10, 294 non-volunteers (73.9%) and 3,635 volunteers (26.1%).

Dependent Variables: The Likelihood of Being a Volunteer.

The first analysis undertaken here applies the social resources theory to the question of who is and is not a volunteer. In the NSGVP 2000 survey, whether or not an individual was a volunteer was determined by asking a set of 15 questions about specific volunteer activities undertaken over the previous 12 months. This set of questions was preceded by a lead-in statement: "My first set of questions deals with unpaid volunteer activities done as part of a group or organization in the past 12 months." The next 14 questions asked about specific volunteer activities in the form: "In the past 12 months, as an unpaid volunteer for an organization, did you do any ..." with each question identifying a different type of volunteer task or activity. A final question then asked if the respondent had volunteered in any other way for a group or organization. Individuals who answered yes to any of these questions were treated as volunteers.

It is evident from the tone of these questions that they are meant to capture volunteer activities that are both unpaid and take place in the context, or under the

auspices of a formal organization. Those who take part in any of these activities are thus defined as formal volunteers. There are a number of characteristics of this definition that have important consequences for any analysis of volunteering that uses these data.

First, whether or not a person is identified as a volunteer depends only on what they've done in the past 12 months. Individuals who were volunteers previously, but not in the past year, were treated as non-volunteers. The survey collected no information about individuals' past history as a volunteer. As a result, when comparisons are made between volunteers and non-volunteers, it is important to be aware that the latter include respondents who may have been active as volunteers prior to the past year. When examining factors that promote or inhibit volunteering, the comparison is not between those who volunteer and those who do not, but rather those who volunteered in the last year with those who did not. This distinction is important because while 27% of the NSGVP sample report having volunteered over the past year, research suggests that as much as 60% of the population have been volunteers at some time in the past (Arlett, Bell and Thompson, 1988: 88). To actually compare people who volunteer to people who do not we would ideally want to compare those who ever were volunteers to those who had never been volunteers. As a consequence, to the extent that a given independent variable accounts for volunteering in the population, its effect will be attenuated using the NSGVP data because the population of non-volunteers includes respondents who have, at times, been volunteers. The fact that information about past volunteering is not available diminishes the potential to identify factors that distinguish between the two groups.

The definition of a volunteer in the NSGVP places no limitation on the type of group or organization in which volunteering takes place. This means that the group

involved may in fact be an informal group the respondent participates in, and “volunteering” in this context is more akin to the type of informal volunteering appropriately described as direct helping (Reed and Selbee, 2000b). Although many analysts would treat formal volunteering and direct helping as manifestations of the same social process, there is substantial debate about the connection between the two, and as discussed in Chapter One, as yet there is no clear theoretical justification for treating them as the same phenomenon. The context in which each takes place is in itself different enough to warrant treating them separately, at least initially.

Table 3.1. Dependent Variables in the Analysis of Volunteering

Probability of Volunteering		%	N	
	Non-Volunteers	73.0	9114	
	Volunteers	27.0	3375	
	Total	100.0	12,489	
Volunteer Effort (Volunteers Only)				
	Mean	S.D.	Minimum	Maximum
Duration as a Volunteer in Years	6.4	4.93	0.5	13.5
Number of Organizations Volunteered for	1.7	1.11	1	20
Types of Tasks Performed	3.7	2.44	0	15
Hours Volunteered Annually	165.3	285.26	1	4800

Note: Sample restricted to Individuals aged 18 and over.

On the other hand, when the activity does take place in the context of a formal organization, it is not restricted to public, voluntary, or nonprofit organizations. Under the NSGVP definition, an individual may do volunteer work in a for-profit organization. For example, visiting or helping seniors in a private nursing home would constitute formal

volunteering. This does not create a problem when analysing volunteering in general, but it does mean that the definition of a formal volunteer as used in the NSGVP covers a somewhat broader range of organizations than is typically considered when analysing volunteering. In the literature, for example, volunteering is often restricted to work done for nonprofit groups or organizations (Smith, 1994: 244).

In the analysis of the likelihood of being a volunteer and the effort respondents put into these activities, formal volunteers are defined as those who have done some form of unpaid work for a group or organization in the past 12 months, while non-volunteers are those who have not done such work in the last 12 months.

The difficulty in identifying volunteers, both conceptually and empirically, produces some uncertainty about the actual level of volunteering in the Canadian population at any given point in time. The NSGVP 2000 data show that 27% of the population age 18 and over had been volunteers at some time during the previous year (Table 3.1). By comparison, data from the World Values Survey (1999-2002) suggest that volunteering in Canada may be as high as 47%, although the definition of a volunteer was apparently more inclusive than in the NSGVP (Hodgkinson, 2003: 38-40). There is some evidence that the structure of the NSGVP interview produces a more accurate estimate of volunteering because it begins with the set of questions about various volunteer activities as an aid to respondent recall. The 1997 version of the NSGVP used the same procedure to identify volunteers and produced a national rate of 31% for people age 15 and older (Reed and Selbee, 2000c). A year later, the 1998 General Social Survey did not use any questions to aid recall, but asked the same basic question as in the NSGVP: had the respondent volunteered through a group or organization in the past 12

months. This produced a rate of 34% for people 15 and older (Selbee, 2002). The lower figure for the 1997 NSGVP suggests that taking the respondent through the 15 questions about volunteer activities at the outset of the interview may actually assist them in producing a more accurate report of volunteer activities over the previous year. The proportion of respondents in the 2000 NSGVP who reported being volunteers will, if anything, under-estimate the actual rate of volunteering in the population, but given the structure of the interview, it most likely undercounts those with a very low level of commitment of time and effort, those most like the non-volunteers in this respect. As noted in Chapter One, the wide range of criteria and procedures used to identify volunteers in empirical studies represents a significant impediment to generating comparable research results, both within and across countries.

Dependent Variables: Measuring Volunteer Effort.

In Chapter Two, volunteer effort was described conceptually as a volunteer's commitment to providing unpaid labour to formal organizations. It was suggested that this commitment has several dimensions, including the length of time the individual has been a volunteer, the number of organizations they volunteer for, the diversity of tasks they undertake on behalf of the organizations, and the number of hours they devote to volunteering each year. Each of these is operationalized as a separate endogenous (dependent) variable in a structural model of volunteer effort. Unlike research that includes non-volunteers in the analysis of volunteer effort, here the analysis is limited to volunteers. Combining volunteers and non-volunteers in the analysis of effort confounds

the decision to volunteer with the decision about how much effort individuals will devote to volunteering (Sundeen, 1988: 550).

The first dimension of volunteer effort is the length of time an individual had been volunteering. The NSGVP interview did not directly ask respondents when they had first started volunteering. Instead, this information is collected as part of a group of questions that are specific to one of three organizations the individual was currently volunteering for. As such it does not measure how long a person had been volunteering in general, but how long they had been volunteering for one of the three organizations they had volunteered for in the previous 12 months, and for which they gave a detailed report.

To understand how this and other information pertaining to volunteer effort was collected it will help to understand the structure of the NSGVP interview. As noted above, the interview opens with 15 questions about volunteer activities in the previous 12 months. These serve both to assist respondents in recalling volunteering events over the past year and to identify those who were volunteers. Respondents who answered yes to any of the 15 questions were then streamed to a set of questions asked only of volunteers. The first question in this section determined the number of organizations the respondent had volunteered for in the past year. This was followed by a set of questions about activities associated with each of the organizations for which they volunteered, up to a maximum of three organizations. Among the information elicited was the name of the organization, hours volunteered for that organization, and how long they had been a volunteer for the organization. In the lead-in to this section of the interview the respondent was instructed to provide information for up to three organizations, starting with the one they volunteered the most hours. This set of questions was repeated as

necessary. Immediately following this section, volunteers who were active in four or more organizations were asked to report additional annual hours volunteered for these organizations.

For three of the measures of volunteer effort, the information collected is not taken from the three detailed reports on specific organizations. The exception is the length of time the respondent had been a volunteer. This information is specific to one of the three organizations on which they report in detail. For the 94% of volunteers who were active in three or fewer organizations, the maximum duration as a volunteer is represented by the information from one of the detailed organization reports. For the remaining 6% of volunteers however, duration information will underestimate the actual duration of tenure if they had been active for a longer time for one of the organizations not included in the three detailed reports.

The length of time the respondent had currently been a volunteer is not reported in actual years but in grouped categories of 1 year or less, 1 to 2 years, 3 to 5 years, 6 to 10 years, and more than 10 years. The measure of tenure as a volunteer was constructed by assigning group midpoints, with the 3 to 5 year and 6 to 10 year groups combined because of low counts in the 6 to 10 year group. The upper category of 10 or more years duration was assigned a mid-point of 13.5 years. This will clearly underestimate the duration of volunteering for many, if not most of the 27% of volunteers who fall in this category. The effect of this restriction on duration will be to attenuate any relationship between this variable and the other measures of volunteer effort. It will also reduce the association between duration and the variables in the social resources model. As Table 3.1 indicates, volunteers had spent an average of about six and a half years as volunteers.

This estimate is undoubtedly lower than the actual mean duration in the population because the upper end of the distribution is severely truncated. Clearly, there are people who have been volunteers for most of their adult lives, and the upper limit of thirteen and a half years will seriously underestimate their actual duration. The impact this has on the measure of duration is uncertain because independent estimates of duration as a volunteer are not available for Canada.

The other three endogenous variables in the model of volunteer effort are the number of organizations in which the volunteers were active, the number of types of tasks they had undertaken, and the number of hours volunteered. Each of these variables in their original metric have significant positive skew and kurtosis which indicates that they do not satisfy the normality assumptions that underlie the maximum likelihood methods used to model volunteer effort. To correct for these distributional characteristics, each variable is transformed to its natural logarithm (Fox, 1997:64-67). With these transformations (and one for household income described below) all variables in the analysis, both dependent and independent, have distributions that are well within acceptable limits for the application of standard maximum likelihood techniques (Hu, Bentler and Kano, 1992). As a result, the fit statistics (X^2 values) and standard errors (t-tests for coefficients) are correct for the models being estimated.

The second measure of volunteer effort is the number of organizations for which the individual had provided volunteer labour in the previous year. This information refers only to the previous 12 months but does represent an actual count of all the organizations in which a respondent had participated as a volunteer. Table 3.1 shows that on average respondents in the NSGVP data had volunteered for 1.7 organizations. This characteristic

of the volunteer population has remained remarkably stable over time. In the 1987 Volunteer Activity Survey, respondents volunteered for an average of 1.8 organizations in the previous year, and in the 1997 NSGVP, 1.7 organizations.

The third measure of volunteer effort is the diversity of tasks undertaken as a volunteer, whether in one organization or for several. Measuring diversity of effort made use of the set of 15 questions about volunteer activities that open the survey instrument. These questions were not specific to any organization nor were respondents asked how often they performed each task. Instead they simply answered yes or no to each question. The set of questions is presented in an abridged form in Table 3.2. The measure of number of types of tasks was created by summing the number of 'yes' responses to these 15 questions for each volunteer. In the NSGVP survey a volunteer is by definition someone who answered yes to at least one of these questions, so volunteers have scores ranging from 1 to 15 on this variable. As shown in Table 3.1, volunteers averaged almost four task types over the previous year. Considering the range of tasks listed in Table 3.2, this indicates that most volunteers are involved in a diversity of work roles. Whether this diversity is undertaken by choice or in response to the needs of the organization, it is assumed that the number of tasks performed is indicative of the level of volunteer effort.

It is evident from Table 3.2 that some of the activities would appear to involve providing a service to an external clientele of some sort, while others are more clearly related to the operation of the organizations they volunteered for. Smith (1997: 273-274) identifies two types of voluntary organizations whose structure has important implications for the number and kinds of tasks available to volunteers. On one side are member-benefit organizations where volunteers perform all the required work roles in the

Table 3.2 Types of Tasks Performed as a Volunteer

Type of Task	% of Sample	% of Volunteers
1. Canvassing, campaigning or fundraising	10.5	40.1
2. Serve on a board or committee	11.1	42.7
3. Provide information or help to educate, influence public opinion or lobby others	7.6	29.0
4. Organize or supervise activities or events for the organization	15.0	57.5
5. Do any consulting, executive, office or administrative work	8.1	31.2
6. Teach or Coach	6.9	26.5
7. Provide care or support, including counselling and friendly visiting	6.7	25.8
8. Provide any health care (not already mentioned) in a hospital or senior citizens home	1.9	7.3
9. Provide assistance to a member of a self-help mutual aid group such as single parents, bereaved parents or Alcoholic Anonymous	2.2	8.2
10. Collect, serve or deliver food or other goods	6.2	23.8
11. Maintain, repair or build facilities	4.1	15.5
12. Do volunteer driving	5.3	20.5
13. Help with first-aid, fire-fighting or search and rescue	1.7	6.6
14. Activities aimed at protecting the environment or wildlife	3.9	14.9
15. Volunteer in any other way to a group or organization	5.3	20.2

Samples are based on respondents aged 18 and older.

organization, what Smith calls associational volunteers. On the other side are external-benefit organizations where volunteers are only a small part of a large, formal work organization, what he terms positional volunteers. The importance of the distinction is that volunteers in member-benefit organizations will typically have a wide range of tasks available to them, while in external-benefit organizations, the tasks are highly circumscribed and in many ways secondary to the work roles undertaken by paid staff.

Thus the number of tasks a volunteer undertakes may be partly a function of the type of organization they volunteer for. Unfortunately, the NSGVP survey did not elicit information about the organization that would allow identification of this important distinction. Nor is it possible to clearly separate the tasks in Table 3.2 by these criteria. The most common tasks were organizing and supervising events (58%), serving on a board or committee (43%), and fundraising (40%). Each of these could equally be tasks undertaken in member-benefit or external-benefit organization. Other tasks are likely to be part of external-benefit organizations, such as providing care and support, providing health care or protecting the environment, but even here the distinction may not be hard and fast. As a consequence, some of the differences between volunteers in the number of tasks they perform may be due to the nature of the organization they volunteer for rather than their personal decision about the allocation of their effort. For program volunteers, variations in effort will tend to take the form of variation in hours volunteered rather than in tasks performed. In contrast, associational volunteers can vary their effort either by varying hours or by varying tasks performed. This can be expected to reduce the impact of tasks performed on hours volunteered.

The final endogenous variable in the volunteer effort model is the total number of hours volunteered for all organizations over the prior year. This variable is recorded in actual hours in the NSGVP data, but was collected in two distinctly different ways. For each of the three detailed organization reports, the respondents were asked whether they worked the same hours each week or worked varying hours each week. Those whose work schedule varied, who worked a different number of hours each week, were asked to recall and report the number of hours they had volunteered for each month of the

previous year. Weeks worked each month were summed to produce the hours worked for that organization. In contrast, those who worked the same hours each week, whose volunteer schedule was fixed, were asked how many hours per week and how many weeks they had volunteered over the previous year. Weeks worked was multiplied by hours per week to produce the hours volunteered for that organization. Respondents who had volunteered for more than three organizations were simply asked to report the total hours for these additional organizations. The hours from these three sources were summed to produce the total hours volunteered over the last year. Given the imprecision of respondent recall, the total hours reported for those with a varying work schedule may include a significantly larger degree of measurement error than will be the case for respondents who worked a fixed weekly schedule. To the extent that those with higher annual hours tend to under-estimate the correct number of hours volunteered, this will reduce the impact of both the prior volunteer effort variables and the social resources variables on hours volunteered.

Volunteers in the NSGVP averaged about 165 annual hours of volunteer work. This is just over three hours per week, which in itself does not seem to be an extraordinary amount. However, it represents 13.8 hours per month which is not much less than two full work days (15 hours). In effect the average volunteer was contributing almost one week-end per month to volunteering. From this perspective, their effort is not inconsequential. It also suggests that constraints imposed by other demands on their time, such as paid employment and family duties, children in particular, may have an important effect on the level of effort a person can or is willing to devote to volunteering.

The Independent Variables: Operationalizing Social Resources.

The social resources theory is comprised of four general components---economic resources and human, social, and cultural capital. Many variables that are thought to represent each of these components have been used throughout the research literature on volunteering. This section describes the variables that will be used in this application of the theory. Some of these are well-established measures that have been used repeatedly, not just in volunteering research, but also in other fields of inquiry. Others are unique to the NSGVP data and require more extended treatment. Most of these measures have one thing in common; they are not direct measures of these components of the model. Each component of the model represents a multi-dimensional characteristic of individuals. In the case of social and cultural capital in particular, the characteristic in question can probably not be measured by a single indicator. In fact, preliminary factor analyses of the social and cultural capital measures produced only moderate factor structures. The nine distinct social capital indicators (treating children in the household as a single variable) produced four factors (eigenvalues over 1.0) that explained only 25% of the variation among the indicators, while the five cultural capital indicators produced two factors that accounted for 29% of the variation. As much as anything else this was probably due to the fact these indicators actually do measure a number of relatively distinct aspects of social and cultural capital. Given this, and the fact that the substantive interest in the research undertaken here is how each measure of these resources actually affects volunteering, no attempt was made to estimate underlying factor constructs. The

exogenous variables in the analysis are the observed indicator variables and the approach entails a traditional path analysis.

Human Capital

Human capital represents the skills and knowledge that individuals possess that qualifies them for participation in organizational settings, and specifically for undertaking the various tasks that are asked of them. The most widely accepted measure of skills and knowledge is formal education (Wilson, 2000: 219). In this study, formal education is operationalized by converting the respondent's highest level of education attained into years of education. This follows the standard practice of assigning an equivalent-years value to the highest level of education completed (Blishen, Carroll, and Moore, 1987; Wilson and Musick, 1998: 803). This indicator measures how many years of education a respondent has acquired but is only a proxy measure for skills and knowledge or the disposition towards participation that are thought to be products of that education (Wilson and Musick, 1998: 812). As some have noted, the connection between skills and knowledge and level of education is largely an assumption, albeit a reasonable one (Brady, Vera and Schlozman, 1995: 276). The measure is possibly a better indicator of the signalling function of education because completed level of education is more readily apparent than are skills or dispositions.

The second indicator of human capital is age measured in years. Age is taken to represent the life-skills people accumulate through time. In their study of political participation, Brady and colleagues show convincingly that the civic skills required for political participation are not just learned in childhood but are acquired through adult life

through participation in situations that develop those skills (1995). Age does not measure “participation skills” directly but is expected to be strongly associated with these abilities. This assumption is based on the same logic that underlies the use of years in the labour force as a proxy for skills learned on the job (Day and Devlin, 1996: 43). Age has also been used in the literature as indication of a person’s integration into their community and the stake they have in that community because of this (Sundeen, 1988: 554). Age will tend to be correlated with integration, but a more direct measure of this is available in NSGVP in the form of a question about length of residence in the community. When age and the residence variable are present in the model, age will measure the experiential component of years lived rather than integration. The well documented curvi-linear relationship between age and volunteering is accommodated by inclusion of the quadratic age variable, Age^2 (Selbee and Reed, 2001: 6; Sundeen, 1988: 554; Menchik and Weisbrod, 1987: 172).

The final indication of human capital is health status. This is measured using a four-point scale for the respondents’ self-evaluation of their health. The response categories for this question range from 1 for poor health to 5 for excellent health. Human capital theory identifies health as a component of human capital because individuals’ ability to perform work depends not just on their intellectual capabilities, but also their physical (and mental) condition (Becker, 1975). The respondent’s self-evaluated health should reflect a general physical capability, even though it does not directly measure a recognized or diagnosed health limitation. Education, age and health should all have a positive effect on volunteering while the quadratic age variable should have a negative effect.

Table 3.3 Human Capital Indicators

Indicator		Non-Volunteers	Volunteers	Total
Education in years (6 to 18 years)	Mean	12.7	13.6 *	12.8
	Stand. Dev.	2.5	2.0	2.3
	N	10294	3635	14724
Age in years (18 to 98)	Mean	45.5	44.0 *	43.5
	Stand. Dev.	17.6	15.3	17.8
	N	10294	3635	14724
Health Status (scale 1 to 5)	Mean	3.4	3.7 *	3.6
	Stand. Dev.	1.1	1.1	1.1
	N	9624	3519	13859

Note: Sample restricted to individuals aged 18 and over. An asterisk indicates that the difference between means is significant at the 0.05 level

The characteristics of these measures for volunteers and non-volunteers in the NSGVP sample are presented in Table 3.3. Volunteers have about one more year of education, but are not appreciably different from non-volunteers in age or health. This suggests that age and health may not differentiate the two groups. However, as with all the exogenous variables in the analyses, the characteristics of volunteers and non-volunteers at the bivariate level are not necessarily indicative of the effects these variables might have when part of a multivariate analysis.

Economic Resources

The economic resources in the social resources theory represent the respondent's ability to bear the direct economic costs associated with volunteering. These can take one of two forms. There may be real money costs incurred in performing the activity itself,

such as transportation, baby-sitters, or personal expenditures on supplies and services (Sundeen and Raskoff, 1994: 384). Income is one measure of the ability to bear direct costs. In this study, the measure used is household, rather than personal income. As Wilson notes, it is often more appropriate to use measures that relate to the household rather than the individual because much volunteering is closely tied to and organized by family relations (2000: 225). Household income measures the total money resources available to the respondent through the household. To correct for the high degree of right skew in the NSGVP data, this variable enters the models as its natural logarithm.

The second form economic costs take is the opportunity cost associated with doing unpaid rather than paid work. In economic models, opportunity costs are a constraint, a negative resource. The tendency to do unpaid work should vary inversely with the amount of earnings foregone by not doing paid work (Menchik and Weisbrod, 1987: 161). In this study, opportunity cost is operationalized in two related ways. First, following standard practice in economic models, individuals' opportunity costs are measured by their hourly wage rate, measured in dollars and cents. This question is asked directly of the respondents in the NSGVP; it is not estimated from income and hours worked information as is often the case when individual opportunity costs are examined in economic studies (Menchik and Weisbrod, 1987: 168). In addition, a second type of opportunity cost is used that treats the household as the basis of the decision-making process and measures the impact on the household of a member doing unpaid work. This concept treats opportunity costs in relative terms. Where personal opportunity cost, as measured by the individual's wage-rate, represents the impact of foregone earnings for the individual, opportunity cost to the household is not measured by the individuals'

wage rate directly (unless they are the sole-earner). Instead, it measures the impact of foregone earnings on the household's total income. This can be assessed by expressing the respondent's personal income as a percentage of the household's total income. As this percentage rises, regardless of the wage-rate involved, the effect on the household of each hour of foregone earnings increases. When the percentage reaches 100, the individual is a sole earner and the household's opportunity cost is the same as the individual's opportunity cost. A slightly modified version of this measure has in fact been used in econometric studies. Menchik and Weisbrod calculate each respondent's wage rate by dividing household income by hours worked (1987: 168). However, they effectively convert this into personal opportunity cost by excluding all but sole earners from their analysis.

If the decision to volunteer is purely an individual decision, economic theory says that personal opportunity costs should influence the decision. If, as Wilson (2000) argues, it is a household decision, then household opportunity costs should be more important. In either case, both measures of opportunity cost should be negatively related to volunteering.

The final indicator of the economic resources available to respondents is hours per week spent in paid employment. This measures one aspect of an important resource individuals bring to the decision to volunteer, their discretionary time (Wilson and Musick, 1999: 247; Vaillancourt, 1994: 817). As with opportunity cost, hours worked for pay is a negative indicator of economic resources---the more hours an individual works for pay, the less will be the discretionary time they can devote to other activities. This factor should have a negative effect of the likelihood of being a volunteer. However,

there is some evidence that the relationship between hours worked and volunteering is positive---that volunteering increases as hours worked increase (Wilson, 2000: 221). Recent research in Canada does not support this finding. Estimates from a number of models predicting volunteering across Canada's five regions consistently show that fulltime workers are less likely to volunteer than either part-time workers or those who are not in the labour force (Reed and Selbee, 2000a: 578-583).

Two additional components of economic resources are implicit in social resources theory; occupational status and class status. Having this information for all respondents in the survey would allow for very specific tests of a major component of the social resources theory---the impact of social status as dominant status. Determining occupational or class status requires information about each respondent's employment situation, or for those who are not employed, information about the householder who is employed. In NSGVP employment information is available only for those who were employed at some time in the past year. Rather than eliminate the 30% of the sample that was not in the labour force, the empirical applications of the social resources model do not include these measures.

The indicators of economic resources are presented in Table 3.4. Volunteers have substantially higher household income than non-volunteers, which supports the expectation that those with more resources can better afford to volunteer. The measure of individual opportunity cost, hourly wage, does not conform to the expectations of economic theory. Volunteers have a higher individual opportunity cost than non-volunteers. The household measure of opportunity cost, however, does conform to economic theory. Volunteers have a slightly lower household opportunity cost than do

non-volunteers. Paid hours per week also contradicts the standard economic argument since volunteers tend to work more hours than non-volunteers. The difference, however, is quite small and this factor may not have a large impact on volunteering.

Table 3.4 Economic Resource Indicators

Indicator		Non-Volunteers	Volunteers	Total
Household Income in \$ (6,000 to 500,000)	Mean	50,651.66	64,624.64 *	54,297.97
	Stand. Dev.	36,901.01	49,414.58	41,000.58
	N	10294	3635	13929
Hourly Wage in \$ (0 to 97.50)	Mean	8.86	10.82 *	9.37
	Stand. Dev.	10.28	12.04	10.80
	N	10294	3635	13929
Personal Income as % of Household Income (0 to 100%)	Mean	61.23	56.89 *	60.10
	Stand. Dev.	34.56	34.32	34.55
	N	10294	3635	13929
Paid Hours Worked per Week (0 to 168)	Mean	23.31	24.89 *	23.72
	Stand. Dev.	20.35	19.66	20.18
	N	10294	3635	13929

Note: Sample restricted to Individuals aged 18 and over. An asterisk indicates that the difference between means is significant at the 0.05 level

Social Capital

The social resources theory posits a fairly wide range of resources that may be linked to social capital. To a large extent this is because there are many social contexts in which social capital can be accessed, and thus many ways to measure the amount of social capital that is potentially available. Measures of social capital would ideally tap these resources directly, but in the present context that is not possible. Instead, a number of surrogate measures are used that are thought to correlate highly with social capital, or with the resources it represents, and have been used extensively in the literature.

Network Characteristics: Size, Density and Diversity

The main context in which social capital is generated is social networks, and three important characteristics of networks are size, density and diversity. The size of individuals' networks is typically defined as the number of individuals with whom they maintain some form of regular, even if intermittent contact. There are no direct measures of the size of an individual's social networks in the NSGVP data, but there are variables that measure the density and diversity of social networks. Inevitably, some of these measures will capture aspects of network size indirectly, but they are intended to represent more appropriately the density and diversity of social ties in networks.

Network Density

As noted in Chapter Two, there two ways to describe the density of ties in a social network; as an attribute of the network as a whole, or as an attribute of an individual's relationships within a network. Defined as a characteristic of the network, density describes the number of ties that actually exist among members of the network compared to the potential number that could exist if each member maintained ties with all other members. In this case, density is measured as $t/(n(n-1)/2)$, where t is the number of existing ties, and n is the number of individuals in the network (McPherson, Smith-Lovin and Cook, 2001: 432; Wellman, 1979: 1215). When density is defined in terms of the individual, it refers to the form (Burt, 1980: 83) or strength (Granovetter, 1973) of the ties the individual maintains with others in the social network.

To represent the density or strength of the ties in an individual's social network two measures are available; the frequency with which individuals socialize with family and friends, and the number of types of direct helping undertaken by the respondent.

The frequency with which members of a social network interact is one measure of the density of the social ties in the network and is an important determinant of a network's potential as a source of social capital (Marwell, Oliver and Pahl, 1988). Frequency of contact is typically taken to distinguish between strong and weak ties (Granovetter, 1973). The prevalence of strong ties within a network is an indication of the social capital the network possesses as a well defined social group with enforceable norms of reciprocity, trust, information and labour resources (Auslander and Litwin, 1988). But there are problems with using frequency of contact in this manner. Marsden and Campbell (1984) examined several components of tie strength and found that using frequency of contact as a measure of strength had several limitations. In particular, frequency of contact tended to over-estimate the strength of ties with neighbours and co-workers when a direct measure of strength was available in the form of the intimacy of the relationship. They found that people tend to have relatively high frequency of contact with neighbours and co-workers, even when the strength of the ties involved are quite weak in terms of the depth of the relationship (Marsden and Campbell, 1984: 499). This problem is less likely to occur in the use of contact frequency from the NSGVP data because the relevant questions do not explicitly include neighbours and co-workers. The questions refer to socializing with family and friends only. The contact measure may be contaminated to some degree by respondents who include neighbours and co-workers

among their “friends” in the sense of acquaintances rather than close friends, but this is not expected to occur to any large degree.

The frequency of socializing with others is measured by four questions in the NSGVP data. These asked the respondents how frequently they socialized with parents and other relatives, how frequently they socialized with friends who live outside their neighbourhood, how frequently they spent time with friends participating in sports or recreation activities, and how frequently they spent time watching family members participate in sports or recreation activities. The response categories were 1) not at all, 2) a few times a year, 3) a few times each month, and 4) every week. These were converted to the number of times per year in the following manner. Those who answered not at all were assigned zero times each year. Those who said they socialized a few times each year were assigned a 12, or once each month. Those who answered a few times each month were assigned a 24, or twice a month, and those who answered that they socialized every week were assigned 52, or weekly. This procedure is necessitated by the fact that the meaning of the middle response categories is fairly imprecise. In the NSGVP interview, respondents were offered the response categories in reverse order from the way they are listed above: they started with “every week” and progressed to “not at all”. This would tend to have respondents thinking in terms of how often each week they participate in these activities. On this basis, the response of a few times a month is assumed to mean less than four times a month (less than weekly) but more than once a month. These people were assigned 24 times per year or twice each month. The next response category was a few times a year. That was assumed to be less than twice a month but more than never. Since respondents could not respond with something like “about once each

month”, this group will include those who participate one or two times each year (more than not at all) up to those who participate once each month (less than a few times each month). Clearly this covers a wide range of interaction levels. The yearly participation rate assigned to these people gives them the upper limit of the range at once each month. This probably inflates the rate at which they socialized to some degree but the difference between 12 times and 6 times each year is small given the score for the weekly group (52). The scores on each of the four questions, once converted to times per year, were summed to give total times per year involved in socializing.

Along with the density of social ties, as measured by how often a person socializes with members of their networks, is the question of the stability of those networks over time. This is one aspect of networks that is less often discussed in the literature, but social networks require time and effort to create and maintain. And as Coleman points out, many of the social relations that constitute the basis of social capital tend to be broken when families move (1988:S113). Thus the longer an individual has lived in the same geographical location, the larger and more stable their networks will tend to be (Abowitz, 1990: 550; Haines, Hurlbert and Beggs, 1996: 255). Length of residence in current community is another indirect measure of the respondent’s social capital in the form of strong ties. This variable is measured in grouped years in the NSGVP data. Mid-points were assigned to the groups as follows: 1) less than 1 year = 0.5, 1 to 2 years = 1.5, 3 to 5 years = 4.0, 6 to 10 years = 8.0, and 10 or more years = 13.0. The upper end of the distribution is truncated, which will tend to attenuate the effect of years of residence on volunteer participation.

The density of the social ties in individuals' social networks is also defined by the extent to which they perform reciprocal services for other members of their networks (Granovetter, 1973: 1361). In practical terms this means the amount of help they provide to their family, friends, acquaintances and neighbours. Individuals who perform a large amount of services for their intimates are creating and maintaining strong ties while those who undertake few of these services will tend to have fewer strong and intimate ties. Ideally, we would want to measure this characteristic of strong ties by identifying to whom and how often respondents provided help over the previous year. Since the NSGVP did not collect specific information about respondents' social networks, there is no direct information about help specifically provided to network members. Nonetheless, there is information on the number of types of informal or direct helping they undertook on their own (not in the context of a formal organization or group). This information does not indicate who was the recipient of that help, so it is uncertain how much of this helping was provided to intimates through strong ties and how much was provided to people who were not strongly tied to the respondent (acquaintances, neighbours and more distant others). However, evidence from research on direct helping strongly suggest that most of this helping would have involved network intimates rather than acquaintances, strangers or others not linked to the respondent by strong network ties. One study of a suburb of Toronto (East York) in the late seventies, for example, found that help received from others in the form of emotional support, large and small services, financial aid and companionship was overwhelmingly provided by the respondents' family and friends. For all five types of support, family, friends and neighbours with whom they had strong ties were the source of between 71 and 85 percent of all help received (calculated from

Table 2 in Wellman and Wortley, 1990: 567). If the majority of help received in social networks occurs in the context of strong ties, this implies that the majority of help given by individuals will also be in the context of strong ties. Other research directly supports this contention. Amato, for example, found in two different samples that 63 and 52 percent of direct help was provided to friends, family or roommates (1990: 33). And in another study, he found that the correlation between giving and receiving help among family members was 0.49, and among friends was 0.59 (1993: 258). If much of getting help comes from family and friends, then much of giving help goes to family and friends.

Both authors conclude that direct helping is mostly an expression of the structure of reciprocal relationships people maintain as a component of strong ties within their network of social intimates (Amato, 1990: 32; 1993: 258; Wellman and Wortley, 1990: 583). If most direct helping is mainly a function of the strong ties a person maintains with family and friends, then even without direct knowledge of who were recipients of help, it is possible to use direct helping as a measure of the extent to which individuals maintain strong ties in their networks. The data in the NSGVP give some insight into the validity of this assumption. After identifying how many of 11 types of direct helping they had done in the past year, respondents were asked if any had been for relatives outside the household, and if any had been for non-relatives. In the sample, one-fifth report direct helping only for relatives (21.4%). A further 42% report helping both relatives and non-relatives, and 37% report helping non-relatives only. Ties with relatives may not satisfy all of the requirements of Granovetter's definition of strong ties, in the sense that they may not always involve frequent interaction, emotional intensity and intimacy, but they are unique in that they do involve a presumption of closeness and reciprocal services

based on kinship obligations that is not present in other relationships (Wellman and Wortley, 1990: 572). In terms of direct help, helping relatives is evidence of strong ties because kin ties function in this manner. Helping non-relatives will involve some people who are linked to the respondent by strong ties as friends, and others who are linked by less intimate ties such as co-workers, neighbours and acquaintances (who are not also friends). Unlike kin ties, friendship ties are voluntary and require specific maintenance in order to survive over time (Amato, 1990: 31). As a result, it is reasonable to assume that a substantial amount of help provided to non-relatives will be provided to friends, and represents the maintenance of strong ties with these individuals. Thus, for those who helped both relatives and non-relatives, the preponderance would likely be family and friends. While for those who report helping only non-relatives, the majority of recipients would likely be friends. In this form, direct helping is assumed to indicate the extent of strong ties individuals maintain in their social networks.

The measure of direct helping was created by summing the affirmative responses to a set of 11 questions that identified specific ways of directly helping others. The lead-in to these questions asked the respondents to report instances of unpaid help given on their own to others, not through an organization, and included all friends, relatives and neighbours but excluded other household members and excluded financial help. The final question in the set asked about any type of helping that was not identified in the first 10 questions. The types of helping identified were: 1) housework, such as cooking or cleaning, 2) yard or maintenance work, such as gardening, painting, or snow shovelling, 3) shopping or driving someone to appointments or stores, 4) providing care or support to the elderly, 5) care for someone recovering from an illness, 6) visiting the elderly, 7)

unpaid babysitting, 8) writing letters, solving problems, finding information or filling out forms, 9) unpaid teaching or coaching, 10) help operating a farm or business, and 11) any other type of help.

This variable does not count the actual number of helping events over the past 12 months. Instead it measures the range, or what Amato (1993: 253) refers to as the breadth of help given. This will under-estimate the actual number of helping events but it is reasonable to assume that a person who undertakes a wide range of direct helping activities is, on average, involved in a broader range of strong social ties than someone who does few types. However, the measure underestimates the range of strong ties being maintained by individuals who undertake multiple instances of one type. This will attenuate any effect this variable has on volunteering.

Network Diversity

The second characteristic of networks that determines the kind and amount of social capital that will be available to individuals is the diversity of their networks. Diversity refers to the number of different networks individuals are involved in, and indicates the potential range of social ties they might maintain (Burt, 1980: 90).

An important indication of network diversity relates to family structure. There is one aspect of adult life that prompts individuals to become involved in an entirely new set of networks; the presence of children in the household, and school-age children in particular. For Wilson and Musick, children are a proxy for social capital because “...parents of children still living in the household will have more social contacts and higher rates of social interaction than childless people because their children draw them

into community activities.” (1997: 699). Children increase the size of their parent’s social networks, they increase their parents’ level of interaction in those networks, and increase the diversity of their parents’ networks as the parents are drawn into networks that are explicitly centered on children. Those without children, or only with very young children, will typically not be involved in these types of networks.

The effect of children on parent’s networks has been seen repeatedly in the research on participation and social networks (Warburton and Crosier, 2001: 306; Rotolo, 2000: 1154), but the effect depends on the age of the children. Children under the age of 5 tend to reduce the participation of parents in networks in general. The demands of very young children, in terms of care and attention, tend to keep parents at home. It also true that children at this age are not involved in many activities outside the household that would involve their parents. Once children enter school, including pre-school perhaps, they increasingly become involved in activities that require the participation of their parents. Thus children of school age draw their parents into new areas of participation. An important aspect of this pattern is that the effect of children should change as the children grow older. The patterns of involvement by parents will follow a life-course profile. Their participation will rise when the children first enter school and then decline when the children begin to leave home at around age eighteen.

To measure the effects of children on parent’s participation, five variables were created that count the number of children at various ages living in the household. These are children ages 0 to 5, children ages 6 to 12, children ages 13 to 15, children ages 16 to 17, and children age eighteen and older. These five refer only to the respondent’s own children; any step-children in the household are not counted in these variables. In order to

capture the effects of step-children, a household size variable is also used in the analysis. This counts all the people in the household regardless of their relationship to the respondent.

According to Coleman, another important source of social capital is what he calls appropriable formal organizations. Memberships in formal organizations results in social ties that tend to cut across specific network boundaries and are indicative of both the size and diversity of an individual's entire social network (Sokolowski, 1996:267). As McAdam and Paulsen point out, "Membership in organizations is an extension of the interpersonal social tie." (1993: 645). It follows that the more organizations an individual is involved in the larger will be their entire social network. And since the membership of different organizations will rarely be exactly the same, a respondent involved in multiple organizations will have a broader range of weak ties, along with the network resources these imply (Granovetter, 1973: 1370-1371).

The variable used to measure the number of organizations an individual participates in was constructed from a set of questions about seven types of organizations the respondent either participated in or was a member of, excluding those he or she had volunteered for. The interview did not determine the number of each type of organization the respondent was involved in. Instead it asked respondents if they had been involve in each of the seven types. These were 1) service clubs or fraternal associations, 2) union or professional organizations, 3) political organizations, 4) cultural, education or hobby organizations, 5) sports or recreation organizations, 6) religious-affiliated organizations, and 7) school, neighbourhood, civic or community organizations. The affirmative answers to these questions were summed and are treated as the number of types of formal

organizations the respondent participated in. This measure will underestimate the true number of organizations a person was involved in because it does not count organizations but rather types of organizations. An individual who participates in more than one organization of a given type will still be recorded as participating in only one. The mean of the organization type variable for the 2000 NSGVP data is 0.82 organizations. Data from the World Values Study for Canada in 1981-83 using ten organization type categories produced a mean of 0.58 organization types (Curtis, Grabb and Baer, 1992:143) and another study, based on the World Values Survey for 1991-93, using 16 organization type categories produced a mean of 1.70 organization types per person (Curtis, Baer and Grabb, 2001: 792). The mean for the NSGVP data in 2000 using seven organization types is slightly higher than the 1983 data using ten types, but is considerably lower than the 1993 data using 16 types. From the 1993 data it appears that the measure based on the NSGVP data underestimates the actual count of organization types. However, both the 1983 and 1993 studies also use organization types rather than an actual count of organizations, so they also under-estimate the actual level of participation in formal organizations. There is no way to correct for extent of the under-estimation, but it is assumed to affect all respondents equally.

If participation in formal organizations is one way to access social capital, there is a particular formal organization that has been well established in the research literature as a unique source of social capital: religious organizations. Wilson and Musick treat attendance at religious services, along with prayer, as indicators of a latent cultural capital factor they call religiosity (1997: 703). However, there is evidence that religious attendance and religiosity, in the form of a commitment to religious values, should be

treated as different types of resources. Becker and Dhingra find “...support for the idea that much of the “service attendance effect” on volunteering operates through friendship networks. The salience of religion does not predict volunteering.” (2001:326). In the same vein, Cnaan, Kasternakis and Wineburg (1993:43) find no correlation between intrinsic religious motivation and volunteering. So rather than an indication of religious motivation, religious attendance is better seen as an indicator of a particular form or manifestation of an individual’s social networks (Jackson, et. al., 1995: 67-68). As noted below, religiosity is more appropriately considered an indication of cultural capital.

Norms and Value Introjection

One component of social capital that is not related directly to network characteristics is value introjection (Portes and Sensenbrenner, 1993: 1323-24) or socialization into the consensual beliefs of a group. One indication of the individual’s exposure to this kind of socialization is their experience as youths with formal organizations (Smith, 1972: 326). Learning the norms and obligations associated with cooperative behaviour is a prime characteristic of participation these groups, and is often reinforced by family socialization (Janoski and Wilson, 1995: 272). The NSGVP data contain four questions about participation in youth groups and organizations of various sorts. The responses to these four were summed to create an index of youth experience in these social contexts. The four types of organizations were 1) organized team sports, 2) youth groups in general, 3) student government, and 4) religious organizations.

Another indication of this type of socialization is an individual’s level of participation in various forms of civic activity, including political activities (Smith,

1966:251). In one explanation of how social practice leads to volunteer participation,

Table 3.5 Social Capital Indicators

Indicators		Non-Volunteers	Volunteers	Total
Number of types of Organizations (0 to 7)	Mean	0.60	1.42 *	0.82
	Stand. Dev.	0.87	1.24	1.05
	N	9724	3533	13257
Frequency of socialization (0 to 12)	Mean	92.71	112.78 *	98.04
	Stand. Dev.	49.19	48.82	49.88
	N	9777	3537	13315
Number of types of direct helping (0 to 10)	Mean	3.05	5.43 *	3.67
	Stand. Dev.	3.14	3.09	3.30
	N	10154	3581	13735
Voting in elections (scale 1 to 3)	Mean	1.89	2.22 *	1.97
	Stand. Dev.	1.28	1.15	1.26
	N	10185	3621	13806
Religious Attendance weeks/year (0 to 52)	Mean	9.99	17.00 *	11.86
	Stand. Dev.	18.08	22.34	19.56
	N	9563	3495	13058
Youth Experience in organizations (scale 0 to 4)	Mean	1.46	2.05 *	1.62
	Stand. Dev.	1.13	1.14	1.17
	N	9614	3521	13135
Years of Residence in community (0.5 to 13)	Mean	9.43	9.98 *	9.58
	Stand. Dev.	4.70	4.42	4.63
	N	9582	3515	13096
Children 0 to 5 (0 to 2)	Mean	0.17	0.18	0.17
	Stand. Dev.	0.47	0.48	0.47
	N	10294	3635	13929
Children 6 to 12 (0 to 2)	Mean	0.19	0.33 *	0.23
	Stand. Dev.	0.51	0.65	0.55
	N	10294	3635	13929
Children 13 to 15 (0 to 2)	Mean	0.09	0.15 *	0.11
	Stand. Dev.	0.32	0.41	0.35
	N	9932	3558	13490
Children 16 to 17 (0 to 2)	Mean	0.06	0.08 *	0.06
	Stand. Dev.	0.24	0.28	0.25
	N	9931	3557	13489
Children 18 and older (0 to 2)	Mean	0.18	0.18	0.18
	Stand. Dev.	0.48	0.48	0.48
	N	10294	3635	13929
Household Size (1 to 13)	Mean	2.88	3.13 *	2.95
	Stand. Dev.	1.42	1.46	1.44
	N	10294	3635	13929

Note: Sample restricted to Individuals aged 18 and over. An asterisk indicates that the difference between means is significant at the 0.05 level

Janoski, Musick and Wilson argue that social practice represents habitual behaviours acquired through practical experience. Through these practices, people become "...used to and comfortable with social routines and situations." (1998:497). One social practice they identify in this regard is political participation, and one indicator of political participation is voting behaviour (Janoski, Musick and Wilson, 1998: 504). Voting behaviour is a low-level indicator of political activity in the sense that it requires little real effort, but since the NSGVP data includes voting in municipal, as well as provincial and federal elections, it does capture some degree of commitment to civic participation, since municipal voting is notoriously low in Canada. The measure of voting behaviour is created by combining three questions about voting in the last federal, provincial and municipal or local elections.

Most of the social capital indicators are expected to positively affect volunteering. The exceptions are children 5 and under, and children 18 and over, where the effects should be negative. For the most part, the mean levels of the social capital variables in Table 3.5 support these expectations. Volunteers tend to have higher levels of social capital than do non-volunteers. The clear exceptions are the two child variables that should have a negative effect on volunteering. The means show virtually no difference between volunteers and non-volunteers on these measures. Thus children in these age groups may not be important hindrances to volunteering.

Cultural Capital

Cultural capital exists in the form of values and attitudes that have been described as the culture of benevolence (Wilson and Musick, 1998:696-697). This worldview

creates a disposition that is an important resource for volunteering. It allows the individual to profit psychically and socially from being a volunteer. One organization where the culture of benevolence is institutionalized is in formal religious institutions and their associated beliefs systems (Wilson and Musick, 1998:697). Commitment to a set of religious values, religiosity, can be the basis for integration into a congregation of fellow believers and this reflects the individual's integration into the culture of benevolence. The measure of religiosity used here is taken from a single question that asked respondents how religious they consider themselves to be. The four response categories range from "not at all religious" to "very religious". This question was converted to a scale from 1, not religious to 4, very religious.

Other forms of knowledge about, and preference for, cultural practices that promote participation are also an important part of cultural capital. These can be the product of the individual's exposure to volunteering as a youth. Having a parent or other significant adult who was a volunteer would increase both knowledge about volunteering, and would possibly produce a favourable view of these types of activities. To measure the respondent's exposure to volunteering as a cultural practice, five questions relating to the respondent's experience with volunteering as a youth were combined. The five questions asked if, as a youth, the respondent 1) had done some kind of volunteer work, 2) had personally seen someone they admired helping others, 3) had gone canvassing to raise money for a cause or organizations, 4) had been helped by others, or 5) had one or both parents who were volunteers. Affirmative answers to these questions were summed to produce an index of exposure to volunteering. These do not exhaust the ways people

can be exposed to volunteering as youths, but they do represent a fairly wide range of those possible influences.

In more general terms, attitudes that reflect the respondent's broad world view can also be indicators of cultural capital. One such attitude that has been clearly linked to volunteering is the individual's sense of efficacy (McAdam and Paulsen, 1993: 644-645; Smith, 1966: 254). Other measures, related to efficacy, have also been proposed as measures of an individual's disposition, such as scales of internal-external locus of control. These are all intended to assess the respondent's "perceived ability to make things happen" (Caputo, 1997: 161). In this regard three measures were taken from the NSGVP survey. The first two are taken to reflect aspects of the respondent's sense of being able to achieve goals; satisfaction with life and control over their lives. Each had a four-category response set. For satisfaction with life in general, the responses ran from very dissatisfied to very satisfied. These were converted into a four-point index ranging from very dissatisfied at the low end to very satisfied at the high end. For control over decisions in everyday life, the responses ran from no control to control over all decisions. Very few respondents felt they had no control at all (1.8% of the sample), so this category was combined with the adjacent category. The result is a three-point scale running from control over none or only a few decisions to control over all decisions. A final indicator of the respondent's world-view is the extent to which they follow news and current affairs. Those who follow the news more regularly will tend to have a broader knowledge of and interest in conditions in the world. The response categories were converted to a four-point scale ranging from 1, rarely or never, to 4, daily.

Table 3.6 Cultural Capital Indicators

Indicator		Non-Volunteers	Volunteers	Total
Religiosity (scale 1 to 4)	Mean	2.44	2.66 *	2.50
	Stand. Dev.	0.92	0.91	0.92
	N	9479	3459	12938
Youth exposure (scale 0 to 5)	Mean	2.06	2.99 *	2.31
	Stand. Dev.	1.60	1.55	1.64
	N	9619	3519	13137
Satisfaction with life (scale 1 to 3)	Mean	2.32	2.51 *	2.37
	Stand. Dev.	0.63	0.59	0.62
	N	9582	3514	13096
Control over decisions (scale 2 to 4)	Mean	3.14	3.18 *	3.15
	Stand. Dev.	0.67	0.60	0.65
	N	9552	3510	13061
News following (scale 0 to 3)	Mean	2.50	2.60 *	2.53
	Stand. Dev.	0.88	0.77	0.85
	N	9726	3535	13261

Note: Sample restricted to Individuals aged 18 and over. An asterisk indicates that the difference between means is significant at the 0.05 level

Comparison of the cultural capital of volunteers and non-volunteers in Table 3.6 does not show substantial differences, with the possible exception of Youth Exposure. This indicates that these variables may not have a significant effect on volunteering. Nonetheless, they are components of the social resources theory and as such will be included in the empirical analyses. As stated earlier, these bivariate patterns will not necessarily reflect the impact of these factors in the multivariate situation.

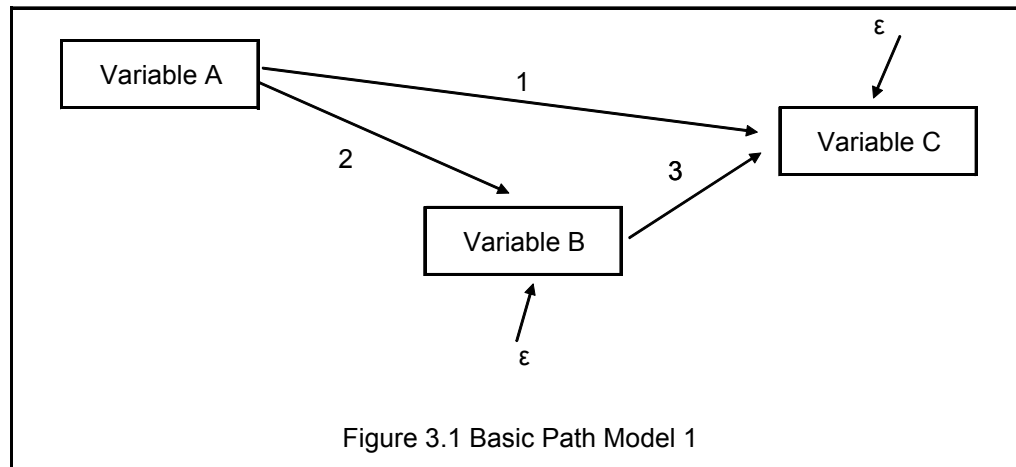
Empirical Structural Models

Chapter Two presented a schematic of the theoretical structure of the social resources model of volunteering. Ideally, application of this structural model to an analysis of volunteering would operationalize variables representing each component of

the model and estimate the strength of the causal path coefficients that interconnect these variables. In the present situation this is not entirely possible. Both the statistical techniques available and the NSGVP data do not allow for such a straightforward application of the theoretical model. Instead, the models that are actually generated and tested are limited in several ways. This does not invalidate the evaluation of the social resources theory, but it does limit the information the models provide through their application to the NSGVP data. This section describes the models as they will be applied, how they are tested, and what can be learned about volunteering and the social resources model from this process.

Modeling the Likelihood of Being a Volunteer with Logistic Regression

Structural models are a class of statistical models that allow for the simultaneous estimation of a set of hypothesized causal relationships between one or more independent variables, either as observed or unobserved latent constructs, and one or more endogenous or dependent variables, either observed or unobserved. The value of using structural models is the ability to model the causal relationships between the independent or exogenous variables (those not explained by the model) and the dependent or endogenous variables (those explained by the model) while at the same time modelling the causal relationships among the endogenous variables themselves. On this basis it is possible to estimate both the direct and indirect effects of the exogenous variables on each of the endogenous variables.



The simple model in Figure 3.1 will help explain what can and cannot be done with current statistical techniques and with the NSGVP data. For illustrative purposes variable A could be a measure of human capital, variable B, a measure of social capital, and variable C, a measure of volunteer effort. Variable A is the single independent or exogenous variable, and is hypothesized to have a causal effect on variables B and C. Variables B and C are the endogenous dependent variables, and B is hypothesized to have a causal effect on variable C. The ε 's in the diagram are the random error or disturbance terms associated with each endogenous variable. These reflect the fact that variable A is not expected to account for all the variation in variable B, and variables A and B together will not explain all the variation in variable C. In substantive terms, the random error can represent purely random variation, measurement error, and causes that are omitted from the model. These are assumed to be uncorrelated with any prior variable in the model.

In this model there are three direct effects; paths 1, 2 and 3. These are the direct effect of A on B (path 2), the direct effect of A on C (path 1), and the direct effect of B on

C (path 3). Variable A also has an indirect effect on variable C through its effect on variable B (Bohrnstedt and Knoke, 1994: 410-412). In standard path analysis using linear regression, and with all variables standardized, the total effect of A on C can be estimated from two regressions. The regression of C on A and B produces coefficients for paths 1 and 3, and the regression of B on A produces the coefficient for path 2. The total effect of A on C is then:

$$\text{Path 1} + (\text{Path 2} * \text{Path 3}) = \text{Total Effect of A on C}$$

or, $\text{Direct effect} + \text{Indirect effect} = \text{Total effect}$

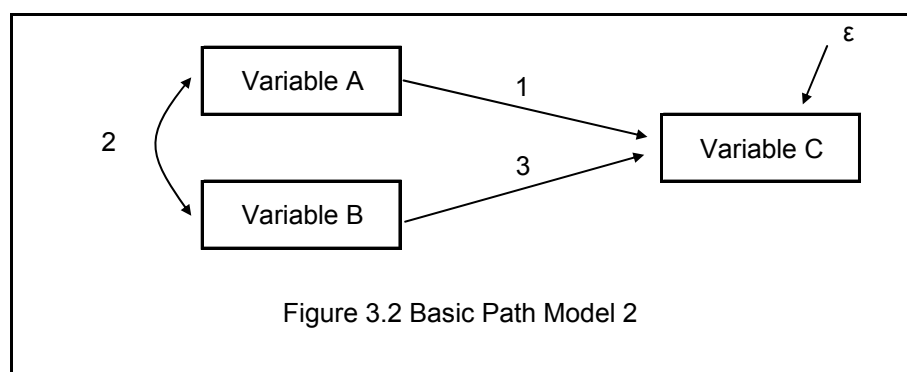
Estimation of the equations required for this decomposition of effects is straightforward when the variables are measured as continuous variables and the functional form of the model is the standard additive linear model that underlies ordinary least squares regression (Alwin and Hauser (1975).

In the analysis of the likelihood of volunteering, however, the appropriate functional form of the model that relates variable C to variables A and B is not the additive linear model. Instead, the appropriate functional form is the logistic model where variable C is a binary variable coded 1 for volunteers and 0 for non-volunteers. The model underlying logistic regression assumes that the natural logarithm of the odds of being a volunteer is a linear function of the independent variables (Jaccard, 2001: 3-4).

For a single binary endogenous variable, the effects of a set of exogenous variables can be estimated directly using logistic regression. However, a difficulty arises when there is more than one endogenous variable in the model, and where these are a mix of continuous and binary measures. At present there are no accepted statistical techniques for estimating a set of logistic equations in the manner of traditional regression-based

path analysis. Logistic regression is not intended to model continuous endogenous variables and there are no accepted procedures for decomposing total effects into direct and indirect effects in this situation. Attempts have been made to advance the statistical theory in this direction (Winship and Mare, 1983; Stolzenberg, 1980), but as promising as these have been, there has yet to appear a generally accepted method for estimating logistic path models with multiple endogenous variables.

As a consequence, the structural model developed with logistic regression procedures to evaluate the social resources explanation of the likelihood of volunteering has only one endogenous variable --- the odds of being a volunteer. The logistic model does not allow for examination of the causal connections that might exist among the social resources components of the model. In practical terms this means that the causal model in Figure 3.1 is replaced by the model in Figure 3.2



In this model, paths 1 and 3 again represent the direct effects of variables A and B on variable C, but the causal path 2 in Figure 3.1, the direct effect of A on B, is replaced by a simple unanalysed correlation between A and B. Regardless of whether model 1 or model

2 is estimated, the coefficients for paths 1 and 3 remain the same. Under either model the coefficients for the direct effects of A and B on C are correct. What is not estimated under model 2 is the direct effect of A on B, and as a result the indirect effect of A on C cannot be determined using the logistic regression. To the extent that there are important causal links between variables A and B in model 2, the total effect of variable A on variable C will be under-estimated because the indirect effects cannot be determined. In other words, a structural model based on logistic regression contains only the direct effects of the exogenous variables on the endogenous variable.

This does not compromise the tests of model fit nor the significance tests of the path coefficients. It does mean that caution must be exercised when comparing the size of the effects of various independent variables. Because the independent variables may have important indirect effects, their direct effects do not represent the total effect they may have on the endogenous variable. This also means that the absence of a direct effect in the empirical model does not necessarily mean that the independent variable has no effect on the endogenous variable; if it has a significant effect on an intervening endogenous variable, then it will have a significant indirect effect on the endogenous variable. In the social resources model, this limitation applies only to the effects of human capital and economic resources on the likelihood of volunteering. These are the only variables that are hypothesized to have indirect effects on volunteering through their impact on social and cultural capital.

The logistic models as estimated are limited but valid models of the effects of social resources on the likelihood of volunteering. They can be used to determine whether or not various components of the social resources model, and the indicator variables used

to operationalize these components, have a direct impact on volunteering, and in this sense provide a basis for evaluating the applicability of the theoretical model to our understanding of the likelihood of being a volunteer. They are minimally a starting point for more rigorous structural analyses when and if statistical theory evolves to the point where a fully recursive structural logistic model can be estimated. Appendix A provides a detailed discussion of the logistic regression model and its estimation procedures.

Modelling Volunteer effort : Structural Equation Procedures with LISREL

In modelling volunteer effort in Chapter Five, a more limited version of the social resources model is also used. As in the application of the structural model to the likelihood of being a volunteer, no attempt is made to model the causal relationships that might exist among the components of social resources themselves. That is, the structural relations that connect human capital and economic resources, and that connect these two with social and cultural capital are not part of the empirical model. This strategy is adopted for two practical reasons. First, as noted earlier, the indicator variables used to measure social resources do not form cohesive factor structures in the form of a limited number of well-defined latent constructs. Modeling the causal relationships among the social resources variables would, as a result, entail estimating a large number of inter-connections among the indicator variables themselves. While there are theoretical grounds for specifying where some of these causal connections would be, for others there is little or no theoretical direction that would provide a rationale for the existence of particular effects. For example, human capital theory suggests that education should have a positive effect on an individual's personal income, as measured by hourly pay. But the

theory is not clear on how education might affect their household income since this depends on the earning process of others in the household, and presumably on their human capital. Appropriately modelling these interrelationships is itself a complete research project that is beyond the scope and intent of the current research.

Second, the central aim of this research is to explore the proposition that the social resources model is a useful explanation of the amount of effort people put into volunteering. The specific causal structure that exists among the social resources variables is not germane to this question. It is their impact on aspects of volunteering, not the pattern of connections among the components of social resources, that is primarily at issue. To this end it is not necessary to model the inter-connections among the social resource variables. In other words, the empirical question is the direct effects of social resources on volunteering not the causal connections among the social resources, nor their indirect effects on volunteering. However, the models do include a causal structure among the measures of volunteer effort. This is of substantive interest because it is hypothesized that social resources will have different effects on different measures of volunteer effort, and the aim of the research is to identify these connections. A detailed discussion of this structure will be undertaken in Chapter Five when volunteer effort is analysed.

When the analysis turns to the model of volunteer effort the statistical procedures change to take advantage of the fact that the variables in the model are all continuous variables. In this situation standard path analytic methods can be applied, making it possible to estimate the multiple equations of the path model as a single set of structural equations, a single structural model. In this form, all the parameters of the structural

model can be estimated at the same time and methods are available for evaluating the model as a whole. The analysis of the structural model of volunteer effort is accomplished using the LISREL statistical program and a restricted version of the general LISREL model. The general model allows for the estimation of both measurement and structural components of the models as part of the process of model generation. For reasons noted above, there are no measurement model components in the empirical models of volunteer effort because there are no well-defined latent variables for the social resources, and the dependent variable of volunteer effort is not conceptualized as a single unobserved construct. As a result, the intention is not to develop a model of the connections between a set of latent constructs but to specifically examine the empirical connections between the social resources measures and the four measures of volunteer effort. In effect, the analysis of volunteer effort is a standard path analysis of the impact of social resources on volunteering. The technical details of the LISREL model, estimation procedures, and methods for evaluating the fit of the models are presented in the second section of Appendix A. The Appendix also describes the procedures used to cross-validate both the logiastic regression and LISREL models.

Modeling Group Differences

It has been standard practice in analysing both the likelihood of volunteering and the amount of effort people put into volunteering to introduce qualitative variables that represent different groups for whom the process under investigation is thought to differ in important ways. Typically this involves using dummy-coded variables to represent groups such as men and women, Catholics and Protestants, or other qualitative defined

social categories. These sets of dummy variables are entered in multivariate statistical analyses as independent explanatory variables. This procedure is appropriate for identifying differences between groups in the mean level of a dependent variable but it does not determine whether or not the structural model as a whole actually differs across groups. This requires introducing and testing interaction terms in the logistic regression model or fitting models with equality constraints in the structural equations estimated in LISREL. Appendix B describes in detail the procedures for estimating group difference in both situations.

Estimating Structural Models with Cross-Sectional Data

Structural models are intended to represent the causal connections among a set of variables hypothesized to represent a real process in the social world. The social resources theory is presented as an explanation of volunteering and implicit in its formulation is the proposition that differences in social resources are the proximate causes of differences in volunteer participation. In this form, the theory is a strong statement about causality in this social dynamic. The nature of causality in sociology has been the subject of debate for a very long time. Even now there is substantial disagreement over how the idea of causality can or should be used in sociological analysis and in empirical structural modeling in particular (Pedhazur, 1997: 766-768). It is not the intent here to resolve this debate in substance, but the approach taken agrees with Collins' that the goal of social research is the "...formulation of generalized explanatory principles, organized into models of the underlying process that generate the social world."(Collins, 1989: 124). The social resources theory is one such model of the

social world, but in its application here, it is based on a weak version of causation in that the connections between social resources and volunteering are not entirely deterministic. They are probabilistic in the sense that there are other causes of volunteer behaviour that are not accounted for by the theory. The theory explains how variations in social resources increase or decrease the likelihood of the behaviours in question in the population as a whole, not whether or not these connections will actually exist for any given individual.

There is a related problem for the analysis here, since it uses cross-sectional data to identify these causal connections. In empirical data analysis, one common presupposition is that identifying causal connections requires, at a minimum, that causes precede effects (Cox, 1992: 293). In cross-sectional data this temporal ordering often cannot be clearly demonstrated. In many situations in the NSGVP data this requirement is an assumption rather than an established fact. For some variables in the analysis, this assumption can be made with some confidence of its accuracy for the majority of respondents. Formal education, for example, tends to be a characteristic that is attained in the past and does not change over time for most people. The assumption that it precedes volunteering is probably accurate for most people. For other characteristics, the assumption is more tenuous. Many social capital indicators are less clearly prior to some of the characteristics of volunteer effort. Attendance at religious services, for example, may actually increase because people become involved in a group or organization that is affiliated with their congregation. The causal connection in this case is the reverse of that asserted by the social resources model. In more general terms, there is the question of whether volunteering produces, or is produced by, the characteristics of social networks.

Becoming involved in an organization as a volunteer does imply that an individual's social networks will change. Relationships with others in the organization become social ties, either strong or weak. There is no way to resolve these difficulties other than the assumption that social resources tend to be relatively stable over time, and would thus tend to precede most decisions about volunteering. If this is the case, cross-sectional data can identify the causal connections between social resources and volunteering (Tuma and Hannan, 1984: 296-299). The causal relationships among the measures of volunteer effort are also problematic in the cross-sectional data, and again broad assumptions of timing and stability must be made. The assumptions about the temporal logic underlying this structure will be dealt with in detail in the analysis of volunteer effort in Chapter Five.

The limitations of using cross-sectional data to estimate causal structures is acknowledged but at the current time there are no longitudinal data pertinent to this issue in Canada, so this analysis provides a reasonable starting point for an evaluation of the social resources theory, and clearly awaits validation with data that identify the temporal sequences with more certainty.

Chapter Four

Social Resources and the Likelihood of Being a Volunteer

Introduction

When researchers focus on volunteering as a particular type of behaviour they usually ask the question “Who volunteers and why?” Answering this question has led analysts in a large number of theoretical directions with an even larger number of substantive approaches to gathering information that might shed light on the issue. In this regard, some have used extensive personal interviews to try and understand the “frameworks of understanding” (Wuthnow, 1995) or the “habits of the heart” (Bellah et. al., 1985) that motivate this behaviour. Others have focused on volunteers or subgroups of volunteers in the search for what makes them different from others (Chappell and Prince, 1997). Some have done intensive studies with small groups of volunteers (McAdam, 1989) while others looked for broad differences between countries (Ascoli and Cnaan, 1997). Still others have taken large national surveys and applied statistical techniques to ferret out the facts about volunteers (Musick, Wilson and Bynum, 2000). Each of these approaches has advantages and disadvantages for revealing the volunteer, but they all seek to answer that same question: is it possible to identify the factors that make one person a volunteer and another not. This chapter adds to this long tradition of research by analysing the likelihood of being a volunteer in Canada. The goal of this research is to use the social resources theory of volunteering to construct an empirical model of volunteering in Canada. It also examines whether or not the social resources theory differs in any important ways across sub-groups of the Canadian population such as gender, religion or region. It does this, first by generating a national model of

volunteering based on components of the social resources theory, and then by examining the ways the national model differs across groups.

The first section of this chapter presents some basic information about volunteering in Canada that bears on the question of who volunteers. It also reviews some of the research that has been done in recent years that specifically addresses the question of what affects the likelihood of being a volunteer in Canada. The second section reviews the basic techniques involved in the process of generating an empirical model, including how the models are validated with a second sample. The third section examines the results of the model generation procedure, the national model of volunteering, in detail, including how its findings relate to prior research and its implications for the social resources theory. The fourth section examines refinements to the national model that identify important group differences in Canada and what these imply for the social resources theory.

Volunteering in Canada: Research on the Likelihood of Volunteering

There has not been a great deal of research on the likelihood of volunteering in Canada. There are several studies that do look at who volunteers, and these give a broad picture of what can be expected from the current effort to model volunteering.

The earliest attempt to examine the likelihood of volunteering used data from the first national survey of volunteering, the 1987 Volunteer Activity Survey. This research drew on economic theory to examine the impact of time allocation and human capital factors on volunteering. The results suggest that some aspects of the theory do explain the choice to volunteer. Human capital factors such as education and age increase

volunteering, while constraints such as working full time or having young children reduce it (Vaillancourt, 1994: 812-822). But other findings clearly contradict parts of the standard economic interpretation. While hours worked in paid employment did reduce volunteering, the reduction was less for those who worked more hours than for those who worked fewer. Income also shows the opposite effect from that predicted by economic models---volunteering rises sharply as income increases (Vaillancourt, 1994: 821). Other factors that affect volunteering included religion, region and gender. Catholics and those with no religious affiliation, volunteer less than Protestants, while Other Religion groups volunteer more. Regional variation shows up in the low likelihood of volunteering in Quebec and the high likelihood in the Prairies, relative to Ontario. Male and female differences were also apparent, which are attributed to gender differences in “tastes” or in the intra-family allocation of discretionary time. The latter conclusion is based on the negative effect of young children for women but not men (Vaillancourt, 1994: 818).

Another study that used the 1987 national survey, although it did not look at the likelihood of volunteering, is of interest because of the finding that older Canadians (65+) volunteer out of a sense of social obligation and prosocial values, where younger volunteers (45-64) do so for self-interested reasons (Chappell and Prince, 1997: 351). This result mirrors findings in the U.S.A., where a major part of volunteer effort comes from older individuals, those born before 1930, whom Goss calls the “long civic generation” (1999: 279).

A third study using the 1987 data involved another application of the econometric model. This research also found that men volunteer less than women, that young children reduce volunteering but older children increase it, that education, good health and income

increase volunteering, and being a Francophone reduces volunteering (Day and Devlin, 1996: 45). In a more recent study using the 1997 national survey (NSGVP 1997), the same authors find the same overall pattern of effects for the decision to volunteer. One additional effect they identify is that length of residence in the community increases volunteering (Day and Devlin, 2000: 37).

The final study to examine the likelihood of volunteering also used the 1997 NSGVP data. This analysis sought to provide a broad picture of the distinguishing characteristics of volunteers. To do so the authors estimate logistic regression models for each of Canada's five regions, broken down by size of community and religiosity, and compared active volunteers (those with annual hours volunteered over the national median of 66 hours) to non-volunteers. Their findings provide a wealth of detail about the correlates of volunteering. These they summarize as falling into broad groups characterized by factors associated with participation in organizations and charitable giving, by family attributes such as children and marital status, by factors related to religion, and by education, occupation and experiences in youth groups (Reed and Selbee, 2000a: 586).

These studies all identify important influences on volunteering that are components of the social resources theory. In particular, the effects of human capital factors stand out, such as education and health, as well as factors associated with prosocial values. There is less consistent evidence that the standard economic model of volunteering is appropriate. This research also indicates that qualitative factors such as religion, region, gender and ethnicity identify important sources of group differentiation in the social resources model.

Generating a Model of Volunteering in Canada.

The structural models of the likelihood of being a volunteer are estimated using logistic regression procedures. There are two standard approaches to generating these types of models, forward inclusion and backward exclusion. Forward inclusion starts with a model with no parameters except the intercept. This model is substantively uninteresting but it does produce a X^2 fit statistic as a baseline for further tests. Variables are progressively added to this model and the improvement in fit to the data is assessed by examination of the change in X^2 (ΔX^2) between the two models. If ΔX^2 is large relative to its degrees of freedom, the null hypothesis that the parameter (variable) is zero is rejected and the variable is added to the model. Typically the variable with the largest impact on X^2 , the largest ΔX^2 , is added to the model first, then the second largest and so on. This procedure continues until either there are no further excluded variables or none of the added effects produce a significant change in X^2 .

The second approach, and the one used here, is backward exclusion. This begins with all the variables of interest included in the first model. Based on the t-test for each parameter (the Wald statistic in logistic regression), all non-significant variables are excluded from the model en masse. This produces a baseline model that contains only variables that have a significant effect on the likelihood of volunteering. The next step adds the excluded variables one at a time to this baseline model, independently assessing the impact of each excluded variable in terms of its contribution to X^2 . At the end of the process, the variable with the largest ΔX^2 is added back into the model, and the procedure is repeated for the remaining excluded variables until none produces a significant change

in the fit of the model. The outcome of this process is the final model for a given analysis. This model is cross-validated by fitting it to the confirmatory sample. As noted in Chapter Three, any effects in the exploratory model that are not significant in the confirmatory sample are simply excluded from the final model. Substantive interpretation of the models is always based upon the parameter estimates from the exploratory sample.

A National Model of Volunteering in Canada

In Chapter Three, the characteristics of the variables in the social resources model were presented for the full NSGVP sample. Some of that same information is presented in Table 4.1 for the exploratory sample. The correlations between the independent variables and the likelihood of volunteering are presented in Table 4.2. This gives some indication of the relationships that may exist between the independent variables and the likelihood of being a volunteering.

The first column of Table 4.2 shows the correlation between the likelihood of being a volunteer and each of the independent variables in the social resources model. With three exceptions, all the independent variables are significantly correlated with volunteering. The curvi-linear relation between age and volunteering is evident --- the correlation between age and volunteering is not significant but the correlation between age² and volunteering is significant. Two other correlations are non-significant, even at a 0.05 probability level: children ages 0 to 5, and children 18 and older. At the bivariate level, these variables do not effectively distinguish between volunteers and non-volunteers but since prior research in Canada has shown that the presence of children in

the home does affect volunteering, these variables are retained in the analysis

(Vaillancourt, 1994: 823; Reed and Selbee, 2000a: 577).

Table 4.1 Descriptive Statistic for Independent Variables in the Social Resources Model:
Exploratory Sample Only

	Mean	Median	Standard Deviation	Minimum	Maximum
Human Capital Resources					
Education (years)	12.84	13	2.85	6.0	18.0
Age	44.23	42	16.79	18.0	95.0
Age ²	2237.77	1764	1645.95	324.0	9025.0
Health Status	3.51	4	1.13	1.0	5.0
Economic Resources					
Log Household Income	10.66	11	0.69	8.7	13.1
% Household Income	59.07	58	34.46	0.0	100.0
Hourly Pay (\$)	9.60	8	10.92	0.0	80.3
Work Hours (per week)	23.94	32	19.97	0.0	120.0
Social Capital Resources					
# Organization Types	0.84	1	1.05	0.0	7.0
Socializing (times per year)	98.90	100	49.40	0.0	208.0
# Helping Types	3.79	4	3.32	0.0	14.0
Youth Experience	1.65	2	1.17	0.0	4.0
# Voting	2.07	3	1.21	0.0	3.0
Religious Attendance (weeks/year)	12.03	2	19.72	0.0	52.0
Years Resident	9.46	13	4.65	0.5	13.0
Children Ages 0-5	0.18	0	0.48	0.0	2.0
Children Ages 6-12	0.24	0	0.56	0.0	2.0
Children Ages 13-15	0.10	0	0.34	0.0	2.0
Children Ages 16-17	0.06	0	0.24	0.0	2.0
Children Ages 18+	0.16	0	0.46	0.0	2.0
Household Size	2.97	3	1.46	1.0	11.0
Cultural Capital Resources					
Religiosity	2.47	3	0.93	1.0	4.0
Youth Exposure	2.35	2	1.64	0.0	5.0
Satisfaction	2.37	2	0.62	1.0	3.0
Control in Life	3.15	3	0.65	2.0	4.0
News Following	3.51	4	0.85	1.0	4.0

Note: Exploratory sample only, N=6258 for all variables. Respondents age 18 and older.

Table 4.2 Correlations between the Likelihood of Volunteering and Social Resource Indicators

	Variable Labels	Exploratory Sample	Confirmatory Sample
Human Capital Resources			
Education (years)	EDYEARS	0.168 **	0.194 **
Age	AGE	-0.017 **	-0.034 **
Age ²	AGE2	-0.033 **	-0.049 **
Health Status	HEALTH	0.128 **	0.097 **
Economic Resources			
Log Household Income	Ln HHINC	0.156 **	0.164 **
% Household Income	% HHINC	-0.050 **	-0.060 **
Hourly Pay (\$)	PAYHRLY	0.070 **	0.086 **
Work Hours (weekly)	WKHRS	0.038 **	0.018
Social Capital Resources			
# Organization Types	# ORGS	0.345 **	0.342 **
Socializing	SOCIALZ	0.176 **	0.169 **
# Helping Types	HELPING	0.300 **	0.317 **
Youth Experience	YTHEXPER	0.208 **	0.240 **
#Voting	VOTING	0.109 **	0.117 **
Religious Attendance (weeks/year)	CHURCHATN	0.159 **	0.157 **
Years Resident	RESIDYRS	0.037 **	0.074 **
Children Ages 0-5	KIDS05	0.010	-0.010
Children Ages 6-12	KIDS612	0.113 **	0.095 **
Children Ages 13-15	KIDS1315	0.071 **	0.087 **
Children Ages 16-17	KIDS1617	0.061 **	0.023 **
Children Ages 18+	KIDS18PL	0.003	-0.009
Household Size	HHSIZE	0.074 **	0.062 **
Cultural Capital Resources			
Religiosity	RELIGIOSITY	0.123 **	0.090 **
Youth Exposure	YTHEXPOS	0.244 **	0.256 **
Satisfaction	SATISF	0.153 **	0.122 **
Control in Life	CONTROL	0.034 **	0.020 **
News Following	NEWS	0.074 **	0.038 **

** p < 0.01

Note: Exploratory sample only, N=6258 for all variables. Respondents age 18 and older.

Table 4.3 Baseline National Model: The Effect of All Social Resources on the Likelihood of Being a Volunteer (Logistic regression)

	b	S.E.	p-value	Exp(B)	% Δ Odds
Human Capital Resources					
Education	0.072	0.014	0.000	1.075	7.5
Age	0.033	0.013	0.013	1.034	3.4
Age ²	0.000	0.000	0.026	1.000	0.0
Health Status	0.130	0.033	0.000	1.139	13.9
Economic Resources					
Log Household Income	0.131	0.063	0.038	1.140	14.0
% Household Income	-0.002	0.001	0.093	0.998	-0.2
Hourly Pay	-0.010	0.004	0.011	0.990	-1.0
Work Hours	-0.004	0.002	0.105	0.996	-0.4
Social Capital Resources					
# Organization Types	0.499	0.033	0.000	1.648	64.8
Socializing	0.001	0.001	0.188	1.001	0.1
# Helping Types	0.146	0.011	0.000	1.157	15.7
Youth Experience	-0.027	0.034	0.431	0.973	-2.7
# Voting	0.091	0.032	0.004	1.095	9.5
Religious Attendance	0.010	0.002	0.000	1.010	1.0
Years Resident	0.015	0.007	0.050	1.015	1.5
Children Ages 0-5	-0.139	0.076	0.066	0.870	-13.0
Children Ages 6-12	0.231	0.068	0.001	1.260	26.0
Children Ages 13-15	0.167	0.101	0.100	1.181	18.1
Children Ages 16-17	0.280	0.139	0.045	1.323	32.3
Children Ages 18+	-0.203	0.087	0.019	0.816	-18.4
Household Size	-0.002	0.036	0.950	0.998	-0.2
Cultural Capital Resources					
Religiosity	0.068	0.043	0.112	1.070	7.0
Youth Exposure	0.157	0.025	0.000	1.170	17.0
Satisfaction	0.235	0.061	0.000	1.265	26.5
Control in Life	0.012	0.055	0.831	1.012	1.2
News Following	0.018	0.044	0.679	1.018	1.8
Constant	-7.222	0.717	0.000	0.001	
N	6,258				
χ^2	1,394.5				
df	26				
p-value	0.000				
Pseudo-R ²	0.291				

Note: Exploratory sample only. Respondents age 18 and older.

The correlations among the independent variables were examined and are generally low to moderate in size, indicating no serious problems with multi-collinearity. Three related variables do show moderate correlations; hourly pay is correlated with both household income ($r = 0.400$) and hours worked ($r = 0.589$). These are not strong enough to indicate a linear dependency, but it does suggest that the effect of hourly pay on volunteering will be diminished by the presence of household income or hours worked in a single model. Household size also has a moderate correlation with the number of children ages 6 to 12 ($r = 0.457$), but, again, this is not large enough to cause problems.

The Baseline Model: All Social Resources

The first model applied to the data includes all the indicators of the social resources theory. The logistic coefficients of this model are presented as the full national model in Table 4.3. This model tests the effects of all the variables selected to represent components of the social resources theory. The result of fitting the full model are mixed. The reduction in deviance, the improvement in fit to the data, is large ($X^2 = 1,394.5$) and significant ($p < 0.000$), and the model accounts for 29.1% of the variation in the data. On the other hand, it is evident from the t-tests for individual coefficients that a number of the variables may have little if any effect on the likelihood of volunteering (p -values > 0.05).

A baseline model is re-estimated by excluding all variables in the full model that were non-significant. Then the excluded variables are added back into the baseline model

one at a time and the size of their contribution to X^2 is assessed (ΔX^2). Table 4.4 shows the results of the three steps in this procedure.

In the first round of tests (Step 1) two variables showed a significant contribution to X^2 when added individually to the baseline model; % of household income and hours worked. The largest change in X^2 is due to hours worked, so this variable was added to the baseline model, producing a new baseline model (Step 2). The remaining excluded

Table 4.4 Contribution of Social Resources Variables to the Fit of the Baseline National Model

	Variable Added	ΔX^2	df.	p-value
Step 1	Baseline National Model	1375.02	16	0.000
	% Household Income	4.16	1	0.041
	Work Hours	4.76	1	0.029
	Socializing	2.20	1	0.136
	Youth Experience	0.37	1	0.542
	Children Ages 0-5	3.70	1	0.054
	Children Ages 13-15	3.40	1	0.065
	Household Size	0.12	1	0.726
	Religiosity	2.30	1	0.122
	Control in Life	0.09	1	0.77
	News Following	0.08	1	0.782
Step 2	Baseline National Model with Work Hours	1379.78	17	0
	% Household Income	2.37	1	0.124
	Socializing	1.98	1	0.159
	Youth Experience	3.37	1	0.562
	Children Ages 0-5	3.98	1	0.046
	Children Ages 13-15	3.56	1	0.059
	Household Size	0.05	1	0.819
	Religiosity	2.13	1	0.144
	Control in Life	0.05	1	0.817
	News Following	0.06	1	0.806
Step 3	Baseline National Model with Work Hours and Children 0-5	1388.76	18	0
	% Household Income	2.58	1	0.108
	Socializing	1.88	1	0.17
	Youth Experience	0.34	1	0.562
	Children Ages 13-15	3.09	1	0.079
	Household Size	0.82	1	0.364
	Religiosity	2.46	1	0.116
	Control in Life	0.04	1	0.851
	News Following	0.08	1	0.76

Note: Exploratory sample only. Respondents age 18 and older.

variables are again added to the new baseline model individually and their contribution to X^2 assessed. The largest effect here is for children ages 0-5 ($\Delta X^2 = 3.98$, $df=1$, $p = 0.046$). This effect is added to the model and the remaining effects were tested again. In step 3 none of the excluded variables made a significant contribution to the fit of the model so testing ended. The model produced by this procedure is the final national model of the likelihood of volunteering in Canada.

Cross-Validating the National Model

To ensure that the model was not fitting idiosyncratic variation in the exploratory sample, the final national model was estimated with the confirmatory sample. This identified three variables that had significant effects in the exploratory sample but not in the confirmatory sample. These, along with the probability they were zero in the population, based on the confirmatory sample results, were health ($p = 0.189$), hourly pay ($p = 0.833$) and children 16 to 17 ($p = 0.825$). These were dropped from the final national model, which is presented in Table 4.5.

The national model fits the data well ($X^2 = 1,354.3$, $df=15$, $p < .000$). Analysis of the residuals from this model indicates that there are no overly influential outliers; 94.4% of the standardized residuals are between -2.0 and +2.0 standard deviations from the mean, while 97.3% lie between -2.5 and +2.5. This compares to the normal distribution that will have 95% and 99% of cases in the two intervals (Menard, 1995:72). The leverage (h) or “hat-values” for this model show 6.8% of cases greater than twice the mean hat-value, and 1.6% greater than three times the mean value. Again, as a rough

approximation there should be about 5% and 1% of cases with hat-values over these values respectively (Fox, 1997: 280). The model appears to be a robust estimate of the population model.

To assist in discussion of the effects of the national model, the standardized coefficients, β , are presented in Table 4.5. The standardized coefficient in a logistic regression represents the change, in standard deviation units of the predicted log odds ratio, produced by a one standard deviation change in the independent variable (Menard, 1995:44-49). These coefficients can be used to compare the relative impact of the independent variables on the likelihood of volunteering, with the understanding that the size of the standardized coefficients depends on the variance of both the independent and predicted dependent variables. Comparisons made in these data may not hold true in other data with different variances (Fox, 1997:106-107).

Interpreting the National Model of Social Resources and Volunteering

The first substantive observation to be made about the final national model is that at least two indicators of each component of the social resources model have a significant impact on volunteering. Human capital, economic resources, social capital and cultural capital all have direct effects on volunteering. This is preliminary confirmation of the utility of the social resources theory in accounting for the likelihood of being a volunteer. The model accounts for about 28% of the variation in the likelihood of volunteering. This compares favourably with other research on the probability of volunteering, both in Canada and elsewhere, where explained variation is between 10 and 18 percent (Day and Devlin, 1996:45; Freeman, 1997: S151-S153).

The coefficients of the national model deserve discussion, even though, as will be seen later in this chapter, there are religion and region effects that significantly improve the fit of this model. In one regard, the national model represents the impact of social resources on the Canadian population taken as a whole, and that in itself merits attention. In addition, the national model provides a baseline against which subsequent refinements of the model can be compared. A clear understanding of what the model implies about the effects of social resources on volunteering will assist later discussions.

Social Capital

Beginning with the social and cultural capital variables, since these are hypothesized to have only direct effects on volunteering, the number of organizations the respondent participates in has the largest impact on volunteering ($\beta = .096$). This is followed closely by the number of types of informal helping the respondent has undertaken ($\beta = .088$). As two of the more direct indicators of social capital, these show its importance in determining who will be a volunteer. Although their standardized coefficients are fairly close in size, number of organizations has a larger “pay-off” in terms of the likelihood of being a volunteer than does informal helping, as seen in their effect on the odds of volunteering (% Δ Odds). The odds of being a volunteer increases by 65% for each additional organization in which a person participates, while the odds increase by only 16% for each addition type of helping undertaken. The strength of the organization variable accords with much of the prior research on volunteering (McAdam and Paulsen, 1993: 643; Reed and Selbee, 2000a: 577).

Table 4.5 Final National Model for Social Resources and the Likelihood of Being a Volunteer
(Logistic Regression)

	b	S.E.	p-value	Exp(b)	β	% Δ Odds	Excluded Variables
Human Capital Resources							
Education	0.067	0.014	0.000	1.069	0.034	6.9	
Age	0.035	0.013	0.006	1.035	0.105	3.5	
Age ²	-0.0003	0.000	0.008	1.000	-0.105	0.0	
							Health Status
Economic Resources							
Log Household Income	0.164	0.056	0.004	1.178	0.020	17.8	
							% HH Income
Work Hours	-0.007	0.002	0.000	0.993	-0.026	-0.7	Hourly Pay
Social Capital Resources							
# Organization Types	0.505	0.032	0.000	1.657	0.096	65.7	
							Socializing
# Helping Types	0.148	0.011	0.000	1.159	0.088	15.9	
							Yth Experience
#Voting	0.092	0.031	0.003	1.096	0.020	9.6	
Religious Attendance	0.011	0.002	0.000	1.011	0.041	1.1	
Years Resident	0.015	0.007	0.044	1.015	0.013	1.5	
Children Ages 0-5	-0.146	0.070	0.039	0.865	-0.013	-13.5	
Children Ages 6-12	0.269	0.057	0.000	1.308	0.027	30.8	
							Children 13-15
							Children 16-17
Children 18+	-0.180	0.076	0.018	0.835	-0.015	-16.5	
							Household Size
Cultural Capital Resources							
Youth Exposure	0.151	0.022	0.000	1.163	0.045	16.3	
Satisfaction	0.301	0.057	0.000	1.351	0.033	35.1	
							Religiosity
							Control in Life
							News Following
Constant	-6.964	0.610	0.000	0.001			
N	6,258						
χ^2	1,354.3						
df	15						
p-value	0.000						
Pseudo-R ²	0.283						

Note: Exploratory sample only. Respondents age 18 and older.

It is not surprising that participation in organizations has a strong effect on volunteering. On one hand, in many formal organizations, and voluntary organizations in

particular, participation almost by definition requires some form of volunteer activity from time to time. Evidence for the importance of being asked to volunteer on a person's likelihood of volunteering shows this connection (Freeman, 1997: S141; Wilson and Musick, 1998: 800). On the other hand, participation in organizations also represents the size and diversity of the individual's social networks as a basic source of social capital that should enhance the likelihood of volunteering (Marwell, Oliver and Pahl, 1988: 505-506; McPherson and Rotolo, 1996: 183).

The information function of networks---the awareness of opportunities to participate, the reciprocal obligations established through networks, and exposure to those who recruit volunteers are all linked to network size and diversity. Although the number of organizations an individual belongs to would seem to be an obvious predictor of who volunteers, some research on voluntary association members suggests otherwise. The distinction between active and passive participation in these organizations is a recurrent theme in the literature on voluntary organizations (Oliver, 1984:601). As Sokolowski emphasizes, "Membership in voluntary organizations does not automatically imply philanthropic behaviour. One can be a nominal member without active participation in the philanthropic work carried out by the organization." (1996: 267). This highlights an aspect of organizational memberships that may in fact work at cross-purposes to its supposedly positive effects on volunteering. Social networks are almost universally assumed to increase the likelihood of volunteering but there is an aspect of networks that may also reduce participation. Individuals who hold memberships in a diverse range of organizations may exhibit the "multiple embeddings" that can produce conflicting demands on their time and effort, with the overall outcome of reduced

participation (McAdam and Paulsen, 1993:645). The limiting effect of social networks has also been documented in restricted communities, such as new immigrant communities, where the very basis of strong intra-group social capital, their bounded solidarity, also acts to curtail participation outside the group (Portes and Sensenbrenner, 1993). Outside of communities formed by identifiable minorities, this effect will probably be less extensive and less limiting to participation.

In Chapter Three, the number of types of direct helping is argued to represent social capital in the form of the “social credit” a person has accumulated and is indicative of strong ties in their social networks. The model suggests that strong ties are an important influence on volunteering. This may occur because strong ties are an important basis of recruitment to volunteering (McPherson, Popielarz and Drobnic, 1992: 153). It also suggests that individuals who actively amass this type of credit in one sphere of life, their social networks, are more prone to also do so in other spheres, such as participation as volunteers.

In addition, the fact that types of direct helping does not have an overwhelmingly large effect on the likelihood of volunteering suggests that these behaviours are not as closely related as some would argue (in this regard, the correlation between being a volunteer and direct helping is only 0.186). Overall, direct helping may simply indicate one way individuals develop and maintain strong ties in their social networks rather than being an indication of their proclivity for helping behaviour in general (Paxton, 1999: 94).

Three other indicators of social capital are important for predicting who will be a volunteer. Voting has a small positive effect on volunteering. This indicates that

individuals who are, even in a minimal sense, politically active are also likely to participate in other areas of society. If political behaviour is an indicator of the level of an individual's value introjection (Portes and Sensenbrenner, 1993: 1323-1324) then it suggests that those who vote regularly have access to social capital in the form of consensual beliefs. This may be the civic-mindedness, and civic skills, that have been argued to underlie political participation. Certainly the connection between voting and volunteering has been documented in the reverse direction (Brady, Verba and Schlozman, 1995:284) .

Attendance at religious services is another direct indicator of social capital engendered in social networks. Since religiosity was tested and found non-significant in the model, religious attendance here is assumed to reflect membership in a formal community rather than an indication of religious commitment. Religious attendance represents another dimension of an individual's social networks and frequency of attendance indicates the degree of connection, and perhaps, the reciprocal obligations individuals develop within that community of participation (Schervish and Havens, 1997: 240). Jackson, et. al., for example, found that one effect of religious attendance was precisely that it encouraged people to join religious-related groups, where the opportunities for, and exposure to, recruitment to volunteer work would be higher (1995: 67).

Years resident in the community also has a small positive effect on volunteering. It is Abowitz's contention that residential tenure affects social interaction and the creation and entrenchment of lasting social networks because these take time to form and moving disrupts this process to some degree (1990: 550).

Two of the last three indicators of social capital that are significant in the model, children ages 0 to 5, and children ages 6-12 have effects that have been observed before in the literature on volunteering. The third, the effect for children over 18 has not.

The presence of children ages five and under reduces the likelihood of volunteering while children ages 6 to 12 increase the likelihood. The reduction in volunteering associated with very young children is typically explained as the tendency for families, particularly women, to devote time to the intensive child care required of very young children (Rotolo, 2000: 1138). Day and Devlin, for example, find that the presence of children 5 and under reduces the likelihood of being a volunteer for women in Canada, but has no effect for men (1996: 48). This same effect has been observed for the participation of women in the regular labour force. It has also been suggested that as traditional roles relating to child-care change, albeit slowly, there is an increasing tendency for men to reduce labour force time in response to fatherhood (Kaufman and Uhlenberg, 2000: 943-944). If both men and women tend to limit their labour force participation in response to the early years of parenthood, the same effect can be expected in regard to other forms of commitment outside the home.

The presence of children in the early school year ages 6 to 12 has repeatedly been documented as a strong and consistent predictor of volunteer behaviour (Wilson, 2000: 225-226). The explanation is that children draw parents into greater participation in networks associated with providing services (especially recreational services) for their children. This effect shows up in the national model. However, the relative size of the effects for children 0 to 5 and 6 to 12 reflects a nuance to the opposing effects of children that has been noted before. Children 5 and under reduce the odds of volunteering by

about 14%, while the effect of children 6 to 12 is more than twice as strong in the other direction; the odds of volunteering increase by 31%. This suggests that in families only with children under five, there will be an observed decline in the likelihood of volunteering. For families only with children in the 6 to 12 age group there will be a sharp increase in the likelihood of volunteering. However, for families with children in both age groups, the tendency for young children to depress the chances of volunteering will be offset to some degree by the larger positive effect of children 6 and over. Rotolo found this effect in examining entry and exit rates for voluntary association. He explains it by the fact that if parents have school-aged children, their tendency to join child-related youth groups increases. Once they join, they tend to stay, even when more children enter the family (Rotolo, 2000:1154). So the negative effect seen in the model for children 0 to 5 is likely due mainly to families who do not also have older, school aged children in the household.

The final significant social capital effect for the presence of children in the household is the negative effect of children over 18. For families with children over 18 in the household the likelihood of volunteering declines. This negative effect is perplexing if children over 5 are thought to increase their parents social capital by drawing them into wider social networks. However, the clue to understanding this effect is to examine the pattern of effects for the five children variables as a whole. For children under 5 the effect is negative, for children 6 to 12 the effect is positive. For children 13 to 15 and 16 to 17 the effects are both zero, and for children over 18 the effect is again negative. This pattern follows what would be expected from a life-cycle trend viewed in the cross-section. For young parents, child care responsibilities reduce their pre-parenthood levels

of participation. When children begin to enter school they draw their parents into youth oriented activities and the likelihood of volunteering rises. This level of participation does not increase as the children grow older, it remains the same (children ages 13 to 17 do not change the likelihood of volunteering). Then when children pass 18 years of age they are already forming their own social networks that usually exclude parents. At this stage the “kids” effect that first shows up at age 6 is gone and the parents’ level of participation declines as they withdraw from the organizations and networks their children are no longer part of. This pattern is supported by the fact that 67% of respondents with children over 18 still at home, have no children ages 16 to 17 and 76% have no children under 16. These people no longer have the incentive to be involved in youth oriented organizations. Thus the pattern of effects for children by age mirrors the pattern of participation that would expect if the data followed parents through their child-raising years.

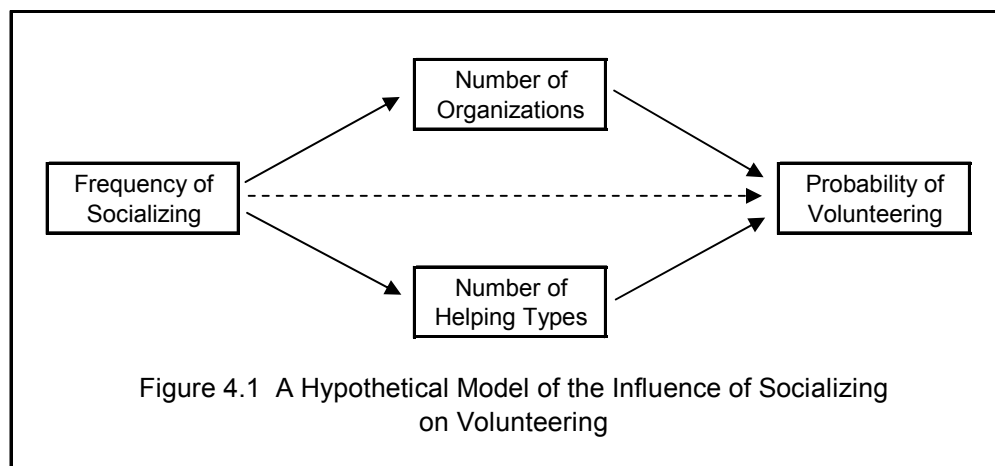
There are two important measures of social capital that do not appear in the model---frequency of socializing and youth experience with group participation. The fact that a long-standing measure of social capital, such as the frequency of socializing, is not significant in the model is interesting since it is taken to reflect one of the fundamental characteristics of social network, close personal ties (Auslander and Litwin, 1988: 27). The frequency of socializing measure used here is virtually identical with that used by Wilson and Musick in their tests of the social resources model (1997: 703; 2000: 1548). In their data this variable measures how often the respondent either talks to or gets together with relatives, friends or neighbours. In the NSGVP data, it measures how often the respondent socializes with relatives, with friends outside the neighbourhood, how

often they participate with friends in recreational activities and how often they watch family members at sport or recreation activities. Both measures are intended to capture the respondent's level of informal social integration (Wilson and Musick, 1999:252). The finding that socializing does not affect volunteering is all the more perplexing because it has been found to be a strong predictor of volunteering in Canada (Reed and Selbee, 2000a: 586).

To clarify why the socializing measure was not significant in the national model for volunteering in Canada, a number of additional tests were conducted. The correlations of socializing with both number of organizations and number of helping types are both over 0.20 --- not exceptionally strong but suggestive of the possibility that some of the socializing effect is being captured by the effects of the other two variables. To determine if this was the case, the nation model was re-estimated with the socializing variable included and the other two excluded. In this version of the model, the socializing variable has a significant positive effect on volunteering. Then the number of organizations and number of helping types were added to the model one at a time. In each case, the socializing measure remained significant. However, when both number of organizations and helping types are added to the model, the socializing variables, as expected, becomes insignificant. So it is the presence of the other two social capital measures in combination that reduces the impact of the socializing variable to zero. One further test included a standard ordinary least squares regression of volunteering on all the social capital variables with tests performed for collinearity. The collinearity diagnostics from this regression produced no tolerance statistics that were under 0.82, so collinearity among the social capital variables is not the reason for the pattern reported above.

Statistical analysis alone cannot determine why the effect of socializing disappears in the presence of number of organizations and types of helping. But in formal causal terms there are two hypothetical situations that conform to these findings. The first occurs if the socialization variable acts as a proxy for either number of organizations or number of helping types, depending on which one is already in the model (simply because it covaries with them). When both number of organizations and helping types are in the model they are better measures of social capital and the proxy drops out. In this case, socializing is a proxy for these other measures, but it is not causally related to the likelihood of volunteering---an increase in socializing does not cause an increase in volunteering. The connection between them is due to some other, unmeasured, common cause.

The second situation occurs if socialization is a cause of both the number of organizations and the number of helping types a person participates in. The model displayed in Figure 4.1 corresponds to this situation.



In this hypothetical model, socializing has direct effects on both number of organizations and direct helping but no direct effect (solid line) on volunteering. Its entire effect on volunteering is through its impact on the two intervening variables, which in turn have direct effects on volunteering. The dotted path in the diagram only shows up as a direct effect of socializing on volunteering when one or the other of the intervening variables is not in the model. This is the pattern that is observed in the national model. The cross-sectional data in NSGVP cannot resolve the issue of whether or not socializing is causally related to volunteering or is simply acting as a proxy indicator of social capital. This finding does suggest, however, that there may be structural relationships among the components of social capital that are not specified by the social resources model that themselves deserve exploration and identification. In a roundabout fashion, this hypothetical structure also lends credence to the interpretation of direct helping as an indicator of networking behaviour rather than as a behaviour that should be treated as a form of volunteering as, for example, Wilson and Musick are wont to do (1997). If direct helping is an integral part of maintaining strong ties with family and friends, it has a different conceptual status from volunteering as participation in formal organizations in the form of unpaid work.

The second social capital effect that does not appear in the model is experience in organized groups as a youth. It was proposed in Chapter Two that the socialization into group and cooperative norms that occurs through participation in youth groups and student government would appear in adulthood as increased social capital, which in turn would increase volunteering. The model shows that if this socialization occurs, its effects in later life are not strong enough to affect volunteering. In a different but related context,

the effects of youth socialization were also found not to affect charitable giving (Schervish and Havens, 1997: 253). However, the fact that this factor does not appear in the model may have more to do with how the dependent variable is measured than with the impact of youth socialization itself. Janoski and Wilson found that participation in youth groups or student government did predict participation in voluntary organizations in later life, but only when that participation took the form of being active in community-oriented associations. Youth participation did not predict which adults would be active in self-oriented associations (Janoski and Wilson, 1995: 282). In fact, the effect of youth experience was actually negative, though non-significant, for self-oriented associations. In the national model of volunteering, the dependent variable used to measure volunteer activity does not distinguish between these two types of organizational context. Thus the opposing effects of youth experience may actually cancel each other out when volunteers are not differentiated along this type of organizational dimension.

This finding suggests that discussions about the heterogeneity of organizations and the impact of this on the factors that predict volunteering have merit (Wilson, 2000: 233). Distinctions such as that first proposed by Gordon and Babchuk (1959) between instrumental, expressive, and mixed types of organizations have appeared regularly in the literature and have to varying extents been useful in describing volunteers (Tomeh, 1973; McPherson and Smith-Lovin, 1986; Palisi and Korn, 1989; Caputo, 1997). But the principal criticism of these taxonomies is that when volunteer work is disaggregated, the organization types are often not much more than “folk categories” that may not be sociologically useful (Wilson, 2000: 233-234).

The other social capital variables that are not in the model are the two children variables and household size. The possible reason the children variables are not significant was discussed earlier---parents increase their volunteering when children first enter school. As the children get older this level of participation does not change. It is only once the children are older (and no longer want their parent around) that the parents' level of participation falls. For household size, it was pointed out in Chapter Three that this variable was included in the analysis in an attempt to capture the effects of children in the household who were not the natural children of the respondent. Either the measure does a poor job of measuring the number of step-children in the households, or step-children do not have the same effect on parents as do natural children. There is no reason to believe the latter is the case, so the former is probably a more accurate explanation of the non-significance of this variable.

Cultural Capital

Five cultural capital measures were examined in fitting the national model. As is evident in Table 4.5, only two measures were found to have a significant effect on volunteering: youth exposure to volunteering, and satisfaction with life in general.

Exposure to volunteering as a youth has a fairly substantial impact on the likelihood of being a volunteer. In standardized form (β) its coefficient is the third largest (ignoring the effect of age for the moment). This supports other findings that early life exposure to volunteering has effects that last well into adulthood (Janoski and Wilson, 1995: 285).

A more controversial measure of cultural capital is the life satisfaction variable.

As argued in Chapter Two, attitudes that reflect a respondent's worldview can be indicators of cultural capital. For volunteering, a particularly important part of this worldview is the respondent's sense of efficacy (Caputo, 1997: 161). Satisfaction with life in general captures some of the individual's sense of being able to make things happen. Why, then, the variable that measures the respondent's sense of control is non-significant is not immediately apparent. However, the wording of the two questions may hold the answer. The satisfaction question asked "How satisfied are you with your life in general?", with responses from very dissatisfied to very satisfied. In comparison, the control question is much more specific: "How much control do you feel you have in making decisions that affect your everyday life?", with response categories "control over few or none", "control over most" and "control over all" decisions. To some extent this question may tap the respondent's sense of efficacy, but it may also simply reflect a realistic evaluation of everyday life---few have control over all decisions that affect their lives. The distributions on the two variables show this "dose of reality" in the control question. For life satisfaction, 8% of respondents were dissatisfied, 48% satisfied and slightly fewer, 45%, very satisfied. For control, however, 15% had control over few or no decisions, 55% had control over most, but then there is a sharp decline to only 30% with control over all decisions. And among those who were very satisfied with life, only 38% felt they had control over all decisions. This is not dramatically higher than those who were dissatisfied with life---24% felt they had control over all decisions. The satisfaction variable measures a more generalized sense of being able to accomplish goals in life and this has a positive effect on the likelihood of being a volunteer.

Human Capital and Economic Resources

Social and cultural capital variables, according to the structure of the social resources model, have only direct effects on the likelihood of volunteering. None of these have causal effects on each other. Those for human capital and economic resources, however, are precursor variables in the full elaboration of the social resources theory. These factors can have both direct and indirect effects on volunteering. Unfortunately, statistical theory does not yet allow for the decomposition of total effects in a logistic path model. As an alternative, it is possible to estimate the reduced form equations for these variables. These models show whether or not the human capital and economic variables that are not in the full national model have indirect effects through their impact on the social and cultural capital variables that are in the model.

In these reduced form models it is unclear how to interpret the coefficients. In standard path analysis, the reduced form coefficients are the total effects of the precursor variables on the dependent variable, in this case the likelihood of volunteering. In the logistic model, they could also be interpreted in this manner, but this logic implies that the size of the indirect effects can be determined by simply subtracting direct effects from total effects as discussed in Chapter Three (Alwin and Hauser, 1975). This leads to the substantive conundrum of having a coefficient for indirect effects, from education to income for example, that says that a one unit change in education produces a change in the log odds of income. Substantively this interpretation is undefined because income is a continuous variable and log odds are meaningless when applied to change in a continuous variable. As a result, these reduced form models are to be treated with caution. However,

Table 4.6 Reduced Form Model For the Effects of Human Capital and Economic Resources on the Likelihood of Being a Volunteer (Logistic Regression)

	b	S.E.	p-value	Exp(b)	% ΔOdds
Human Capital Resources					
Education	0.115	0.013	0.000	1.122	12.2
Age	0.052	0.011	0.000	1.053	5.3
Age ²	-0.0005	0.000	0.000	1.000	-0.05
Health Status	0.192	0.029	0.000	1.212	21.2
Economic Resources					
Log Household Income	0.328	0.055	0.000	1.389	38.9
% Household Income	-0.002	0.001	0.086	0.998	-0.2
Hourly Pay	-0.002	0.003	0.558	0.998	-0.2
Work Hours	-0.006	0.002	0.007	0.994	-0.6
Constant	-7.713	0.602	0.000	0.000	
N	6258				
X ²	337.6				
df	8				
p-value	0.000				
Pseudo-R ²	0.076				

Note: Exploratory sample only. Respondents age 18 and older.

it is legitimate to use the reduced form models to determine if any of the precursor variables that are not in the final national model might have indirect effects on volunteering. Precursor variables that have significant effects in the reduced form but not in the final model should have indirect effects on volunteering, or would if it was possible to estimate these in the context of logistic regression. Table 4.6 shows the logistic regression of volunteering on the full set of human capital and economic resources. In the reduced form it is apparent that neither of the opportunity cost measures, % household income and hourly pay, has any impact on the likelihood of volunteering. Non-significance in the reduced form means these variables do not have indirect effects through their possible influence on social or cultural capital variables. This undermines

the opportunity cost hypothesis in the economic theory of volunteering. The likelihood of being a volunteer does not depend on an economic calculation of time allocation.

However, if ordinary least squares (OLS) procedures are used to estimate the effects of human capital and economic resources on measures of social or cultural capital, it is possible to reach a different conclusion. Table 4.7 shows the result of the OLS regression of the number of organizations participated in (a social capital measure) on the human capital and economic resources. In this model, the measure of household opportunity cost, % household income, is again non-significant, but hourly pay, the measure of individual opportunity cost, is significant. Because number of organizations affects the likelihood of volunteering, any variable that influences this measure will indirectly affect the likelihood of volunteering. From this point of view, hourly pay does affect volunteering. The data cannot resolve this contradiction, but it must be kept in mind when examining the results of the logistic regressions. These results suggest that it may be unwarranted to conclude, from either the national model or the reduced form, that economic or human capital variables do not have indirect effects on volunteering. Nonetheless, it is appropriate to draw conclusions about their direct effects on the likelihood of volunteering.

Another factor that does not appear in the national model but is significant in the reduced form logistic model is health status. As noted above, this variable was excluded from the national model because cross-validation of the national model suggests that its significant effect is idiosyncratic to the exploratory sample and as a result was dropped from the national model. By inference then, the health measure does not have a direct

Table 4.7 Reduced Form Model For the Effects of Human Capital and Economic Resources on the Number of Organizations (Ordinary Least Squares Regression)

	B	Std. Error	Beta	T-test	p-value
Human Capital Resources					
Education	0.058	0.005	0.158	-12.060	0.000
Age	0.009	0.004	0.137	11.480	0.042
Age ²	0.000	0.000	-0.001	-0.009	0.993
Health Status	0.079	0.012	0.085	6.540	0.000
Economic Resources					
Log Household Income	0.223	0.023	0.146	9.519	0.000
% Household Income	0.000	0.000	0.001	0.101	0.919
Hourly Pay	0.010	0.002	0.103	6.492	0.000
Work Hours	-0.001	0.001	-0.024	-1.446	0.148
Constant	-3.006	0.249			0.000
F	88.15				
p-value	0.000				
R ²	0.100				

Note: Exploratory sample only. Respondents age 18 and older.

effect on volunteering but the status of its possible indirect effect on volunteering through economic resource variables remains uncertain.

These tests in the reduced form bear only on the human capital and economic resources variables that were not in the national model. For the reasons outlined above, they have little to say about the possibility that the human capital or economic resource variables that *are* in the national model also have indirect effects on volunteering in addition to the direct effects found in the national model.

Returning to the national model in Table 4.5, the only economic resources that have a direct effect on volunteering are household income and hours worked weekly. The two opportunity cost measures, % of household income and hourly pay have no direct effect on volunteering. This contradicts the strong form of the opportunity cost

hypothesis, as presented by Menchik and Weisbrod, that predicts volunteering will be negatively related to opportunity costs (1987: 165:167). But as noted above, this does not necessarily invalidate the opportunity cost model since the contradiction between finding direct effects on social capital variables using ordinary least squares regression and finding no reduced form effects using logistic regression leave that decision in limbo. The results from the national model do mean, however, that opportunity costs are not directly factored into the decision to volunteer. If opportunity costs are factored in, it is in earlier decisions that affect the individual's social and cultural capital rather than in the decision to volunteer itself.

Economic models also predict how income will affect the allocation of time to volunteering. In the consumption model, where volunteering is a normal consumption good, those with higher income can "purchase" more of that good, so the likelihood of volunteering (buying any of the good) should vary positively with income (Menchik and Weisbrod, 1987: 165). In the investment model where volunteering is investment in "on-the-job training", the effects of income are less clear. The model predicts that an individual will invest (forego current earnings) in volunteering as a way to increase future earning, but only to the extent that the return on their investment will be positive (Menchik and Weisbrod, 1987: 166). Current wage has an effect on this investment, but current income does not unless the cost of getting the training exceeds the cost of paying for it. When the cost of financing that training through borrowing exceeds the return on the investment, personal wealth (income) makes the cost of training lower and volunteering will vary positively with income. In the national model there are conflicting outcomes for the economic model. Volunteering does vary positively with income, as

predicted, but the two measures of opportunity cost are not significant. The opportunity cost model does not appear to be an accurate description of the process whereby individuals decide to allocate time to volunteering. Others have also found that volunteering increases as opportunity costs rise (Freeman, 1997: S165). Together, these findings indicate that the purely economic interpretation of volunteering does not greatly improve our understanding of the process.

The other economic resource that has an impact on volunteering represents the time constraints faced by people who work in the paid labour force. As hours worked increase, the likelihood of volunteering declines. The effect is not very large: each additional hour of paid work only decreases the odds of volunteering by about 1%. Working people may face a “time crunch” but it does not have a large impact on whether or not they volunteer. Of course, the likelihood of being a volunteer only indirectly reflects the amount of time devoted to volunteering. Having become a volunteer implies having spent some amount of time in the activity, although that can be very little time. Chapter Five examines directly how paid work affects the amount of time volunteered, but here it is apparent that it has little effect on the decision to volunteer. Overall, economic resources affect volunteering in ways that are consistent with much of the existing research: volunteering increases with income and decreases with hours worked.

The effects of human capital resources are also consistent with prior finding. Education increases the likelihood of volunteering, as does age. The negative coefficient for the age² variable means that the likelihood of volunteering increases with age but at a decreasing rate. According to the social resources model, individuals with more human capital will volunteer more because they have more of the skills required to competently

perform these activities. The effects here are consistent with this interpretation. The declining rate of increase with age suggests that the gains in life-skills associated with aging gradually wane. At earlier ages, the life-skills gained each year improve one's ability to perform volunteer activities, but the improvement in these abilities declines as life progresses, and the pay-off to each year's increase in skills declines gradually (Sundeen, 1988: 554). As Gallagher notes, historically this pattern was interpreted as a consequence of the elderly withdrawing from participation in later life (1994: 567). More recent research, however, suggests that the decline in participation rates with age is not necessarily due to a withdrawal of the elderly from volunteer activities per se, but rather to a change in the pattern of organizational membership. Rotolo, for example, found that while older people did join fewer organizations than younger people, they remained as members of organizations for longer spells (2000: 1155). This means that at any given time, younger people will be members of more organizations and thus more likely to volunteer, than older individuals. The effect of different joining and leaving rates by age would account for the curvi-linear relationship between age and volunteering found in cross-sectional data.

The health measure is not in the national model. Holding all other factors constant, self-evaluated health status does not affect the propensity to volunteer. Other studies have found a negative connection between health and volunteering (Day and Devlin, 1996; Chappell and Prince, 1997: 337). At times the assumption of declining health in older years is put forward as part of the explanation for the decline in participation with age (Gallagher, 1994: 574). The national model refutes this contention. Because age is in the model, the absence of the health variable means that at every age

level, people who report poor health are as likely to volunteer as people who report good health. The idea that the elderly withdraw from volunteering for health reasons does not stand up to scrutiny in this model.

Summarizing the Social Resources Model of Volunteering in Canada.

The principal finding in this section of the analysis is that the social resources model, as a description of the impact of social resources on volunteering in Canada, both confirms prior findings about volunteering and provides new insights into how resources affect the likelihood of being a volunteer. The model integrates the various strands of theoretical and empirical work in a way that provides a coherent approach to studying the impact of resources on volunteering. As applied to the Canadian data, all the major components of the social resources theory have the effects hypothesized by the theory and often found in empirical research on volunteers. The model also points to potential problems with other explanations of volunteering, in particular the opportunity cost hypothesis, and suggests revisions to the social resources theory that may impact how resources are studied.

The model confirms the importance of social capital factors in promoting participation as a volunteer. The number of social capital indicators that prove to be important predictors of volunteering is in part due to their availability in the data, but it also highlights the fact that social capital is not a uni-dimensional concept---individuals have a number of ways they can accumulate and access social capital, and these may have independent effects on participation. Most of the social capital indicators found to affect volunteering are those routinely identified in the research literature---number of

organizations participated in, voting, religious attendance, length of residence and children in the household. In contrast, using direct helping types as an indication of social capital is a new way to look at this behaviour. The model cannot adjudicate the propriety of this approach, but the evidence that direct helping mainly involves friends and family suggests that it might more accurately reflect the individual's maintenance of their social networks than how often they help people outside those networks. This issue also affects the use of measures of socializing with family and friends as a network measure of contact frequency. One important question in regard to the characteristics of network ties is the salience of weak ties and of strong ties for the development of social capital and by implication, for volunteering. The national model suggests that both have an important effect on volunteering --- both number of organizations (weak ties) and direct helping (strong ties) increase the likelihood of volunteering. Weak ties appear to have a slightly stronger effect than strong ties, but the incommensurability of the two measures, and their near equal standardized effects, does not resolve this question. More research on how people are recruited to volunteering is required. In addition, socializing with friends and family may not be a useful measure of network-based social capital.

The model shows that cultural capital affects volunteering, particularly through exposure to volunteering as a youth, and in the individual's general satisfaction with life as a rough indicator of their sense of efficacy. In support of previous findings, the model shows that religiosity does not affect volunteering but religious attendance does. It is not the generalized disposition towards helping others associated with religious commitment that prompts volunteering, but rather the social capital that is generated through participation in these unique communities of interest.

Including human capital resources in the model produces no new findings. As expected education and age have a positive effect on volunteering. In contrast, the results for economic resources reinforce other research that suggests that the economic models of volunteering based on the analysis of opportunity costs may not be entirely appropriate formulations of the social process that underlies volunteering. In particular, whether opportunity cost is measured relative to the individual or relative to the household, it does not have a direct effect on the likelihood of volunteering. People do not appear to maximize their utility in making decisions about volunteering.

Although some refinements to the national model will be developed below, in its present form this model represents an important baseline for research on volunteering in Canada. By identifying what factors are and are not involved in the basic process of volunteering in Canada, it provides a standard that can guide future investigations in directions that address the issues and questions it raises.

Refining the Model: Group Differences in the Likelihood of Volunteering

The national model of volunteering does not include variables representing various qualitatively different groups in society, such as gender, marital status, or religion, yet the literature is replete with examples of research where these characteristics have important effects on volunteering (cf., Wilson, 2000; Smith, 1994; Payne, Payne and Reddy, 1972). One factor that is often found to have an impact on volunteering is gender. As Payne, Payne and Reddy point out in their 1972 review of research on volunteer association memberships, the evidence for gender differences is mixed. Some studies find that men participate in more organizations than do women while others find

no gender differences, or even that women participate more than men (1972: 221). This discrepancy may have more to do with differences across studies in the definition of voluntary associations than real gender differences in participation rates but there is recent research that finds that men hold more memberships in voluntary groups than do women (Palisi and Korn, 1989: 187). When the research focuses specifically on likelihood of volunteering, the results are even more inconsistent. Some studies find that women are slightly more likely to volunteer than men (Freeman, 1997: S146; Day and Devlin, 1996: 45), others that men are more likely to volunteer (McAdam and Paulsen, 1993: 654), and still others that there is no difference between men and women (Sundeen, 1988: 558); Berger, 1991: 233). Findings for Canada are similarly mixed. Studying volunteers in 1987, Vaillancourt finds that women are more likely to volunteer (1994: 818). Using more recent data, Reed and Selbee find that women are more likely than men to volunteer in urban centers on the Prairies, but men are more likely to volunteer in urban centers in Ontario, while in other parts of the country there are no gender differences (2000a: 578-582).

The variation in gender patterns of volunteering are, in part, the result of applying multivariate models with different sets of independent variables. When gender as a group variable is examined on its own in the NSGVP data, the probability that women volunteer is significantly higher than that of men (women = 0.29, men = 0.25). But when other factors that also account for volunteering are considered in combination with gender, the pattern changes. If men and women are separated into those who are employed and those who are not in the labour force, the data show that women who are not employed still volunteer more than men who are not employed, but among the employed, there are no

gender differences (women = .24, men = .23). Thus whether or not there are gender differences in volunteering depends on what other variables are considered in concert with gender. The possible complexity of the relationship between gender and other factors that affect volunteering suggests that the appropriate strategy is to look for gender differences in the national model of volunteering.

A second nominal group variable that has a history in the research on volunteering is religious affiliation. Research has largely shown that a significant divide exists between Catholics and Protestants in many aspects of participation. The general conclusion reached is that Protestants are more likely to join organizations (Tomeh, 1973: 99), and are more likely to participate actively as volunteers (Sundeen, 1988: 556). The evidence for denominational differences in volunteering, however, is not that clear cut. There is evidence that once religion-related factors such as religious attendance or religious commitment are considered, there are no denominational differences in rates of volunteering (Becker and Dhingra, 2001: 324). It remains to be seen if the social resources model can identify any differences between religious groups.

Other group characteristics have been linked to differences in volunteering, including marital status (Sundeen, 1988: 554), ethnic heritage (Day and Devlin, 1996: 45) and immigrant status (Reed and Selbee, 2000a: 583). Of particular interest in Canada is the pattern of variations in volunteering across regions of the country. Extensive research has shown that volunteering, and its correlates, differ quite markedly across regions, with two areas in particular that stand out --- very high rates of volunteering are observed in the Prairie provinces and very low rates in Quebec (Reed and Selbee, 2000c; Vaillancourt, 1994: 821). These variations raise the question of whether or not the social

process represented by the social resources model differs across regions and if so, how it differs.

In this section, the national model is refined by examining how differences between these types of nominal groups affect the parameters of the national model. As discussed in both Chapters 2 and 3, there are theoretical and methodological reasons for not including nominal variables in the basic national model. On theoretical grounds, group variables are not causally related to the dependent variable. As they have typically been employed, group variables are proxies for unmeasured group differences. These unmeasured variables may be causally related to the dependent variable but the grouping variables themselves do not show what characteristics of the groups are at work in producing group differences. In methodological terms, group variables in a model such as the national model only show whether or not there are significant differences across groups in the mean level of the dependent variable. It is left to interpretation and extrapolation to account for why the differences exist. An alternative approach to identifying group differences is to employ statistical tests that identify where the parameters of a model actually differ across groups. These differences can take the form of variation in the mean level of the dependent variable (intercept differences) or in the impact of the independent variables on the dependent variable (slope differences). Intercept differences are of interest, but it is slope differences that are more substantively informative because they identify the ways the social dynamics, in terms of the impact of independent variables in the model, differ across groups. Of course, this still requires interpretation, but it shifts attention from general group characteristics to why specific parts of the process should differ across groups. For example, as the elaboration of the

national model will show, the differences that are observed in the mean level of volunteering among religious groups are completely accounted for by the introduction of three sets of interaction terms between religion and components of the social resources model. This locates the religion differences in processes that can be examined in greater detail. The discussion moves from general questions about differences among religion groups in the probability of volunteering to specific questions about why particular parts of the social resources model should work differently in different groups.

To refine the national model, the first step is to identify significant mean differences for the group variables that have important effects on volunteering. Research in both Canada and elsewhere, has shown that the substantively most important group differences are gender, marital status, religion, ethnicity, immigrant status and region (Reed and Selbee, 2000a). Two grouping variables that have been found to affect the likelihood of volunteering that are not in this list are class and occupational status (Selbee, 2002; Reed and Selbee, 2000a). These will not be examined because the information required to identify these groups in the sample is only available for employed persons. Since the model generation process is intended to produce a model for all adult Canadians, these two are not included.

Table 4.8 presents six group variables, and associates rates of volunteering, that will be examined as refinements to the national model. Each group variable is significantly associated with the likelihood of volunteering, although the largest associations by far are for region and religion. Among religious groups, there is a 16-point difference between Catholics at the low end (22%) and Protestants at the high end

(38%). Among regions there is an even larger spread---from 18% in Quebec to 40% in

Table 4.8 Volunteering Among Subgroups in Canada

		Non-Volunteers	Volunteers	Total
		percent		
Gender	female	71.1	28.9	100.0
	male	75.6	24.4	100.0
$\chi^2 = 19.3$				
p-value= 0.000				
Marital Status	Married	71.0	29.0	100.0
	Single	77.9	22.1	100.0
	Separated, Divorced or Widowed	77.3	22.7	100.0
$\chi^2 = 32.9$				
p-value= 0.000				
Religion	Protestant	61.7	38.3	100.0
	Other	68.8	31.2	100.0
	No Religion	76.0	24.0	100.0
	Catholic	78.1	21.9	100.0
$\chi^2 = 129.5$				
p-value= 0.000				
Ethnic Heritage	Canadian	80.2	19.8	100.0
	French	76.1	23.9	100.0
	Other	70.9	29.1	100.0
	British	66.9	33.1	100.0
$\chi^2 = 86.3$				
p-value= 0.000				
Immigrant Status	Immigrant	77.3	22.7	100.0
	Canadian Born	72.4	27.6	100.0
$\chi^2 = 10.9$				
p-value= 0.001				
Region of Canada	Prairies	59.8	40.2	100.0
	Atlantic	68.8	31.3	100.0
	B.C.	72.2	27.8	100.0
	Quebec	82.2	17.8	100.0
	Ontario	73.9	26.1	100.0
$\chi^2 = 160.1$				
p-value= 0.000				

Note: Exploratory sample only. Respondents age 18 and older.

the Prairies. There is a strong possibility that one or both of these factors will show differences across groups in the effects contained in the national model. The other four group variables show less variation across the groups they define, but all are associated with the likelihood of volunteering.

The results of adding the six group variables one at a time to the national model are presented in Table 4.9. The change in X^2 for each variable tests whether or not there is a significant difference between the mean levels of volunteering across the categories of each variable. In effect, each test lets the intercept of the predicted logistic regression line be different for each category of the group variable while holding all slope coefficients equal across categories (this is the equal regression model of Figure B.1). All of the group factors except marital status make a significant contribution to the fit of the baseline model.

Table 4.9 Contribution of Group Main Effects to the Fit of the National Model

Group Variable Added to the Baseline Model	ΔX^2	df.	p-value
Baseline Model: National Model	1354.35	15	0.000
Gender	7.52	1	0.006
Marital Status	5.09	2	0.079
Religion	65.88	3	0.000
Ethnic Heritage	18.15	3	0.000
Immigrant Status	9.96	1	0.002
Region of Canada	67.83	4	0.000

Note: Exploratory sample only. Respondents age 18 and older.

For marital status, the mean differences evident in Table 4.8 disappear when the effects of social resources are present. This is not entirely surprising since the main difference in volunteering among marital status groups is between individuals who are

married and those who are single, separated, divorced or widowed. The obvious difference between these groups is the presence of children in the house. Among married individuals, 44% have one or more children age 6 and older at home, while only 4% of those who are single, and 23% of those who are separated, divorced or widowed have children of this age at home. Given the strong positive effects in the national model of children over 5, the overall level of volunteering would be expected to be higher among married individuals. A specific test of how children affect the marital status difference shows that it is entirely due to the presence of children ages 6 to 12 in the household. When the national model, minus the variables for children over 5 but with the marital status variable, is fit to the data, marital status produces a significant increase in X^2 ($\Delta X^2 = 9.04$, $df = 2$, $p = 0.011$). When the variable for children ages 6 to 12 is added to the model, the contribution of marital status becomes non-significant ($\Delta X^2 = 4.04$, $df = 2$, $p = 0.132$). Once the comparison is made between marital status groups with the same number of children in this age group, the difference between groups disappears.

The group factors with the largest contribution to the fit of the model are region and religion. In absolute terms, region is slightly stronger than religion in its contribution to X^2 , but religion produces a slightly larger change in the explained variation (R^2 with religion is 0.298, with region, 0.296). Since their impact is virtually identical, it is not clear which factor to include first as a refinement to the national model. This decision has important consequences for the eventual structure of the elaborated model. Because the two factors are strongly associated, whichever enter the model first will capture some of the impact on volunteering of the other, with the result that subsequently adding the other factor may have little or no independent effect. This issue can only be resolved

substantively --- by choosing to begin with the factor that makes more sense substantively. On this basis it was decided to enter religion first into the model. Religion is an attribute of individuals in the sample, and the social resources model is concerned with how individuals' characteristics affect volunteering. Region, in contrast is a contextual variable that by proxy may measure differences among individuals, but also measures differences between regions in a whole range of social, political, cultural, economic and even geographical dimensions that are not specifically characteristics of individuals. These can certainly impact how social resources affect volunteering, but they are external to the thrust of the theory. The theory focuses on individual attributes and does not purport to explain, for example, how different political or cultural or social histories have produced differences in the structure of the nonprofit sector, nor how these impact volunteering. These are important but they are better left to a macro-analysis that deals with them directly. At the level of the individual, the strategy is to identify the attributes that differentiate among individuals. Once these are better understood, systematic differences across regions may be more clearly delineated.

As Table 4.8 shows, there are significant differences between religious groups in the percentage of each group who are volunteers. Protestants at 38% and Other Religion groups at 31% are significantly more likely to be volunteers than are either Catholics at 22% or those with no religious affiliation at 24%. According to the social resources model, these differences can be due either to differences in the level of resources these groups exhibit, in which case the group differences would disappear when social resources are accounted for, or because the effects of social resources on volunteering are different across groups. The results in Table 4.9 confirm that the bivariate difference

between religious groups is not simply due to differences in the level of social resources. Even when these are controlled, the religion main effects are significant. Thus the differences between groups must be due to differences in the impact of social resources on the likelihood of being a volunteer (or to factors exogenous to the model).

To investigate this possibility, interaction terms between the religious groups and each of the continuous variables in the national model were created and added to the model. For each term, the size of its contribution to X^2 is assessed. At each step in the process, the interaction that contributes most to improving the fit of the model is added and the process is repeated until no further interactions terms provide a significant improvement in fit. This process results in adding four interaction terms to the national model. These were interactions between religious groups and (1) number of organizations, (2) children 18 and over, (3) religious attendance, and (4) education. Together the four interactions improved the fit of the model by 79.1 X^2 and used 11 degrees of freedom, giving a p-value of less than 0.001.

In the process of searching for differences across religious groups in the impact of resources in the national model, only resources that had significant effects on volunteering were tested for group differences. The social resources that had already been excluded from the national model were not tested for variation across categories of the group variables although it is possible that the excluded resources could differ across groups. However, it can be shown mathematically that a resource variable that has a zero effect in the national model can only have a non-zero effect in two or more subgroups if the group effects take on a very unlikely form. Using men and women as an example, a resource with a zero slope in the national model (a zero coefficient) can have non-zero

slopes in the two groups only if the slope for one group is precisely twice as large as the slope in the other group and is of opposite sign (since the sum of the slopes must equal zero when they are treated together). This possibility is very remote. Using the socializing resource variable as an example, since it was not significant in the national model, if it had a positive effect on the likelihood of volunteering for men, then it would have to have twice as large a negative effect for women. This would mean that for men, the more they socialize, the greater the likelihood they will be volunteers. But for women the reverse would have to be true --- the more they socialized, the less the likelihood they would be volunteers. Since there are no theoretical reasons to expect such diametrically opposed effects for the social resource variables, no further tests of excluded resources were carried out.

Having tested and included all the religion interaction terms that were significant, the next step was to re-test the remaining group factors, again looking for mean differences between groups. Table 4.10 shows the tests of mean differences for the five

Table 4.10 Contribution of Group Main Effects to the Fit of the National Model with Religion Effects

Group Variable Added to the Baseline Model	ΔX^2	df.	p-value
Baseline Model: National Model and Religion	1493.28	29	0.000
Gender	3.25	1	0.071
Marital Status	0.256	2	0.880
Ethnic Heritage	6.95	3	0.074
Immigrant Status	10.07	1	0.002
Region of Canada	42.27	4	0.000

Note: Exploratory sample only. Respondents age 18 and older.

remaining group variables. Two of these show significant mean differences---region and immigrant status, but region is by far the stronger effect. This factor was added to the model, and tests conducted to determine if any of the variables already in the model varied by region. There are two steps to this process. First, region is interacted with each of the continuous variables in the model, then it is interacted with the religion variable and with each of the four religion interaction terms. The first step determines if the social resources that do not vary by religion might vary by region, while the second step determines whether the social resources that do vary by religion might at the same time vary by region. These tests indicate that none of the region by resource interactions were significant, so none were added to the model. The next step was to test the religion by region interaction. This effect did provide a significant improvement in the fit of the model ($\Delta X^2 = 26.3$, $df = 12$, $p = 0.01$). The effect was added to the model and the four religion by resource interaction terms were tested for variation by region. None proved to be significant. Once all the religion and region effects had been examined, the next step was to look for mean differences in the four remaining group factors; gender, marital status ethnicity and immigrant status. None of these made a significant contribution to the fit of the model, indicating that no further mean differences existed. Testing was halted at this point. The model was cross-validated by applying it to the confirmatory sample. The region by religion interaction was not significant. In fact, only one of the effects for the twelve region by religion combinations was significant in the confirmatory sample, so the effect was dropped from the exploratory model. The result of this model generation procedure is the religion-region model presented in Table 4.11.

The Effects of Religion and Region in the Social Resources Model of Volunteering

The result of adding religion and region main effects and religion by resource interaction effects to the national model has improved the fit of the model. Relative to the national model, this model increases fit by $X^2 = 144.8$, using 18 degrees of freedom, for a p-value of < 0.001 . This improves the variation accounted for by the model from 28% to 31%. More importantly, it identifies two group variables and one set of group by resource interactions that improve the substantive information available in the model for understanding the process that governs the likelihood of volunteering in Canada.

To begin with, the model does not change in any dramatic way the substantive conclusions about the main effects of social resources on volunteering that were found in the national model as a whole. Each social resource variable is significant and has the same sign as in the national model. The one exception is that the effect of children 18 years and older is no longer significant. The meaning of this change will be discussed in detail in treating the interaction terms in the model. The social resources variables also have about the same relative impact on volunteering as was found in the national model, as indicated by the percent change in the odds associated with each resource.

In presenting the coefficients in this model, unlike the national model, standardized coefficients are not presented for two reasons. First, there are two nominal group factors in the table, religion and region, that are each represented by a set of dummy coded indicator variables. These enter the model both as main effects and as part of interactions with the continuous social resource variables. For these effects standardization is not a meaningful procedure. For dummy variables, the unstandardized main effect coefficient has a straightforward interpretation as the difference between the

Table 4.11 The Religion-Region Social Resources Model of the Likelihood of Being a Volunteer

		B	df	Sig.	Exp(B)	% ΔOdds
Human Capital Resources						
Education		0.108	1	0.000	1.114	11.4
Age		0.031	1	0.017	1.031	3.1
Age ²		-0.0004	1	0.010	1.000	-0.035
Economic Resources						
Log Household Income		0.180	1	0.002	1.197	19.7
Work Hours		-0.008	1	0.000	0.992	-0.8
Social Capital Resources						
# Organization Types		0.502	1	0.000	1.652	65.2
# Helping Types		0.149	1	0.000	1.161	16.1
#Voting		0.122	1	0.000	1.130	13.0
Religious Attendance		0.024	1	0.000	1.024	2.4
Years Resident		0.016	1	0.041	1.016	1.6
Children Ages 0-5		-0.146	1	0.044	0.864	-13.6
Children Ages 6-12		0.302	1	0.000	1.353	35.3
Children Ages 18+		0.026	1	0.870	1.026	2.6
Cultural Capital Resources						
Youth Exposure		0.122	1	0.000	1.130	13.0
Satisfaction		0.260	1	0.000	1.296	29.6
Group Main Effects						
	RELIGION (Protestant)		3	0.020		
	Other Religion	-1.023	1	0.124	0.359	-64.1
	No Religion	0.581	1	0.289	1.788	78.8
	Catholic	0.753	1	0.107	2.122	112.2
	REGION (Prairies)		4	0.000		
	Atlantic	-0.402	1	0.003	0.669	-33.1
	B.C.	-0.403	1	0.001	0.668	-33.2
	Quebec	-0.622	1	0.000	0.537	-46.3
	Ontario	-0.576	1	0.000	0.562	-43.8
Religion Interaction Effects						
	N orgs * RELIGION		3	0.029		
	N orgs by Other Religion	0.240	1	0.048	1.271	27.1
	N orgs by No Religion	-0.097	1	0.308	0.907	-9.3
	N orgs by Catholic	-0.054	1	0.533	0.948	-5.2
	Kids 18+ * RELIGION		3	0.006		
	Kids 18+ by Other Religion	0.355	1	0.150	1.426	42.6
	Kids 18+ by No Religion	-0.329	1	0.159	0.720	-28.0
	Kids 18+ by Catholic	-0.358	1	0.064	0.699	-30.1
	Church Attend * RELIGION		2	0.005		
	Church Attend by Other Religion	-0.014	1	0.008	1	-1.4
	Church Attend by Catholic	-0.013	1	0.003	0.987	-1.3
	Education * RELIGION		3	0.016		
	Education by Other Religion	0.045	1	0.353	1.046	4.6
	Education by No Religion	-0.042	1	0.308	0.959	-4.1
	Education by Catholic	-0.077	1	0.026	0.926	-7.4
Constant		-6.812	1	0.000	0.0011	
	N		6,175			
	X ²		1,499.1			
	df		33			
	p-value		0.000			
	Pseudo-R ²		0.313			

Note: Exploratory sample only. Respondents age 18 and older.

indicator group and the reference group in the predicted value of the dependent variable. Unlike continuous measures, the standard deviation of a dummy variable has no substantive meaning, thus the usual interpretation of a standardized coefficient makes no substantive sense. Interaction terms involving dummy regressors, such as those in the religion-region model, represent differences between groups in the slope coefficients of the social resource variables they are interacted with. These interaction effects are not independent of the resource variable main effects and their substantive usefulness lies in comparing group categories in terms of those main effects. Standard deviation changes in these effects are also meaningless (Fox, 1997: 153). Secondly, the intent of the analysis is not to determine which resources have the largest impact on volunteering in some general sense, but on how religion, region or any other groups compare in terms of these effects. The analysis focuses on the unstandardized logistic regression coefficients, with their conversion to percentage change in the odds, and at times on probabilities where appropriate.

Interpretation of the effects in the model depends on which groups are being examined. Because there are group variable main and interaction effects in the model, the meaning of a given resource variable main effect depends on whether or not it is also part of an interaction term. Of the fifteen resource variables, four are part of interactions--- education, number of organizations, religious attendance and number of children 18 and older. The remaining eleven resource variables are not involved in interactions and their coefficients have the same meaning they have in the national model. The main effects of these variables are the effect of each resource on the likelihood of volunteering for all respondents in the sample, controlling for the effects of all other variables in the model

The main effects of the four resources involved in interactions have a different interpretation. These are the effects of these resource on volunteering for those defined as the reference groups by all the group variables in the model. In the religion-region model in Table 4.11, the reference group for religion is Protestants, and the reference group for region is the Prairies. Combined, the people defined by these references groups are Protestants in the Prairie provinces. The main effects for the four resources involved in interaction terms represent their impact on volunteering for this group only. The choice of reference groups in coding dummy indicator variables is entirely arbitrary and does not affect either the fit of the model nor the coefficients for variables that are not part of interaction terms. However, the choice of reference group does affect the coefficients of resource main effects involved in interactions, the main effect coefficients for the group variables and the coefficients of the interaction terms. The significance of these coefficients (in terms of their individual t-tests) will depend on the choice of reference category, and this fact is used to re-estimate these effects in ways that provide direct statistical tests of group differences (Jaccard, 2001: 23).

The first component of interest in the model to examine is the constant, the intercept of the predicted logistic regression line. The exponent of the constant, 0.0011, is the odds of being a volunteer for a Protestant in the Prairies who “scores” zero on all the social resource variables. No one in the sample corresponds to this profile---while it is possible to have a zero score on many of the social resources, on others it is not. On six variables there is a minimum score, including education (6 years), age (18 years), age² (324), logged income (8.7), years of residence (0.5 years), and youth exposure (1). Using these and the zero scores on the other resources as the profile of the “minimum” person,

shows that for this Protestant in the Prairies, the odds of being a volunteer are 0.0186, which translates into a probability of 0.02. The model predicts that a (Protestant, Prairies) person with minimum social resources has about a 2% chance of being a volunteer. The idea of a person with minimum values on all social resources is somewhat unrealistic. Looking instead at a Prairie Protestant with average values on each of the social resources, shows that they have about a 37% chance of being a volunteer. This calculation from the parameters in the model is in line with the actual volunteer rates from Table 4.8 which shows that the rate of volunteering for Protestants is 38%, and for people in the Prairies is 40%. Thus the model predicts a slightly lower probability of volunteering for the average Prairie Protestant than is observed in the data (45%). The estimate from the model, nonetheless, is reasonably close to the sample estimates which suggests that the model accurately reflects the social process at work in volunteering.

The first set of nominal categories in Table 4.11 are religion groups. The main effect coefficients for these groups represent differences between religion groups across all regions of the country. The religion by region interaction was not validated in the second sample and was dropped from the model, so the coefficients for the religion variables test whether or not there are any religious group mean differences once regional differences, and religion-resource interactions, are accounted for. None of the religion main effect coefficients are significant: there are no denominational differences in the overall likelihood of volunteering, once the religion interaction terms are in the model. This indicates that differences in the observed rate of volunteering among religious groups are entirely due to: (a) regional differences in volunteering, and (b) religious

group differences in the effects of social resource variables. This conclusion has important implications for the study of volunteering in Canada.

When rates of volunteering or volunteer participation in general are broken down by religion, the differences are often ascribed to differences in religious doctrine or to the distinctive character of religious organizations. These factors may affect the rates of volunteering but if they do it is not in the form of some generalized difference between religions, but through differences in the way social resources translate into volunteer participation for each group. In seeking to explain religious differences this is where the explanation is to be found.

The region main effects in the model are all significant. Once variation between religious groups in how resources impact volunteering is accounted for, four regions have lower overall (mean) rates of volunteering than do the Prairies. Again, since the religion-region interaction is not in the model, the difference is not due to a different “mix” of religion groups in each region. Moreover, since none of the region-resource interactions are significant, the explanation for this difference lies outside the effects of both religion and social resources.

The region main effects show that all four regions are significantly different from the Prairies, but these tests do not compare the other regions among themselves. To do this, the model is re-estimated with different regions as the reference group. The main effects from this re-estimated model are then tests of difference (contrast) between other pairs of region categories. The results of these tests are presented in Table 4.12. In the religion-region model, the region main effects compare the mean level of volunteering in

the Prairies to each of the other four regions individually. In Table 4.12, similar sets of

Table 4.12 Tests of Regional Mean Differences in Volunteering

Reference Group	Regional Coefficients from the Religion-Region Model				
		B	S.E.	df	Sig.
Ontario	Prairies	0.576	0.095	1	0.000
	Atlantic	0.174	0.126	1	0.167
	B.C.	0.173	0.110	1	0.118
	Quebec	-0.046	0.101	1	0.650
Quebec	B.C.	0.218	0.131	1	0.095
	Prairies	0.622	0.117	1	0.000
	Atlantic	0.219	0.140	1	0.117
	Ontario	0.046	0.101	1	0.650
B.C.	Prairies	0.403	0.123	1	0.001
	Atlantic	0.001	0.150	1	0.995
	Ontario	-0.173	0.110	1	0.118
	Quebec	-0.218	0.131	1	0.095
All Regions	Prairies	0.533	0.087	1	0.000
	exp(B)	1.704			
	% Δ Odds	70.4			

Note: Exploratory sample only. Respondents age 18 and older.

coefficients compare, respectively, the Ontario rate to the others, the Quebec rate to the others and the B.C. rate to the others. By elimination, these four sets also test the Atlantic rate against all the others because comparing the Atlantic region to the Prairies, as reference group, is the same contrast as comparing the Prairies to the Atlantic region, with the latter as reference group. Only the sign of the coefficient changes.

It is clear from Table 4.12 that only the Prairie region has a significantly different mean level of volunteering when compared to the other regions. In all three panels of the table, only the contrasts involving the Prairies are significant. Among the other regions

there are no significant differences. Since this is the case, those regions can be collapsed together to form a single contrast with the Prairie. This is the last panel of Table 4.12. It is apparent that living in the Prairie provinces increases the odds of being a volunteer by about 70% compared to anywhere else in Canada.

As noted above, this result is not due to religion differences, nor to differences in how social resources are converted into volunteering. Likely explanations might look to both geography and history. The historically agrarian basis of the Prairie economy and how this shaped its development have long been a central theme in histories of the region. Out of these conditions came the first socialist governments in Canada, and the first examples of socialized service provision, such as healthcare and pension programs. A hallmark of agrarian societies is cooperation and cooperative action, and this may account for the current proclivity of Prairies residents for voluntary action.

The balance of the discussion of the religion-region model returns to the patterns of religious differences in Canada. The first interaction term in the model is between religion group and the number of organizations in which people take part. Tests of these interaction contrasts are presented in Table 4.13. In the religion-region model as originally presented, the reference group for these interactions is Protestants (reproduced in the first panel of the table). Only the Other Religion group differs significantly from the Protestants. In panels 2 and 3 of Table 4.13, it is evident that the only significant contrasts are between Other Religions and each of the other groups.

Table 4.13 Tests of Religion Interactions with Number of Organizations

Reference Group		Interaction Coefficients		
		B	df	Sig.
Protestants	Other Religion	0.240	1	0.048
	No Religion	-0.097	1	0.308
	Catholic	-0.054	1	0.533
Other religion	Protestants	-0.240	1	0.048
	Catholic	-0.294	1	0.007
	No Religion	-0.337	1	0.004
No Religion	Other Religion	0.337	1	0.004
	Protestants	0.097	1	0.308
	Catholic	0.043	1	0.587

Note: Exploratory sample only. Respondents age 18 and older.

For the social resources model this means that the number of organizations individuals belong to has a stronger positive effect for people of Other Religions than for any other religion. For the latter, participation in organizations has the same impact on the likelihood they will volunteer: each additional organization increases the odds of their volunteering by 65%. In itself this is not a small amount, but for the Other Religion group, the effect of participation in organizations is much larger at 210% ($0.502 + 0.24 = 0.742$; $\exp(.742) = 2.1$). For these individuals, participation in organizations more than doubles the odds that they will volunteer.

There is almost no research on the volunteering of religious groups that are not one of the mainstream North American faiths. Without a better idea of how these people and their religious organizations differ from the mainstream religions there is little that can be said about the findings except to note that they are quite distinct. On the other

hand, the lack of difference between No Religion, Catholic and Protestant groups indicates that the observed differences in volunteering are not due to a differential response to the tendency for participation in organizations to also lead to participation in volunteering.

The interaction effect for children 18 and older shows an intriguing pattern. Although the set of interaction terms produce a significant increase in the fit of the model ($X^2 = 12.0$, $df = 3$, $p = 0.007$), none of the interaction coefficients in the religion-region model in Table 4.11 are significant in themselves. This occurs because the four religion groups form an ordered hierarchy in this interaction. In the coding scheme used in the religion-region model, Protestants are the reference groups. As things would have it, Protestants as a group fall in the middle of this hierarchy of effects and as a result the

Table 4.14 Tests of Religion Interactions with Children 18 and over

Reference Group		Interaction Coefficients		
		B	df	Sig.
Protestants	Other Religion	0.355	1	0.150
	No Religion	-0.329	1	0.159
	Catholic	-0.358	1	0.064
Other Religion	Protestants	-0.355	1	0.150
	Catholic	-0.713	1	0.001
	No Religion	-0.684	1	0.007
No Religion	Other Religion	0.684	1	0.007
	Protestants	0.329	1	0.159
	Catholic	-0.029	1	0.886

Note: Exploratory sample only. Respondents age 18 and older.

mean differences between them and each of the other groups are not large enough to be statistically significant. Table 4.14 presents alternate coefficients based on changes in the

reference group coding scheme. In panels 2 and 3 there are two significant contrasts--- Other Religion with No Religion, and Other Religion with Catholics. Protestants are not significantly different from the Other Religion group but are borderline significant when contrasted with Catholics. Examining the sign of the coefficients clarifies the relationship among the groups. When Protestants are the reference group, the coefficient for the effect of children 18 and over is the main effect of this resource in the religion-resource model in Table 4.11. This coefficient is 0.026 and is not significant. For Protestants, children 18 and over in the household have no effect on volunteering --- the coefficient is effectively zero. Returning to the first panel in Table 4.14, the Other Religion group has a positive coefficient relative to Protestants. For this group, children 18 and over increased the likelihood of volunteering. The No Religion and Catholic groups have negative coefficients relative to Protestants, so children 18 and older reduce their probability of volunteering. Figure 4.2 summarizes these relationships graphically. The columns to the right in this figure give the interaction coefficients, the actual coefficient for each group (the main effect + interaction effect), the exponents of the actual effects, and the change in the odds associated with each effect. What is immediately apparent is that being in the middle of the distribution, Protestants are not enough different from any of the other groups for the interaction coefficients to be statistically significant when they are the reference group. Yet the Catholics and No Religion groups are sufficiently different from the Other Religion group to be statistically different. Panel 3 in Table 4.14 shows that the Catholic and No Religion groups do not differ on this effect. The final column of Figure 4.2 shows the change in the odds of volunteering produced by each child 18 and over. In the national model of volunteering this variable has a negative effect on volunteering. It

	Interaction coefficient	Actual coefficient	Exp (Actual)	% ΔOdds
Other Religions	0.355	0.381	1.464	46.4
Protestant	0.026	0.000	1.000	0.0
No Religion	-0.329	-0.303	0.739	-26.1
Catholic	-0.358	-0.332	0.718	-28.2

Figure 4.2. Structure of the Effects of Children 18 and older for Religion Groups

was suggested that this reflected the withdrawal of parents from youth-oriented volunteering as children grew older. In the religion-region model, the non-significant main effect means that this withdrawal does not happen for Protestants. Having children in this age group produces no change in their level of volunteering. If, in fact, Protestants do reduce the amount of youth-oriented volunteering they undertake once their children get older, they must be replacing that involvement with other kinds of volunteer participation. They may also simply not be withdrawing from the involvements brought on by their school-age children. If their volunteering is closely tied to their participation in a congregational community, this in itself may sustain volunteering, even when it is not prompted by the needs of children (Becker and Dhingra, 2001:317). As will be seen in differences in attendance at religious services, Protestants are much more strongly affected by participation in their religious community than are the other three groups. Given this, they are perhaps more likely to continue their involvement through the church (Jackson et. al., 1995: 67-68).

In contrast, Catholics and those with no affiliation do show a withdrawal from volunteering with children 18 and over. Together they show about a 27% drop in the odds of volunteering. If their youth-oriented volunteering is less tied to participation in a religious community and more to secular organizations, there may be less reason to maintain a volunteer commitment once children have grown up. The model cannot resolve these issues, but it does suggest that differences between Catholics and Protestants may have to do with how closely their volunteering is connected to their religious participation. The data in the NSGVP give a hint in this direction. Among Catholics with children 18 and over, 25% volunteer for at least one religious organization. By comparison, 34% of Protestants in this situation volunteer for at least one religious organization.

The reason for the high positive effect for the Other Religion group is again not immediately apparent. Individuals in this group who have children 18 and over are substantially more likely to volunteer for at least one religious organization (60%), so the effect of participation in a religious community may be even stronger in this group.

The next set of interactions involve religious attendance and begin to explain some of the differences between the two major religious groups. In this part of the model, the people with no religious affiliation are not represented by a religion by attendance interaction term. By definition, these people do not attend religious services so their score on this variable is zero. As a result, they are effectively combined with the reference group of Protestants who do not attend religious services.

The religion-region model shows that the effect of religious attendance on volunteering for Catholic and Other Religions is significantly lower than it is for

Protestants. The similar size of the Catholic and No Religion coefficients suggests that there are no differences between these groups. The effect of religious attendance for Protestants, the main effect for the religious attendance variable, is to increase the odds of volunteering by about 2.4% for every week they attend in a year. For Catholics and Other Religions, each week of attendance increases the odds of volunteering by about 1.1%. These do not seem like large differences, and for sporadic attendees they are not. However, for religiously committed individuals who attend weekly, the difference becomes quite large. For Protestants who attend weekly, the increase in the odds of volunteering is 125% (2.4×52), while for Catholics or others who attend weekly, the increase is only about 57% --- less than half that of Protestants. This reinforces the perception that Protestants, especially those who are active in their faith, find a community of participation (Schervish and Havens, 1997: 240) that involves more than just fulfilling religious obligations but also involves a whole network of family and friendship ties that facilitate participation as volunteers (Becker and Dhingra, 2001: 326-327). The effect of religious attendance as an indicator of social capital in communities of participation has been found in other research. Jackson and colleagues found that while religious attendance by itself did not have a direct effect on the probability of secular volunteering, it did increase the likelihood of participation in religious groups, which in turn increased the likelihood of volunteering in general (1995: 67-68).

The final set of interaction in the religion-region model are between education and religion. Table 4.15 shows the interaction parameters expressed in terms of three of the religion groups. Two contrasts are significant; Protestants and Other Religions are significantly different from Catholics (panels 1 and 2), and Other Religions are borderline

Table 4.15 Tests of Religion Interactions with Education

Reference Group		Interaction Coefficients		
		B	df	Sig.
Protestant				
	Other Religion	0.045	1	0.353
	No Religion	-0.042	1	0.308
	Catholic	-0.077	1	0.026
Other Religion				
	Protestant	-0.045	1	0.353
	Catholic	-0.122	1	0.005
	No Religion	-0.087	1	0.074
No Religion				
	Other Religion	0.087	1	0.074
	Protestant	0.042	1	0.308
	Catholic	-0.035	1	0.315

Note: Exploratory sample only. Respondents age 18 and older.

different from non-affiliated individuals (panel 3). The pattern of effects indicate that Protestants and Other Religions form a group where education has a larger positive coefficient than for the Catholic and No Religion groups. Since the education main effect is positive, the odds of volunteering for Protestants increases by about 11% for each additional year of education. The interaction parameters for both Catholics and No Religion are negative, so the change in the odds of volunteering is less for each additional year of education. The difference is largest for Catholics, with the result that each year of education only increases the odds of volunteering by 3% ($0.108 - 0.077 = 0.031$, $\exp = 1.031$).

The difference in the impact of education for Protestants and Other Religions on one side and Catholics and No Religion on the other is clearly dominated by the Protestant-Catholic comparison. Catholics make up 41% of the sample, with 25% No Religion, 21% Protestants and Other Religions providing the remaining 13%. The

education effect on volunteering is almost four times larger for Protestants than for Catholics. In substantive terms this means that the odds of volunteering, comparing a Protestant with 12 years of education to one with 16 years (the equivalent of a first university degree) increase by over 40%. For Catholics, the same comparison increases the odds by only 12%.

The social resources model says that the direct effects of this component of human capital on volunteering relate to three factors: the skills and capabilities education provides for effective participation, the way it acts as a signal to recruiters that an individual has these abilities, and by fostering a disposition towards participation. The different education effects for Catholics and Protestants suggests that at least one of these does not operate in the same manner for the two religious groups. It is not evident why the education of Protestants as compared to Catholics should produce either different abilities for participation, or be different signals for recruitment. However, there is one difference between the education of the two groups that might affect the disposition to participate as volunteers. The majority of Catholics live in Quebec (52%) where until recently the education system was largely controlled by the Catholic church. At the same time, in many provinces in Canada, the Catholic church has long maintained a large presence in the education of Catholic children through its parochial schools (in some provinces these were even supported by tax dollars). In contrast, among Protestants, historically there was not a single organizational entity which oversaw all strands of Protestantism. As a result the education effect may be related to differences between a Catholic education system and a mainly Protestant but secular education system. This would be particularly the case for Quebec Catholics. Other research has suggested that

one explanation for the lower levels of formal volunteering in Quebec is that in the past the Catholic Church undertook many of the roles that were the responsibility of voluntary organizations elsewhere in Canada. Quebecers thus looked to the Church to organize the functions and services that elsewhere were provided by voluntary association. The link between the role of the Church in education and the part it played in society in general may account for a different set of dispositions between Catholics and Protestants.

Summarizing the Religion-Region Model of Volunteering in Canada

The refinements to the national model represented in the religion-region model provide a range of information that improves our understanding of how social resources affect volunteering across groups, and across religion groups in particular. The findings address the question of why the two largest religion groups in Canada, Catholics and Protestants, exhibit such different levels of participation as volunteers. On one hand, there is a difference in how human capital in the form of formal education translates into participation. For Protestants, education has a much stronger effect on volunteering than for Catholics. Whether this reflects actual differences in skills and abilities, the normal interpretation of human capital, or is a function of how education acts as a signal of those skills and abilities, or how it generates a disposition towards participation, the model cannot not say. But two other components of social capital also appear to operate quite differently for Protestants and Catholic. Attendance at religious services is more likely to lead to volunteering among Protestants than Catholics, and the patterns of volunteering associated with children suggest distinct patterns of volunteering over the life-course. Both of these may be linked to the question of how the communities of participation that

congregations represent, differ between the two, and perhaps even in comparison to other religion groups.

The major conclusions to be drawn from the religion-region model are two. First, among all the kinds of group characteristics that have been demonstrated to affect volunteering, only religion and region show real differences in the model. Factors such as gender, ethnicity, marital status or immigrant status do not independently identify meaningful group differences in volunteering once the effects of social resources are accounted for. Second, the social resources model operates differently to some degree for different religions, but all of these differences are due to the way education, religious attendance, organizational participation and children act on the probability of volunteering. This finding is important because it focuses attention on how and why these particular resources should impact volunteering in different ways for different religions. The model also shows that even when religion differences are taken into account, at least one regional difference remains---the exceptionally high rate of volunteering in the Prairies. This regional difference, however, is not due to differences in the way social resources affect volunteering---the explanation of the Prairies pattern lies outside the process described by the social resource theory.

These findings can serve to guide further research, particularly on what it is about religion groups that produces the kinds of differences observed and can lead to a better understanding of how social resource are linked to religion groups.

Chapter Five

An Empirical Analysis of Volunteer Effort in Canada

Introduction

Nonprofit organizations and voluntary associations are unique in their dependency on the labour of unpaid workers in order to fulfill the operational needs of the organization and to produce the goods and services that constitute the organization's purpose. Employing individuals who are not paid in monetary terms and who undertake the activity voluntarily and so can quit at any time, creates a unique situation for these organizations. They are dependent on the effort volunteers are willing to expend in achieving the organizational goals. As Pearce (1993: 12) points out: "Since there are very few "carrots" and virtually no meaningful "sticks," the control of volunteers' actions is quite uncertain." The uncertainty that voluntary organizations face has led them, and researchers interested in this area, to look at the related questions of what kinds of people work as volunteers and what factors affect their level of commitment to providing labour for an organization. Since the members of an organization are its first source for volunteers, this led to a substantial number of studies on two related topics: who joins voluntary associations, and who volunteers to work for voluntary and other nonprofit associations and organizations. Interest in the first question is clearly related to the second because the members of associations and organizations are precisely those with the highest likelihood of being successfully recruited for volunteer work. As some have noted, for many organizations, membership brings with it an obligation to work for the organization from time to time (Wilson, 200; Sundeen, 1988).

Early attempts to explain volunteering tended to treat membership in voluntary organizations and participation as a volunteer as related aspects of participation in voluntary organizations. As early as 1972, Smith and Reddy point out that, “participation” could mean joining voluntary organizations, the number of organizations a person belongs to, or the volunteer activities undertaken by members of voluntary groups (1972: 322). Moreover, they note that even when separate measures of participation were available, they were often combined into single empirical indices of participation (1972: 324). The practice of combining separate measures of volunteering into a single index of commitment continues today. In the initial application of the social resources model, for example, Wilson and Musick combine the number of types of organizations volunteered for in the past year and the hours spent doing volunteer work into a single factor they call a “volunteering construct” (1997). The emphasis on participation as a generalized measure of a volunteer’s commitment to volunteer activities has resulted in general lack of attention to the separate components of participation. Instead, the typical approach, both theoretically and empirically, has been to treat the question of who does and does not volunteer, and the question of how much effort individuals devote to volunteer activities as simply two ways of measuring participation. One consequence of this strategy has been a distinct lack of theoretical and empirical attention to volunteer effort as separate from the question of who is and is not a volunteer, or who does and does not join voluntary organizations. The research undertaken in this chapter is an attempt to remedy this situation by developing and testing a theoretical model of volunteer effort in Canada that has as its ultimate outcome the hours individuals devote to volunteer activities each year. To provide some context to the

analysis, Table 5.1 presents the distribution of hours volunteered for the exploratory sample on which the models are estimated.

Table 5.1 Hours Volunteered in Canada, 2000

Commitment of Time					
Volunteer Up to:	1 hour/month	1 hour/week	2 hours/week	4 hours/week	5+ hours/week
hours per year:	1-12	13-52	53-104	105-208	209 plus
% of volunteers	19.4	23.7	17.4	18.1	21.3
Cumulative %	19.4	43.1	60.5	78.7	100.0
Average Annual Hours	156.8				
Exploratory sample only					

As a group, volunteers in Canada devote a not insignificant amount of time each week to unpaid work for voluntary organizations. The average volunteer, for example, spends about three hours per week working at these activities. Nonetheless, almost half of all volunteers work one hour per week or less, and about 20% work one hour per month or less. For one-fifth of volunteers, then, the time they spend working as volunteers hardly amounts to more than a day and a half of regular paid work. Among those at the lower end of the hours volunteered, the time involved each week is not likely to impinge substantial on other demands for their time and effort. At the high end of the distribution, however, the volunteers are working at least five hours each week. Among these volunteers, other demands on their time and effort may have a significant impact on their willingness or ability to maintain this level of effort. Since so many volunteers spend relatively little time per week at this work, the effect of other demands on their time that would constrain their volunteer efforts may not be a large factor in the model of volunteer effort.

The model of volunteer effort begins with the same assumption that others make when analyzing hours volunteered, namely that the same theory, in this case the social resources theory, that accounts for whether or not a person volunteers, also accounts for the hours they volunteer. This strategy is followed because there is no theory that identifies how the processes involved in each type of behaviour should be different. Lacking a theory, the analysis starts with the same set of explanatory variables as were used in the explanation of the likelihood of being a volunteer. The decision to volunteer and the decision about how many hours to volunteer are clearly related---a person can hardly choose to become a volunteer without also choosing to volunteer some time. Thus the factors that bear on the decision to volunteer should also impact the amount of time that is volunteered. However, because volunteering can involve as little as one hour worked or as much as a full-time job, the impact of social resources on time volunteered may be different than in the case of the decision to simply devote some time to volunteering. Previous research where the same variables have been used to account for both aspects of volunteering suggest there will be important differences (Sundeen, 1988: 566; Day and Devlin, 1996: 45). While the hours volunteered is the ultimate dependent variable in the analysis, it is not treated in isolation but is seen as part of a larger interconnected process, defined as volunteer effort, that includes the length of time individuals have been volunteering, the number of organizations they volunteer for, and the diversity of activities they undertake as volunteers. The model developed and tested here examines the impact of social resources on all four components of volunteer effort.

Although the question of who volunteers has received considerable empirical attention in the United States and to a lesser degree also in Canada, the related and

equally important question of what factors influence the amount of effort people put into volunteering has received only cursory attention. This represents a substantial gap in our knowledge of volunteers and volunteering. This second analytical section of the dissertation will describe the patterns of effort among volunteers and will develop and test a structural model of the determinants of volunteer effort. It is worth pointing out that the terms 'effort' and 'commitment' are used interchangeably but are not intended to be evaluations of the volunteers willingness to devote time to volunteering but rather the extent to which they do so, given the constraints they face and the resources they have at hand. Obviously, some of the variation in hours volunteered relates to a volunteer's willingness to forego other activities, and to their satisfaction with past volunteer experiences, but the meaning of effort in this analysis goes no further than indicating the time and resources they apply to volunteer work.

Once the national model has been developed, it is used to examine the question of gender differences in volunteer effort as a way to show how the model, and the structural equation techniques in Lisrel, can be used to examine group differences in the model of effort, and because there is substantial uncertainty in the literature over whether or not there are gender differences in volunteering. The gender analysis accomplishes both these tasks.

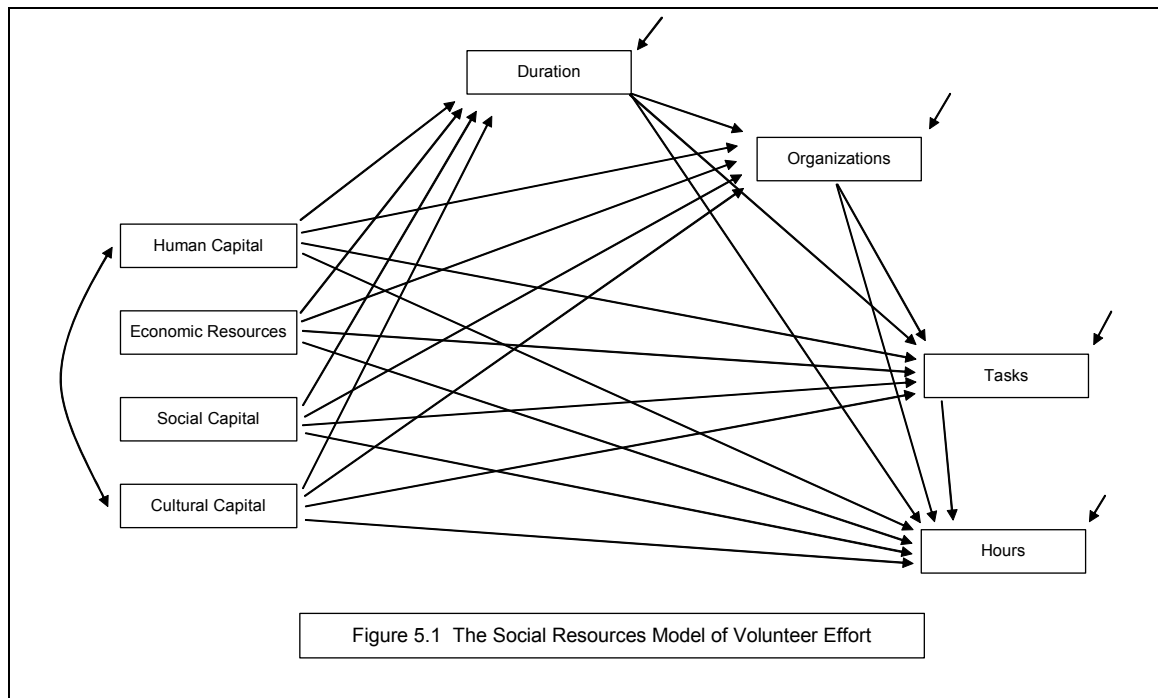
Research on Volunteer Effort

Perhaps the only clear theoretical framework in this area involves the application of utility maximization models taken from the economic literature. Under such a model, the number of hours rational agents will devote to volunteering is inversely related to the

opportunity cost of their time, as measured by their human capital and earning power. In limited application, this model has proven useful in accounting for some of the variation in hours volunteered, but the evidence for it is neither extensive nor compelling (Steinberg, 1997: 184). Freeman's study of volunteers in the USA, for example, supports the opportunity cost hypothesis, but in regression models that only account for between 2 and 6 percent of the variation in hours volunteered. As Freeman himself concludes, the opportunity cost model is of limited use in explaining the effort of volunteers (1997:S165).

Among the theories of volunteering, there are none that would suggest that the set of factors that determine volunteer effort are entirely different from those that determine the likelihood of being a volunteer. As a starting point, this analysis will adopt the same strategy: the social resources theory will be used to account for the hours individuals volunteer. However, the empirical model used in the analysis is more elaborate than most research on volunteer effort in terms of the structure among the endogenous variables, and less elaborate in terms of the structure among the independent variables. The structural model includes the causal relationships between the four identified components of volunteer effort: duration as a volunteer, number of organizations volunteered for, the diversity of tasks undertaken as a volunteer and the number of hours devoted to volunteering. On the social resources side of the model, the interdependencies among the four components of the model are left unanalysed. That is, the model does not estimate causal relationships among the social resource variables. These are allowed to freely correlate. Rather than analysing the connections among the social resource variables, the focus of investigation is the relationships among the components of volunteer effort and

the connections between these and the indicators of social resources. As a starting point, it is hypothesized that all social resources affect all four measures of volunteer effort. Since this is the first application of the model in this form, the analytical process is one of model generation rather than model confirmation. In effect, the central question is: does the social resources model represent a useful explanation of volunteer effort? Part of this process involves identifying which paths in the theoretical model that connect various social resources to volunteer effort are found in its empirical application. The other important part of the model involves the relationships among the components of volunteer effort. Nowhere in the literature has an attempt been made to estimate the connections between different aspects of effort. In fact, it has often been the case that analyses of volunteer effort are hampered by a failure to identify these four components. Most studies focus only on hours as the endogenous variable, so there is no examination of how the other three components of participation will affect the number of hours a person will volunteer in total. A fair amount of research has focused on explaining hours volunteered, and to a lesser extent on the number of organizations volunteered for, but there is much less research on the length of time volunteered, and virtually no research on the diversity of tasks volunteers undertake. The research that has been done typically examines only one of these components and does not use the others to explain the one under consideration. There is no research that examines the possible relationship among the four measures of effort as a group. As a consequence none of this research constitutes complete coverage of the relationships hypothesized to connect the four components of effort in Figure 5.1.



One part of the volunteer effort model that has received some attention is the connection between the number of organizations in which a person participates and the number of hours they spend volunteering. As expected, the more organizations individuals volunteer for, the more hours they volunteer (Sokolowski, 1996: 271). In a roundabout way, the research Wilson and Musick did in first presenting the social resources model also shows that number of organizations and hours spent volunteering are strongly and positively related. In that research they did not examine a possible causal relationship between organizations and hours. Instead, they used the two as indicators of an underlying factor they called the “volunteer construct”. The tests of the model show that the underlying factor has a strong positive effect on both indicators (Wilson and Musick, 1997: 705). Other than these studies, there is little information on how the

components of effort are interconnected. There is substantially more research that shows how social resources impact various aspects of volunteer effort, and the findings from these will be discussed when the paths in the social resources model of effort are examined in detail.

Additional Variables in the Analysis of Volunteer Effort

The four variables used to measure the four components of volunteer effort, and most of the variables used to measure social resources are identical to those used in the analysis of the likelihood of volunteering. There are some differences, with one independent variable re-defined and three additional independent variables added to the analysis. Because the analysis of volunteer effort focuses only on those who had volunteered over the previous year, it is possible to take advantage of information in the survey that is available only for volunteers. Employing these data improves one existing variable and adds three more independent variables that measure additional dimensions of social resources.

The first variable affected by the change in the unit of analysis is the number of types of organizations in which the respondent was a member or participant. In the previous analysis, this measure excludes the organizations in which a respondent acted as a volunteer because the purpose of the analysis was to predict who would be a volunteer. Counting organizations in which a respondent volunteered, even if only by type, would in effect use being a volunteer to predict being a volunteer. In the model of volunteer effort, where all the respondents are volunteers, this variable is recoded to include the types of organizations represented by volunteering that are not already represented by

participation in some other way. The new variable represents the range of types of organizations respondents were members of, participated in, or volunteered for. This variable does not count the number of organizations a person participated in, but the number of types of organizations. The number of types of organizations in which an individual participates is taken to be a measure of both the size and diversity of the social networks a person is involved in. In this context, it is reasonable to consider volunteering as participation in a given type. To exclude volunteering as a form of participation would artificially reduce the apparent diversity of participation types for people who participate only in organizations for which they also volunteer. For example, people who volunteered for three different types of organizations but participated in no other organizations would be scored zero for their diversity of organizational participation, while a respondent who participated in three types of organization but volunteered for none of them would receive a score of three for diversity of participation. A more accurate measure of the diversity of types would score these two as participating in three types. Since this variable is taken to reflect the diversity of organizations participated in, and thus the diversity of their network ties, it is more accurate to also include the diversity represented by the organizations volunteered for. This redefinition does increase the correlation between the organizations participated in (the independent variable) and the number volunteered for (the endogenous variable), from 0.264 to 0.428, but it is evident that the new version is not simply a proxy for the number of organizations volunteered for. More importantly, the re-definition does not involve any of the other aspects of volunteer effort, but as a more accurate measure of diversity should have a more realistic effect on these variables.

To create the new version of the number of organizations participated in, the type of organization volunteered for was collapsed into the seven categories of the type participated in. If the respondent had volunteered for a type of organization that was not already counted as a type in which they participated, then that type was added to the count of types. The new variable thus counts the number of types of organization in which a respondent participated in any way. For example, if a respondent had volunteered for a sport or recreation organization and had been a member or otherwise participated in another sport or recreation organization, the number of types participated in does not change. However, if the respondent did not participate in a sport or recreation organization but had volunteered for an organization of this type, the range of types participated in would increase by one type. The mean and range of this variable is shown in Table 5.3, along with its correlation with the effort variables.

A second variable that can be used in the analysis of volunteer effort is based on the amount of help respondents received from their employers, either in the form of being able to adjust paid work hours or use work time or facilities for volunteer purposes. The three forms of assistance were (1) approval for the use of facilities or equipment at work, (2) taking time off or using work time to do volunteer work, and (3) changing work hours to spend time on volunteer activities. Assistance from an employer is a resource in the sense that it affects the time available for volunteer activities (discretionary time) or the physical resources a volunteer brings to the organization. These resources would be expected to facilitate higher levels of participation on the part of volunteers, and may make them more attractive as recruits for voluntary organizations.

This variable was created by summing the affirmative responses to the three instances of assistance, with those who received no support from their employer and those who were not in the labour force, assigned a score of zero. The mean, range and correlation of this measure with the endogenous variables are shown in Table 5.3.

In their formulation of the social resources model, Wilson and Musick argue that cultural capital is a constellation of values and attitudes that represent a “culture of benevolence” that gives meaning to the activities volunteers take part in (1997a: 697). It is also suggested that these attitudes and values reflect a world-view that is represented by a number of factors that involve socialization or commitment to the culture of benevolence. Because it examines only volunteers, the analysis adds two variables to the list of indicators of cultural capital resources. These are, first, the degree to which the individual’s volunteering involves a recognition of an immediate, practical goal or benefit that is derived from their volunteer activities, and second, the expression of a generalized concern for the well-being of others. These variables are labelled self-oriented and other-oriented values respectively. Along with the other measures of cultural capital, these are taken to reflect an individual’s level of commitment to the culture of benevolence.

In the NSGVP, volunteers were asked to agree or disagree to a set of seven questions about the reasons they volunteered. Three of these questions are expressions of some degree of commitment to caring and compassion for others, while the other four more directly relate to personal benefits or goals realized through volunteer activities. The three other-oriented reasons are (1) volunteering to help a cause, (2) volunteering because they had been personally affected or knew someone who had been personally affected by the cause the organization supports, and (3) volunteering to fulfill religious

obligations or beliefs. The positive responses to these three were summed to create the other-oriented variable which ranges zero, for those who agreed with none of the three reasons, to three for those who agreed with all of them.

This variable is not assumed to represent an underlying dimension that might be described as altruism, although it is very similar to a measure Sokolowski calls altruism (1996: 268). The three items in the other-oriented variable do not form an internally consistent scale in that they have a very low reliability ($\alpha = 0.320$). Instead this measure simply indexes the number of other-oriented reasons respondents gave for their volunteering. It shows an awareness that their volunteering has a component that represents caring for, or a concern with, the well-being of others. This will strongly correlate with altruistic attitudes, but the questions are not specific enough to be taken as direct measures of this attitude. This variable taps related dimensions of the culture of benevolence in the sense of a general concern with helping others.

The four questions that represent types of self-oriented goals that can be achieved through volunteering were (1) volunteering because friends do, (2) volunteering to improve job opportunities, (3) volunteering to explore personal strengths, and (4) volunteering to use skills and experience. This combination of reasons is similar to two measures Sokolowski describes as self-improvement and utilitarian motives, although his measures are based on substantially more distinct reasons for volunteering (Sokolowski, 1996: 268-269). As with the other-oriented variable, the self-oriented measure is not taken to represent an underlying unidimensional scale of self-interest (its scale reliability

Table 5.2 Means, Ranges and Correlations Among Variables in the Analysis of Volunteer Effort

Effort Variables as Independent Variables	mean	range	Correlations with Dependent Effort Variables			
			Dur	Ln # orgs	Ln # of Tasks	Ln Hours
Duration as a Volunteer	6.62	0.5 13.5		0.294 **	0.243 **	0.329 **
Ln # Organizations Volunteered For	0.37	0.0 2.7			0.463 **	0.425 **
Ln # of Tasks Undertaken	1.06	0.0 2.6				0.434 **
Ln Hours Volunteers	4.09	0 8.1				
Independent Social Resource Variables						
Human Capital Resources						
Education	13.60	6.0 18.0	-0.042	0.136 **	0.141 **	0.036
Age	43.86	18.0 89.0	0.399 **	0.049 *	0.009	0.147 **
Health Status	3.78	1.0 5.0	-0.077 **	0.056 *	0.032	0.010
Economic Resources						
Log Household Income	10.86	8.7 13.1	0.008	0.124 **	0.077 **	-0.041
% Household Income	57.20	0.0 100.0	0.072 **	-0.038	0.017	0.060 *
Hourly Pay	10.82	0.0 97.5	-0.020	0.048 *	0.048 *	-0.047 *
Work Hours	25.27	0.0 112.0	-0.019	0.033	0.042	-0.088 **
Help from Employer	0.48	0.0 3.0	-0.066 **	0.123 **	0.162 **	0.045
Social Capital Resources						
# Organization Types	2.25	0.0 7.0	0.193 **	0.495 **	0.347 **	0.226 **
# Socializing	112.41	0.0 208.0	-0.029	0.120 **	0.109 **	0.081 **
# Helping Types	4.13	0.0 10.0	0.059 *	0.173 **	0.286 **	0.100 **
Youth Experience	2.05	0.0 4.0	0.073 **	0.210 **	0.225 **	0.090 **
#Voting	2.21	0.0 3.0	0.219 **	0.104 **	0.064 **	0.104 **
Religious Attendance	16.90	0.0 52.0	0.218 **	0.131 **	0.095 **	0.160 **
Years Resident	9.77	0.5 13.0	0.320 **	0.068 **	0.028	0.076 **
Children 0-5	0.18	0.0 2.0	-0.096 **	-0.005	-0.055 *	-0.075 **
Children 6-12	0.31	0.0 2.0	-0.011	0.075 **	0.026	0.027
Children 13-15	0.16	0.0 2.0	0.076 **	0.101 **	0.121 **	0.068 **
Children 16-17	0.08	0.0 2.0	0.113 **	0.060 **	0.062 **	0.034
Children 18+	0.17	0.0 2.0	0.146 **	0.057 *	0.051 *	-0.006
Household Size	3.14	1.0 11.0	-0.037	0.093 **	0.079 **	-0.009
Cultural Capital Resources						
Religiosity	2.67	1.0 4.0	0.159 **	0.087 **	0.071 **	0.101 **
Youth Exposure	2.98	0.0 5.0	0.023	0.195 **	0.241 **	0.069 **
Satisfaction with Life	2.51	1.0 3.0	0.052 *	0.083 **	0.023	0.069 **
Control in Life	3.17	2.0 4.0	0.008	0.038	0.023	0.047 *
News Following	3.51	1.0 4.0	0.143 **	0.086 **	0.041	0.072 **
Self Oriented	1.84	0.0 4.0	-0.050 *	0.039	0.121 **	0.082 **
Altruistic	1.89	0.0 3.0	0.150 **	0.116 **	0.145 **	0.067 **

* p > 0.05 ** p > 0.01

is low, $\alpha = 0.433$), but is simply a count of self-oriented reasons given for volunteering. These two variables do not measure opposing attitudes for volunteering since a respondent can score high or low on both; in fact, their correlation is moderate at $r = 0.214$ in the exploratory sample. Each is taken to represent how aware volunteers are of the self and other oriented reasons that are part of their volunteering. The means, ranges and correlations of these variables are presented in Table 5.3.

Evaluating the Fit of the National Model of Volunteer Effort

The model generation process begins with a recursive saturated model that includes paths estimated for the effects of prior measures of volunteer effort on subsequent measures of effort, and with paths estimated for the impact of all social resource variables on each of the four measures of volunteer effort. Since this model places no restrictions on the parameters in the model, it reproduces the observed covariance matrix perfectly and thus the measure of lack of fit, the minimum fit function X^2 , is equal to zero. This model is substantively uninteresting, but it does represent the baseline model from which a more parsimonious model can be developed. In successive steps, the non-significant paths, based on the modification indices for each parameter, are removed from the model one at a time. At each step the model is re-estimated and the fit of the model is re-evaluated. This process continues until all non-significant effects have been removed from the model. The results of the fit tests for this model are presented in Table 5.3. According to the test of whether or not the models perfectly reproduces the observed covariance matrix, the model does not fit the data: the probability that the

difference between the estimated and observed covariance matrices is zero, within the

Table 5.3 Fit Statistics for the National Model of Volunteer Effort

Minimum Fit Function	$\chi^2 = 59.09$	df = 31	p < 0.002
Root Mean Square Error of Approximation (RMSEA)	0.024		
P-Value for the Test of Close Fit (H_0 : RMSEA < 0.05)	p = 1.0		
Adjusted Goodness of Fit Index (AGFI)	0.979		
Comparative Fit Index (CFI)	0.995		
Standardized Root Mean Square Residual (SRMR)	0.012		

limits of probability theory, is less than 0.002. However, as noted earlier, rarely are these models expected to reproduce perfectly the population model and thus a number of additional fit indices are used to evaluate how close the model is to the population model. The first of these, the RMSEA, is less than 0.05 which indicates a close fit to the data, and the test of the hypothesis that the RMSEA is less than 0.05 cannot be rejected. The second index, the AGFI, evaluates how much better the model estimates the observed matrix compared to a model with no parameters. The AGFI ranges from 0 to 1.0, with higher values indicating better fit and values over 0.90 indicating close fit. The same is true of the comparative fit index. In both cases, the fit indices in Table 5.3 show that the model provides a close fit to the sample data. The standardized root mean square residual shows that the average residual from the comparison of the estimated and observed covariance matrices is quite small --- values less than 0.08 are considered acceptable (Tabachnick and Fidell, 2001: 702). For all these ways of evaluating the model, it appears to provide a reasonably good fit to the observed covariance matrix.

It is desirable when working with Lisrel models to cross-validate the findings for models generated with the exploratory sample by fitting the model to both the exploratory and confirmatory samples at the same time. Introducing equality constraints in all the path parameters across the two samples produces a test of the fit of the model created in the exploratory sample to the covariance matrix for the confirmatory sample. The global minimum fit function X^2 for this test is 176.39 with 89 degrees of freedom which gives a probability of less than 0.001. In terms of perfect fit in the population, the equal regression hypothesis across the two samples does not fit very well. However, as noted in Chapter Three, a more useful evaluation of the equal regression hypothesis is the root mean square error of approximation (Joreskog, 2002:53), which in this case equals 0.023 with a probability of 1.0 of being less than the critical value of 0.05. Thus the cross-validation tests suggests that the model developed from the exploratory sample is a close fit for the data in the confirmatory sample. In fact, the confirmatory sample is responsible for 41% of the lack of fit in the equal regression model while the exploratory sample is responsible for 59% of the lack of fit. In other words, the model fits the confirmatory sample better than it does the exploratory sample from which it was constructed. The parameter estimates in the discussion that follows are based on the model estimated on the exploratory sample only.

Interpreting the National Model of Volunteer Effort

Both the tests of fit and the cross-validation lend support to the conclusion that the national model is a fairly good approximation to the process generating volunteer effort as it exists in Canada. This model will be analysed in detail, even though we will

eventually propose and analyse models that apply to subgroups of volunteers, because it is the first ever example of a model volunteer effort for Canada and thus provides a baseline against which to evaluate future research. In addition to its statistical quality, it is also important to evaluate the model in terms of how useful it is as a substantive picture of volunteer effort. One way to assess this is the variation in the endogenous variables that is accounted for by the model. Although R^2 must be treated as specific to the data and thus is not comparable across data files (Duncan 1967: 65), it does give some indication of how well the model works as a description of volunteer effort in this data.

The model of volunteer effort accounts for about 30% of the variation in the total hours volunteered annually (Table 5.4). Taken in combination, the prior measures of effort and the social resources variables account for about 30% of the variation in hours volunteered. This is substantially more than is typically the case in research on hours volunteered. Even with a large number of socio-demographic background variables, Day and Devlin (1996: 45-47) are able to account for between 4 and 5 percent of hours volunteered using the 1987 VAS data. Research in the USA typically produces models that account for between 4 and 15 percent of the variation in hours volunteered (Jackson et al, 1995: 67; Wilson and Musick, 1998: 808; Freeman, 1997: 153). Granted that these studies include none of the endogenous measures of volunteer effort that are in the Canadian model, but even when the explained variation is restricted to that due to the social resources alone, the reduced form model accounts for 9% of the variation in hours volunteered. The difference between the variation explained by the structural equations and that explained by the reduced form equations is due to the effect of error terms in the

equations for the prior measures of effort but this does not invalidate the finding that the

Table 5.4 Raw Coefficients (Direct Effects) for the Social Resources Model of Total Hours Volunteered Annually.

Independent Variables		Dependent Variables			
		Duration	Ln N Orgs	Ln Tasks	Ln Total Hours
Volunteer Effort	Duration	--	0.025	0.019	0.064
			0.002	0.003	0.007
	Log Number of Organizations	--	--	0.491	0.704
				0.034	0.075
Human Capital Resources	Log Tasks	--	--	--	0.601
					0.052
	Education	--	--	0.024	--
				0.007	--
Human Capital Resources	Age	0.103	--	--	--
		0.008			--
	Health Status	--	--	--	--
					--
Economic Resources	Log Household Income	--	--	--	--
	% Household Income	--	--	--	--
	Hourly Pay	--	--	--	--
	Work Hours	--	--	--	-0.005
Economic Resources					0.002
	Help from Employer	--	0.025	0.044	--
			0.012	0.016	--
					--
Social Capital Resources	# Organization Types	0.484	0.159	0.044	--
		0.092	0.010	0.016	--
	# Socializing	--	--	--	--
	# Helping Types	0.132	0.020	0.043	--
Social Capital Resources		0.045	0.005	0.007	--
	Youth Experience	--	--	0.046	--
				0.014	--
	#Voting	--	--	--	--
Social Capital Resources	Religious Attendance	0.021	--	--	--
		0.005			--
	Years Resident	0.159	--	--	--
		0.025			--
Social Capital Resources	Children 0-5	--	--	-0.070	--
				0.033	--
	Children 6-12	--	--	--	--
	Children 13-15	--	--	--	--
Social Capital Resources	Children 16-17	--	--	--	--
	Children 18+	--	--	--	--
	Household Size	--	0.035	0.024	-0.071
			0.008	0.011	0.023
Cultural Capital Resources	Religiosity	--	--	--	--
	Youth Exposure	--	--	--	--
	Satisfaction with Life	--	--	--	--
	Control in Life	--	--	--	--
Cultural Capital Resources	News Following	--	--	--	--
	Self Oriented	--	--	0.061	0.103
				0.015	0.032
	Altruistic	0.425	--	--	--
Cultural Capital Resources		0.153			--
					--
					--
					--
Squared Multiple Correlation for Structural Equations					
		0.232	0.266	0.305	0.298
Squared Multiple Correlation for Reduced Form Equations					
		0.232	0.225	0.184	0.093

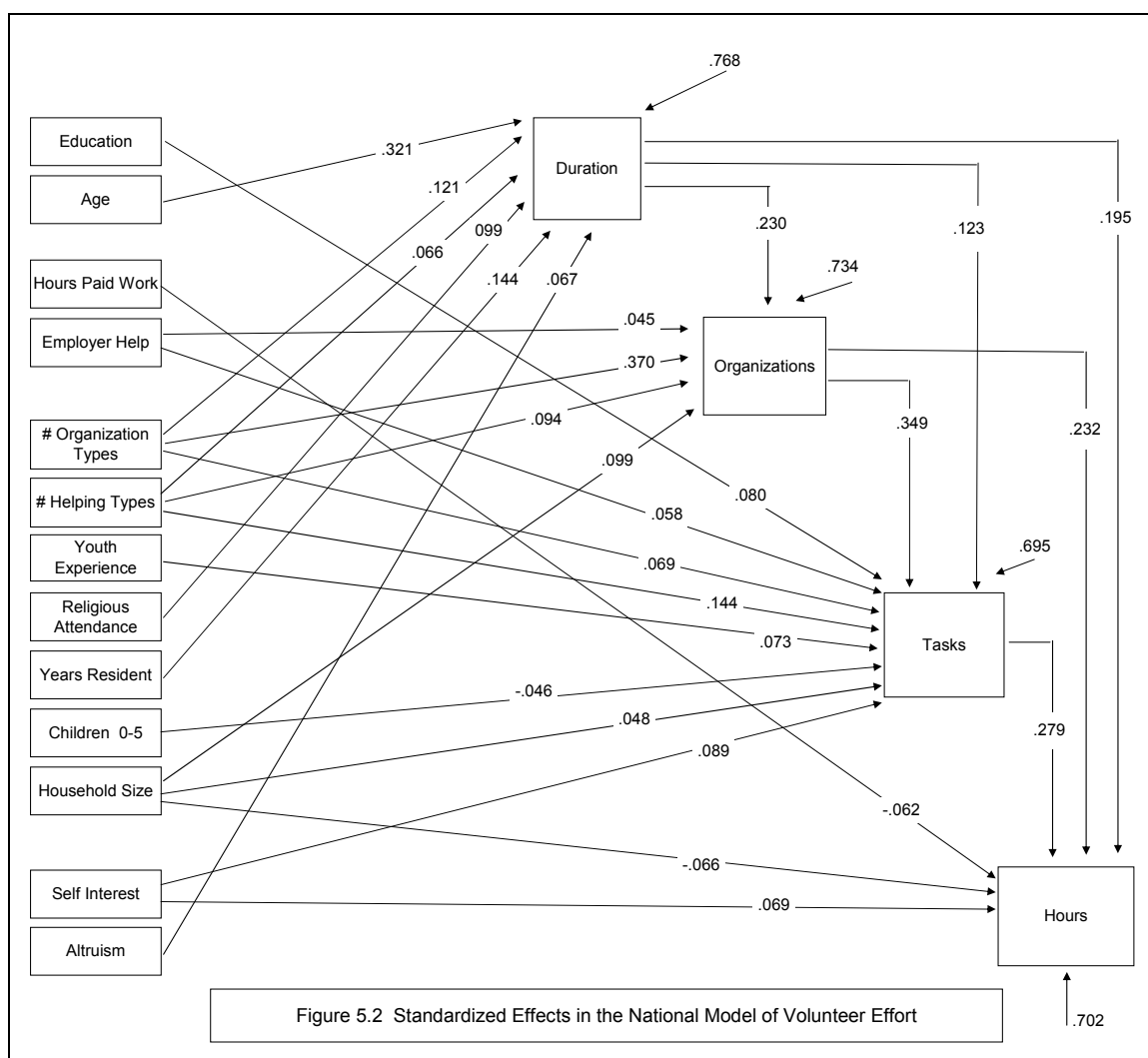
Cell entries are the raw coefficients and the standard errors for each parameter

Table 5.5 Standardized Direct, Indirect and Total Effects of Social Resources on Volunteer Effort

Independent Variables		Dependent Variables			
Volunteer Effort	Effect	Duration	Ln N Orgs	Ln Tasks	Ln Total Hours
Duration	Direct	--	0.230	0.123	0.195
	Indirect	--	--	0.080	0.110
	Total	--	0.230	0.203	0.305
Log Number of Organizations	Direct	--	--	0.349	0.232
	Indirect	--	--	--	0.097
	Total	--	--	0.349	0.329
Log Tasks	Direct	--	--	--	0.279
	Indirect	--	--	--	--
	Total	--	--	--	0.279
Human Capital Resources					
Education	Direct	--	--	0.080	--
	Indirect	--	--	--	0.022
	Total	--	--	0.080	0.022
Age	Direct	0.321	--	--	--
	Indirect	--	0.074	0.065	0.098
	Total	0.321	0.074	0.065	0.098
Health Status	Direct	--	--	--	--
Economic Resources					
Work Hours	Direct	--	--	--	-0.062
	Indirect	--	--	--	--
	Total	--	--	--	-0.062
Help from Employer	Direct	--	0.045	0.058	--
	Indirect	--	--	0.016	0.031
	Total	--	0.045	0.074	0.031
Social Capital Resources					
# Organization Types	Direct	0.121	0.370	0.069	--
	Indirect	--	0.028	0.154	0.178
	Total	0.121	0.398	0.223	0.178
# Helping Types	Direct	0.066	0.094	0.144	--
	Indirect	--	0.015	0.046	0.091
	Total	0.066	0.109	0.190	0.091
Youth Experience	Direct	--	--	0.073	--
	Indirect	--	--	--	0.020
	Total	--	--	0.073	0.020
Religious Attendance	Direct	0.099	--	--	--
	Indirect	--	0.023	0.020	0.030
	Total	0.099	0.023	0.020	0.030
Years Resident	Direct	0.144	--	--	--
	Indirect	--	0.033	0.029	0.044
	Total	0.144	0.033	0.029	0.044
Children 0-5	Direct	--	--	-0.046	--
	Indirect	--	--	--	-0.013
	Total	--	--	-0.046	-0.013
Household Size	Direct	--	0.099	0.048	-0.066
	Indirect	--	--	0.035	0.046
	Total	--	0.099	0.082	-0.020
Cultural Capital Resources					
Self Oriented	Direct	--	--	0.089	0.069
	Indirect	--	--	--	0.025
	Total	--	--	0.089	0.094
Altruistic	Direct	0.067	--	--	--
	Indirect	--	0.015	0.014	0.020
	Total	0.067	0.015	0.014	0.020

Dashes indicate paths that are not significant

combination of social resources and a specification of the structure of volunteer effort provides a much enhanced explanation of hours volunteered. Table 5.4 presents the unstandardized path coefficients for this model and Table 5.5 shows the standardized direct, indirect, and total effects. Figure 5.2 presents the path model of volunteer effort.



Effects of Effort on Hours Volunteered

Among the three prior measures of volunteer effort, the number of types of tasks performed over the previous year has the strongest direct effect on hours volunteered (0.279). This indicates that an increase of one standard deviation in the (log) number of task types produces about a 0.28 standard deviation change in the (log) hours volunteered. By comparison, the (log) number of organizations increases hours by about 0.23 standard deviations and duration increases hours by 0.20 standard deviations. However, as Table 5.5 shows, among the total effects of the effort variables on hours volunteered, the number of organizations has the largest overall impact on hours (0.320), followed by duration as a volunteer (0.305) and then number of tasks (0.279). These three effects, in terms of standard deviation unit changes in hours volunteered are not very different. Changes in any of the three priors produces about the same size change in the hours a person volunteers.

Thus volunteer effort when measured by the hours an individual devotes to volunteering is, not surprisingly, responsive to the number of organizations for which people volunteer, the diversity of tasks they perform for these organizations, and how long they have been a volunteer. The positive effect of the number organizations volunteered for will in part reflect the fact that if a person volunteers for more than one organization, they must devote time to both organizations. As the number of organizations increases, the number of hours must also increase. The positive effect of the diversity of tasks undertaken may also reflect this kind of situation. When a person undertakes more than one type of task, they will typically also have to devote more hours to their volunteering. However, both number of organizations and diversity of tasks in

themselves indicate a more diverse range of involvement in volunteering in general. In both cases, the broader the range of participation, the more time people will devote to volunteering activities.

Hours volunteered also increase as the length of time a person has been a volunteer increases. Pearce suggests that individuals, when they begin volunteering for a particular organization, go through a trial period where they “try-out” both the work and the organization. Rather than committing in advance to a set amount of time and effort, they go through an initial period of testing the waters before they make a more enduring commitment (Pearce, 1993: 159). If this is the case, then we would expect volunteers to initially devote relatively few hours to volunteering, but once the decision to commit to a particular organization is made, the hours they are willing to devote will increase. This commitment to the organization increases continually over time.

Effects of Effort on the Diversity of Tasks

The number of tasks individuals will undertake in the span of a year increases as both duration as a volunteer and number of organizations volunteered for increase. The positive effect the number of organizations has on the number of tasks undertaken is a natural consequence of the fact that organizations are different and individuals are unlikely to be involved with two organizations that are structured identically, or are involved in providing the same services. Thus those who volunteer for more than one organization are more likely to face a wider range of available tasks and a different mix of labour requirements. The differences between organizations are likely to result in a

broader range of distinct tasks being available to the volunteer (Smith and Reddy, 1972: 323-324).

Those who have volunteered for a longer time also tend to undertake a wider range of tasks than do short duration volunteers. This agrees with previous findings that tasks done increases as the length of time an individual has volunteered for an organization increases (Barkan, Cohn and Whitaker, 1995: 129; Phillips, Little and Goodine, 2002: 5). It might seem that if recently recruited volunteers are in a try-out stage in the organization, as Pearce argues above, they would tend to try out various types of work available to them and would thus tend to undertake a wider range of tasks than would those who have been members of the organization for a while and have settled on limited set of work tasks. There may be some validity to this supposition, but the distinction Pearce makes between the roles of core and peripheral organization members suggests otherwise. Core organization members are those who typically show a greater level of commitment to the everyday functioning of the organization. They undertake more of the administrative and managerial tasks required for the day to day operation of the organization, including serving in formally defined positions, on committees and on boards of directors, in addition to helping with routine jobs. In contrast, peripheral members are those who, although they are steady and reliable contributors to the labour needs of the organization, are less involved in the doings of the organization, whether due to limits on their available time or due to less inclination to be more involved (Pearce, 1993: 48). Thus core members are those who take more responsibility for all the needs of the organization and thus would tend to undertake a greater diversity of tasks as a volunteer. This distinction between a core membership who tend to take on more work

than the peripheral membership is also central to Oliver's distinction between the contribution of active and token members of local community action groups (1984: 601). It is the active members who often undertake more responsibility for getting the work done because these core members are aware, as her title suggests, that "if you don't do it, nobody else will."

The distinction between core and peripheral members of organizations quite possibly accounts for many of the connections between the components of volunteer effort and in particular, is probably best represented by the duration an individual remains a volunteer with an organization. Core members will tend to have been volunteers in an organization for longer than peripheral members, and because they are more committed to the organization in the long-term, core members will undertake more tasks. All of which leads to more time devoted to volunteering. While it may be that all four components of volunteer effort describe the difference between active and passive organization members, this characteristic cannot be identified in the NSGVP data with any certainty. The questions that ascertain what tasks individuals do as volunteers would provide this information except that the questions are not specific to a particular organization, nor is the volunteer's time allocated among these tasks. Lacking these details, it is not possible to identify volunteers who undertake more tasks and devote more hours to various types of tasks for a particular organization. It is possible to identify what tasks a volunteer did for one organization if that was the only organization they volunteered for, but for the 40% of volunteers who worked for two or more organizations, it is not known which tasks were done for what organization. Moreover,

identifying core volunteers would also require some indication of how much time was devoted to each task in each organization and this is not known for any volunteers.

Effects of Effort on the Number of Organizations Volunteered For

As the length of time a person has been a volunteer increases, the number of organizations volunteered for, the number of tasks undertaken and the hours volunteered all increase. Duration as a volunteer is determined by how long individuals have been volunteering for one of the organizations currently volunteered for, rather than how long they have been volunteering in general. Duration thus represents a commitment to a particular organization and in line with the notion of there being core and peripheral organization members, it would be expected that core members would tend to undertake a wider range of tasks and to devote more hours to these activities. But the positive effect of duration on the number of organizations for which an individual volunteers also suggests that these people in general have a greater commitment to volunteering in their lives. As Dekker and Halman point out, once people assume the role of volunteer, they often feel an obligation to both the organization and the other volunteers to continue their commitments (2003: 5). This may also extend to their willingness to become involved with more than one organization.

The effect of duration on the other components of effort again brings in the supply and demand dimensions of volunteering. Being involved long term in one organization develops both the organizational skills and dispositions that enable volunteers to expand their involvement to other organizations. But it may also mean that being a long duration

volunteer increases the individual's desirability as a volunteer and increases the likelihood of being actively recruited by other organizations.

As a first attempt to connect the four aspects of volunteer effort, the path model in Figure 5.2 presents no surprises. But that in itself is reason to believe that the four components form a single coherent model of volunteer effort. More research is required to validate this structural component of the volunteer effort model, but it does provide a first attempt that on face value is a consistent account of how the four aspects of effort are related. In terms of future research, the main need is for data that will clearly establish the temporal order of the measures of effort, but the results from the cross-sectional analysis present no results that contradict the model as specified. There is also a need for data that more specifically describes the volunteer history of individuals who participate in multiple organizations in order to more clearly establish the link between organizations, tasks and hours volunteered.

Social Resources and Volunteer Effort

The intent in applying the social resources theory is to evaluate how well it accounts for volunteer effort. The fit of the model and the amount of variation in effort it accounts for provides statistical evidence that the social resources model is a fairly good representation of the dynamic that underlies volunteer effort. But its usefulness also depends on its substantive content---how reasonable are the substantive conclusions that can be drawn from the empirical model. The following sections examine the impact of social resources on volunteer effort. One goal in this section is to evaluate the findings from the model in light of previous research on effort, particularly on hours devoted to

volunteering, since this the component of effort has received the most extensive attention in the literature.

As a whole, the social resources model of volunteer effort provides a significant degree of explanatory power for the four components of volunteer effort, as indicated by the explained variance for the effort variables. As Table 5.4 shows, each of the four types of social resources are represented by variables that have a significant impact on volunteer effort. In this sense, then, the social resources theory does provide a broad account of effort, and is a useful theoretical model of volunteer effort. But it is also in examining the specific social resources that are either in the model or excluded from it, and what parts of effort they affect, that a better understanding of the connection between social resources and effort is gained.

Human Capital and Volunteer Effort.

Human capital reflects the skills and physical abilities people have as resources for participation in volunteering as work. Two of the three measures of human capital, education and age, have a significant impact on effort in Canada, while the third, health status, does not.

The absence of the health variable from this model is contrary to previous findings, both for Canada and elsewhere. For Canada, for example, in their study of hours volunteered based on the 1987 Volunteer Activity Study, Day and Devlin found that those who say they are in good health tend to volunteer more hours than those in poorer health (1996: 45). Similarly, Wilson and Musick find that health status has a positive effect on a measure that combines hours volunteered with the number of types of

organizations volunteered for (1997: 797). However, in other research they also find that changes in functional health over time did not cause people to stop volunteering (Wilson and Musick, 1999: 260). And in a third analysis, they find that the significant positive effect of health on hours volunteered disappears when social capital resources, such as the frequency of interaction with friends and family, participation in voluntary organizations and attendance at religious services, are included in the model (Musick, Wilson and Bynum, 2000: 1552). This last result suggests that variations in hours volunteered associated with health status are due to differences in social capital factors. Since the Canadian model includes a number of measures of social capital, it supports the interpretation that the health effect is mediated by these types of social capital variables. Thus poor health does not cause individuals to devote less effort to volunteering, but rather it reduces the level and types of participation in social networks, including religious attendance. This reduced level of participation in social networks in turn results in less volunteering and less volunteer effort. These effects are not identified in the models Wilson and Musick estimate, nor in the Canadian model estimated here, because in both models health is not treated as a possible cause of variations in social capital (Wilson and Musick, 1999: 210). Where a significant health effect is found, the measures of social capital in the model are limited to the number of children in the household. Thus, if health status has an impact on volunteer effort in Canada, it is entirely an indirect effect that is mediated by social capital variables.

The two human capital variables that do have an impact on volunteer effort are interesting more for the way they affect effort, than for the fact that they do so. Previous

research consistently finds that these two, education and age, are important determinants of all aspects of volunteer effort (Wilson, 2000: 219-220).

Education has a direct positive effect on the diversity of tasks performed for organizations, and through this, an indirect effect on hours volunteered. As Figure 5.2 shows, this is the only way education affects effort. Those with more education tend to undertake a wider range of tasks as volunteers and thereby also tend to devote more hours to volunteering. In the literature, the positive effect of education on volunteer hours is usually attributed to a combination of factors assumed to be associated with level of education. These include the assertion that higher levels of education produce greater access to voluntary organizations, greater interpersonal and organizational skills, greater self-confidence and social competence (Payne, Payne and Reddy, 1972: 215-216; Wilson, 2000: 219-220) and creates a sense of civic responsibility (Wilson and Musick, 1997b: 256). It is also argued that education is a major indicator of dominant status and thus represents a higher propensity to participation and a greater chance of being recruited by organizations (Smith, 1994: 246-249). The fact that education directly affects only the number of tasks undertaken raises some doubt about the accuracy of some of these supposed connections between education and volunteer effort. If people with higher levels of education actually have a greater propensity to volunteer or are more likely to be recruited to volunteering, we would expect to find a connection between education and the number of organizations volunteered for. Yet the model shows that education does not affect either the duration of volunteering nor the number of organizations. There is ample evidence that the likelihood of being a member of a voluntary organization increases with education (McPherson, 1981; McPherson and

Rotolo, 1996), as does the likelihood of being a member of multiple organizations (Curtis, 1971: 875). The analysis in the previous chapter also shows that the chance of being a volunteer increases with level of education. The greater propensity to join organizations and to volunteer does not, however, translate into an increased tendency to volunteer over time nor to volunteer for multiple organizations. Instead, those with more education tend to undertake a wider range of tasks for the organizations they participate in, and as a consequence, tend to devote more hours to volunteering by doing so. This suggests that the aspect of education that is at work may be related to the skills and perhaps other social competencies that individuals acquire through education. That the educated are more likely to join multiple organizations but not more likely to volunteer for multiple organizations tends to question the dominant status argument that the educated are more prone to be recruited to volunteering. If this were the case, it would result in a tendency to volunteer for more than one organization. This is not the case, so the increased effort associated with higher education takes the form of the volunteer taking part in a wider range of activities than others do. Part of this may indicate a general willingness to invest more time in volunteering, but it may also indicate having the skills required to undertake diverse types of tasks, those involving leadership and management positions, and those associated with the kinds of experience gained through labour force participation are also associated with higher levels of education. This also means that the effort devoted to volunteering in the form of hours increases with the level of education, but only indirectly. As education rises, the diversity of tasks undertaken increases, and this tends to increase the hours a person will devote to volunteering each

year. However, once the diversity of tasks is controlled for, education does not increase the other three components of effort.

Table 5.6 Mean Duration as a Volunteer by Age Group

Age Group	Mean	Standard Error of Mean	Confidence Interval	
			Lower Bound	Upper Bound
18-24	3.5	0.17	3.2	3.8
25-34	4.3	0.15	4.0	4.6
35-44	6.3	0.14	6.0	6.6
45-54	8.0	0.17	7.6	8.3
55-64	8.1	0.23	7.7	8.6
65 and Over	9.6	0.23	9.2	10.1
Total	6.6	0.08	6.5	6.8

The second human capital variable that effects volunteer effort is age. Unlike education, age increases all aspects of effort although its only direct effect is on the length of time people have currently been volunteers. Its indirect effects on the other measures of effort are all positive. The fact that older people are more likely to have been volunteers for longer periods of time would at first glance seem to be a natural consequence of the fact that they are older and have more chance of being in the highest duration category of ten or more years with one organization. The pattern of mean duration by age group in Table 5.6 does not indicate that duration steadily increases with age. As the boundaries of the confidence intervals show, the increase in duration from one age group to the next is significant at younger ages but from ages 45 to 64, duration does not increase. This pattern suggests that the opportunity to be a long-term volunteer is not simply a function of being older. If it was, duration would increase steadily with age. Instead, the pattern is one where the duration rises at younger ages and flattens out

after age 45. This trend is exactly what would be expected if the pattern of joining and leaving voluntary organizations by age was the same in Canada as it is in the United States. Rotolo found that younger people tend to join and leave organizations in a relatively short time span, which would lead to short durations as a volunteer. As people get older, they join fewer organizations but at the same time the rate at which they leave organizations declines---they tend to maintain some of the memberships they have established (Rotolo, 2000: 1155). This would increase their durations, not as a function of age but as a result of settling on long-term attachments to fewer organizations. For those over age 65, the increase in attachment to an organization may be the Canadian version of the “long civic generation” that Goss identifies in her study of older Americans (1999: 379).

It was suggested that age represents life-skills that are gained through life-experience itself. This would mean that older people, having more life-skills, will be more comfortable in organizational settings, will be able to perform a wider variety of tasks and will be more attractive as skilled recruits. The absence of impacts on the other aspects of effort tends to question this interpretation however. Older people do tend to volunteer for more organizations, to do more tasks, and to volunteer more hours, but this is only because they have been volunteers longer. Rather than life-skills gained through life-experience in general, it may be that it is precisely experience gained as a volunteer for an organization that improves skills. Long-term volunteers may be the core members of the organization and thus show a general willingness to do more for the organization (Pearce, 1993: 10).

Economic Resources and Volunteer Effort

The economic resources in the social resources model that have a significant effect on volunteer effort are limited to the number of hours worked for pay in the regular labour force, and the extent of assistance received from an employer. The three economic resources that bear directly on the relevance of the some economic models of hours volunteered do not affect effort, including household income, personal wage-rate and percent of household income.

In the literature it has been suggested that the number of hours worked in the paid labour force is a major limitation on the discretionary time available for individuals to devote to activities like volunteering (Wandersman et al., 1987: 548; Brady, Verba and Schlozman, 1995: 274; Vaillencourt, 1998: 817). The negative effect for hours worked in the structural model for Canada agrees with this interpretation; the more hours spent in paid labour each week, the fewer the hours that are devoted to volunteering. While this finding supports the discretionary time interpretation, it contradicts the research that suggests there might actually be a positive relationship between paid labour and hours volunteered (Wilson, 2000: 220-221). Instead, the model agrees with previous findings for Canada (Day and Devlin, 1990: 45) and elsewhere that hours volunteered decline as paid hours rise (Sundeen, 1988: 564; Freeman, 1997: S151). The validity of the time constraint interpretation is reinforced by the fact that hours worked does not affect any of the other components of volunteer effort. Working more paid hours does not reduce duration as a volunteer, number of organizations, nor the number of tasks undertaken. It appears that as hours in paid work increase people simply reduce the hours they devote to volunteering without necessarily stopping their volunteer work, reducing the number of

organizations they work for or limiting the number of tasks they perform. The overall effect of greater participation in the regular labour force is only to reduce the time they can make available to voluntary organizations, not necessarily their willingness to participate in these organizations.

The only other economic resource that has an effect on volunteer effort is the extent of assistance that volunteer receive from their employers. About 40% of employed volunteers received help from their employers (which amounts to one-quarter of all volunteers) in the form of the use of equipment or facilities, time off or time at work for volunteer activities, or permission to change their work hours to accommodate volunteer activities. This type of assistance has two effects on volunteer effort; it increases the number of organizations people will volunteer for and it increases the number of tasks they undertake. Since two of the three types of assistance represent the ability to accommodate work hours with volunteer hours, the first effect probably indicates that assistance reduces the time constraint paid work would impose if not for the ability to adjust work hours and thus makes possible volunteering for more than one organization (Luffman, 2003: 10). However, being able to use work facilities and having flexible work hours may also make a person more attractive to organizations and thus increases the likelihood of being recruited by more than one organization. Receiving assistance from an employer also directly affects the number of tasks a volunteer will undertake. Apparently, being able to adjust work hours or use work time or facilities and equipment increases the range of tasks a volunteer can accomplish. Tasks that would normally interfere with work hours, or require equipment or facilities that are not available in the organization, can be undertaken by volunteers with this type of assistance. In either case,

flexible work schedules and access to equipment and facilities increase the effort people are able to put into volunteer activities.

Three economic resources do not have any effect on volunteer effort in this specification of the social resources model. These are household income and the two measures of opportunity cost, personal cost (wage-rate) and household cost (personal income as a percentage of household income). The absence of these factors in the Canadian model has important implications for two themes that often appear in explanations of volunteering. On one hand, the absence of an income effect calls into question both the discretionary resources and dominant status interpretations of how income affects volunteering. On the other hand, the absence of the opportunity cost measures contradicts the opportunity cost hypothesis in models of the volunteer labour process.

The essence of the opportunity cost hypothesis is that the hours devoted to volunteering should be inversely related to the income that is foregone by substituting unpaid volunteer work for potentially paid hours in the regular labour force. In standard economic models, opportunity cost is often measured by an individual's personal wage-rate. Each hour devoted to unpaid volunteer work is thus worth what the individual could have earned if he or she devoted that time to paid employment. The personal wage-rate variable in the Canadian model has no effect of any aspect of volunteer effort, although admittedly, the economic models predict only an effect on hours, not the other components of the effort model. Moreover, the cost of foregone earning is borne not just by the individual but by the household as well, and a way to assess this opportunity cost is the amount of household income that is foregone when time is devoted to volunteering.

This can be measured by the individual's personal income as a proportion of household income (percent household income). The larger this proportion, the greater the impact on household income of earning foregone because of volunteering. This form of the opportunity cost hypothesis is also not supported by the Canadian model. Neither individual nor household opportunity costs appear to affect the amount of effort people will devote to volunteering. These results call into question the relevance of the opportunity cost hypothesis for understanding volunteering, and contradict the empirical tests of this hypothesis that find a strong negative wage-rate effect for hours volunteered (Menchik and Weisbrod, 1987: 175). But the opportunity cost hypothesis is not the only part of the economic models that is not supported by the findings in the Canadian model. The economic models also predict that there should be a positive effect of household income on hours volunteered. If volunteering is a standard consumption good, then those with higher income should "purchase" more of that good than those with lower income (Menchik and Weisbrod, 1987:161). If, on the other hand, volunteering is an investment in human capital similar to on-the-job training, then there will also be a positive income effect but only if the cost of borrowing money to finance the training period, if necessary, is high enough that the current cost of borrowing is greater than the discounted future returns to the increased human capital. In other word, under normal (imperfect) capital markets, only those who are wealthy can finance the acquisition of human capital by working as an unpaid volunteer, so the income effect should be positive (Menchik and Weisbrod, 1987: 167). Under either assumption about the nature of volunteering, the positive income effect does not appear in the Canadian model.

It is not only in the economic models that income is thought to have a positive effect on hours volunteered, it is also hypothesized by the dominant status model to have a positive effect on volunteering. The nature of this effect has several forms. At its most basic level, income is simply a measure of an individual's ability to bear any direct monetary costs associated with volunteering (Sundeen and Raskoff, 1995: 384; Sundeen, 1988: 548). The absence of the income effect contradicts the idea that the costs of volunteering in some way dissuade those with lower incomes from participation.

In a more complex formulation, income is also an indicator of socio-economic status, and as such is a central variable in the dominant status explanation of volunteering (Smith, 1994: 248-249; Sokolowski, 1996: 269). In this model, high status individuals devote more effort to volunteering because they have a greater stake in the community, have greater social skills and are more likely to be recruited by voluntary organizations (Wilson and Musick, 1998: 800-801). In both the economic models and the more general social models, including the dominant status model, family income should have a positive effect on volunteer effort. Among the economic models, for example, Menchik and Weisbrod (1987: 175) find a positive income effect on hours volunteered, as does Freeman (1997: S153). Intriguingly, with other data, Freeman finds that the income effect is negative, although not significant (1997: S152). Among the social models, Janoski and Wilson (1995: 282) find that how active individuals were in voluntary organizations was positively related to both current household income and income nine years earlier. Similarly, Wilson and Musick (1998: 807) find that household income increases both the number of organizations volunteered for and the hours volunteered, although only the latter effect is statistically significant. These findings support the expectation that income

will have a positive effect on volunteer effort. However, the results in the Canadian model run contrary to this expectation. Household income has no effect on any component of volunteer effort. This finding is not entirely inconsistent since other research either finds no income effect, or actually finds a negative relationship where effort declines as household income rises (Sundeen, 1988: 564; Day and Devlin 1996: 45). Musick, Wilson and Bynum (2000: 1553), for example, find a negative effect where the highest income groups have the lowest hours volunteered and hours increase as income declines, with the exception of the very lowest income group who are slightly lower than the middle income groups.

These contradictory results are interesting since they may reflect real differences through time and across data files, or they may be differences that arise as a consequence of the models estimated and the variables included in the models. Two results bear on this question, particularly in the context of the Canadian model which includes social capital measures as part of the explanation of volunteer effort. In a study of hours volunteered, Sokolowski first estimates a baseline model that contains gender, education, income, along with three motivation variables. In this model, income has a positive effect on hours volunteered. However, when three social capital variables are entered in the model, including religious attendance, organization memberships, and having been asked to volunteer, the income variable becomes non-significant (1996: 270). If we accept that the social capital variables are more likely consequences rather than causes of income level, then Sokolowski's findings suggest that social capital variables are intervening variables in the process and mediate the income effect on hours volunteered. Income may have a direct effect on the social capital an individual possesses and in turn this has a direct

effect on volunteering. This possibility is supported by other research that finds that income has a direct effect on the level of social participation in general (as measured by organization memberships and political activity) which in turn has a positive effect on volunteer participation (Janoski, Musick and Wilson, 1998: 513). Because the Canadian model includes several social capital variables that measure social participation, the absence of an income effect may be the result of including these variables in the model.

It is difficult to test for this situation in the Canadian model because it would require treating the social capital variables as endogenous variables that are affected by the economic resource variables. As noted earlier, the social capital variables do not represent strongly related measures of one or even two underlying constructs that could be labelled “social capital” and thus cannot easily be incorporated in such a model. Instead of treating the social capital indicators as observed endogenous variables, a second strategy is simply to determine if the economic resource variables have an impact on various of the social capital measures individually. Each of the seven social capital variables that appear in the Canadian model of volunteer effort in Table 5.4 were treated as dependent variables and regressed on the human capital and economic resource variables. If income has a significant direct effect on any of the social capital variables, then it will have an indirect effect on volunteer effort through these variables, much in the manner of the two studies described above. The results of these regressions, shown in Table 5.7, indicate that income does have a significant effect on five of the seven social capital variables. Cross-validation tests on the confirmatory sample corroborate these results.

In four of the five cases where income has a significant effect on a social capital variable, the effect is positive. Only its effect on attendance at religious services is negative. This would result in an indirect effect on volunteer effort that is negative, but all the other effects would result in indirect effects that are positive. The two regressions

Table 5.7 Regression of Social Capital Variables on Human Capital and Economic Resources
(Ordinary least squares)

Independent Variables	Social Capital Indicators as Dependent Variables						
	# Organization Types	# Helping Types	Youth Experience	Religious Attendance	Years Resident	Children 0-5	Household Size
	standardized regression coefficients						
Education	0.152 *	0.020	0.217 *	0.036	-0.115 *	0.050 *	-0.077 *
Age	0.159 *	-0.110 *	0.046	0.222 *	0.353 *	-0.236 *	-0.251 *
Work Hours	-0.012	0.001	0.009	-0.089 *	0.021	0.000	0.073 *
Help from Employer	0.140 *	0.109 *	0.073 *	-0.045	0.006	-0.044	0.010
% Household Income	0.053	-0.032	0.007	-0.093 *	-0.111	-0.005	-0.199 *
Hourly Pay	-0.022	-0.051	-0.032	0.019	0.066	-0.008	-0.014
Log Household Income	0.120 *	0.011	0.060 *	-0.068 *	0.062 *	0.024	0.232 *
R ²	0.078 *	0.027 *	0.058 *	0.076 *	0.123 *	0.059 *	0.239 *

* p < 0.05

Note: Exploratory sample only, N= 1851

that have the largest R², years resident and household size, have significant positive income effects so the overall effect of income on volunteering would be positive if the social capital variables were used to measure a single underlying social capital construct. Thus income could have a significant positive effect on volunteer effort in models that do not include the social capital variables. This supports the finding noted above where income directly affects social participation variables, and only affects volunteering through these intermediate variables (Janoski, Musick and Wilson, 1998: 513). This also suggests that the research that finds a positive direct effect of income on volunteer effort, does so because it does not account for these types of social capital variables. This is largely true of the models based strictly on an analysis of economic and demographic

characteristics. There are examples of models of volunteer hours that do include some social capital variables (Wilson and Musick, 1998: 808; Musick, Wilson and Bynum, 2000: 1553), but in neither case are measures that relate to household size, number of children or length of residence included in these models. Since these are where income has its strongest positive effect, not including these in the models may not entirely remove the direct positive effect of income.

These regressions cast additional light on the opportunity cost hypothesis in the economic models. The failure to find an effect of personal opportunity cost on volunteer hours may also be due to social capital factors acting as intervening variables for this effect. In other words, as opportunity cost rises, the time devoted to various forms of social participation, represented by the social capital variables, becomes more costly, and rational economic actors would tend to reduce their levels of social participation and thus their levels of volunteer participation. The direct measure of opportunity cost, hourly pay, is not significant in any of the seven regressions, so even in this modified test, the standard version of the opportunity cost hypothesis is definitely not supported. However, in two of the seven equations, the household version of the opportunity cost measure does affect a social capital variable and does have the expected negative effect. It has a negative effect on participation at religious services and would, in the Canadian model, have a negative indirect effect on duration as a volunteer. It also has a negative effect on household size, and this would translate into a negative indirect effect on the number of organizations individuals volunteer for, and on the number of tasks they undertake, findings that are consistent with the opportunity cost hypothesis. However, household size has a negative effect on hours volunteered, so household opportunity cost would

actually have a positive indirect effect on hours volunteered. The effect of household opportunity cost on religious attendance does make sense empirically but its effect on household size does not fit neatly into the idea that it is an intervening variable between opportunity cost and volunteer effort. Household size largely measures the total number of children in the household ages six and older and it is very unlikely that the number of children over six currently at home is responsive to current opportunity cost in any fashion. In fact, the actual situation is probably the exact opposite. Even when the social capital variables are treated as endogenous indicators of social capital, the indirect effect of household opportunity cost on volunteer effort is still unclear. However, these findings do suggest that there may be value in treating opportunity cost as a characteristic of the household, because personal opportunity cost does not affect volunteer effort, even indirectly.

Taken together, the evidence from the Canadian model and the subsequent tests of economic resources show that household income and personal opportunity cost do not directly affect volunteer effort. Income may have an indirect positive effect through the social capital variables, but this in itself questions the income interpretation. Income does not facilitate volunteering by making it more affordable, by providing better social or civic skills, or by making people the target of recruitment. At most, individuals with higher income tend to participate in more voluntary organizations and have larger and more diverse social networks, all of which tend to increase various aspects of volunteer effort. In addition, personal opportunity cost clearly does not affect volunteer effort, either directly or indirectly. There is some evidence that the household version of

opportunity cost may affect volunteering indirectly, but even then the evidence is tenuous and clearly requires more research.

While the model rejects a direct connection between income and volunteer effort, it must be acknowledged that income is not a very efficient proxy for social status. As a result, the absence of income as a predictor of volunteer effort is not a wholesale rejection of the dominant status theory. It does however, show that ideas such as dominant status need to be operationalized with much more precision than has generally been the case if specific testable hypotheses about this theory are to be adequately evaluated. Certainly, simply using income as a proxy for status, let alone dominant status is an inadequate research strategy.

Social Capital and Volunteer effort

Social capital, as it is conceptualized in this study, derives mainly from the various social networks in which respondents are involved. The basic assertion is that networks embody social capital in the form of reciprocal obligations and expectations that both encourage participation and increase exposure to being recruited to volunteering, in the form of greater awareness of the need for and opportunity to participate as volunteers, and create norms of reciprocity that encourage prosocial behaviour in general. In theory, how these factors influence the likelihood of participation in voluntary organizations and as volunteers in particular, is fairly clear, but it is much less clear how they should affect the effort people can or will devote to volunteer activities, once they decide to participate. As McAdam and Paulsen point out, researchers "...have demonstrated a strong association between social ties and activism, but have

largely failed to account for the relationship theoretically” (1993: 645). Unfortunately, their theoretical elaboration again focuses on the connection between social ties and the recruitment of organization members rather than on the determinants of levels of activism specifically. Nor does the empirical research literature provide much guidance in this area since there is little research that deals with any aspect of volunteer effort other than hours volunteered. In short, there is little research or theory that describes how social capital would be expected to affect how long individuals will work as volunteers (duration), how many organizations they will tend to volunteer for, or how many tasks they will undertake, largely because these aspects of volunteer participation are rarely operationalized as parts of volunteer effort. In their study of attachment to the volunteer labour force, for example, Wilson and Musick note that there is almost no research on the question of how social resources actually contribute to this form of volunteer effort (1999: 248). There is some research that is relevant for one or other of the four components of effort, but none that encompasses all four as related parts of volunteer participation. Moreover, much of this research focuses less on volunteering for voluntary organizations than on the broader issue of membership in them. As a result, the discussion that follows is a first attempt to understand how social capital affects levels of volunteer effort and is less firmly grounded in previous research than would ordinarily be the case. The intent is mainly to document the connections found in the model of effort and to offer some interpretation of how the measures of social capital come to have the effects they do on each component of effort. This will provide a better understanding of the social process that underpins volunteering and will lead to further theoretical elaboration of the connections between social capital and volunteer effort in the future.

Even when the research literature focuses on hours volunteered or levels of active participation in organizations, there is generally only rudimentary theoretical explanations or expectations about how social capital should affect this component of volunteer effort. In a study of levels of participation, measured by tasks undertaken in a national anti-hunger organization, for example, the authors acknowledge that strong ties among members of the organization should increase the level of participation by inducing people to be active in order to conform to the expectations of network and organizational intimates (Barkan, Cohn and Whitaker, 1995: 120). This is clearly the operation of the obligations and expectations that develop in networks. Jackson et al., (1995: 72-75) also argue that the strong network ties that develop through active participation in religious organizations foster group norms that encourage greater levels of participation. Others echo the argument that social ties influence effort mainly through the way they foster what Sokolowski calls philanthropic attitudes and activities (1996: 264-265). But none of these studies actually identify separate aspects of effort rather than just looking at increased participation.

There is also substantial research on how social ties promote joining voluntary organizations, on how long people remain members of organizations, and on how many organizations they tend to join, but these do not directly deal with the time and effort volunteers devoted to the organizations (Wright and Hyman, 1958; McPherson, 1981; Aulander and Litwin, 1988; McPherson, Popielarz and Drobnic, 1992). The findings from these studies, however, can provide some clues to how social ties may increase various aspects of effort because being a member of an organization often entails at least

some volunteer activities and certainly increases “exposure” to recruitment for volunteer work.

Overall, seven of the thirteen variables used to measure social capital have a significant impact on various components of volunteer effort, but only one, household size, has a direct effect on hours volunteered, and this effect is negative (Table 5.5). The various components of social capital are not important direct determinants of how many hours people devote to volunteering, but instead are important mainly for the effects they have on the other components of volunteering. This finding in itself represents an improved understanding of how social capital affects volunteer effort---it does so not simply by encouraging volunteers to give more time to volunteer work but rather in the way it affects how long they volunteer, how many organizations they volunteer for, and the number of types of tasks they work at as volunteers.

The first aspect of social capital that affects volunteer effort is the number of organizations a person either is a member of or participates in (including as a volunteer). This variable is taken to represent the appropriable social organizations individuals are involved in and thus the diversity of their social networks and is one indicator of the weak ties that connect them to people beyond their circle of close friends and family (Granovetter, 1973: 1375). Wider participation in organizations has three effects on volunteer effort. It increases the duration of volunteering, the number of organizations volunteered for and the number of tasks undertaken, but it does not directly affect the hours devoted to volunteering.

The first of these effects is not what would be expected if participation in a wide range of organizations represents the diversity of social networks and the extent of weak

ties. Weak ties should provide individuals with a broader range of information about opportunities to volunteer and should expose them to a greater likelihood of being recruited by other organizations. Both of these factors should reduce the length of time individuals remain with a particular organization, and concomitantly the length of time they volunteer for any particular organization (McPherson, Popielarz and Drobnic, 1992: 157-158). On average, then, people with more extensive weak ties represented by participation in multiple organizations should have shorter durations as volunteers for any one organization. This is not the case, as the path diagram in Figure 5.2 shows, those involved in a more diverse range of organizations tend to remain volunteers for longer spells. Part of this outcome may be due to the fact that it is not possible to determine how extensive are the strong ties that might exist within the organizations for which individuals volunteer. While membership or participation in multiple organizations will correlate with the extent of weak ties an individual maintains, active participation in these organizations also tends to create strong ties within the organizations, and strong ties would tend to increase the duration of participation in an organization (McPherson, Popielarz and Drobnic, 1992:158). Active participation within an organization, including being a volunteer, quite likely creates strong ties among those in the organization. The tendency for weak ties to draw people out of organizations may then be offset by the tendency of strong ties to encourage persistence as a volunteer through time. As others have pointed out, the lack of information on the strength of ties to others, both within and between organizations, makes it difficult to clearly identify how network connections actually affect volunteer effort (Wilson and Musick, 1998: 803-804).

The range of organizations a person participates in also affects the number of organizations they actually volunteer for. This is consistent with previous research that finds that participation in a diversity of organizations is among the strongest predictors of the number of organizations volunteered for (Wilson and Musick, 1998: 808).

This reflects the fact that the wider the range of participation, the greater is both the exposure to opportunities to volunteer and its corollary, the chances of being recruited to act as a volunteer. As noted earlier, because the variable measuring participation in organization types includes the types volunteered for, this effect should be stronger than when it does not include volunteer activities. However, as discussed earlier, this variable does not count the number of organizations volunteered for but rather the number of types of organizations in which volunteers participate. Only if an organization for which they volunteered represented one of the seven organization types, and they did not participate in any way in another organization of that type, does the new variable count an instance of volunteering as participation in a given type. This variable represents the diversity of types of organizations in which people participate and thus is taken to measure the diversity of their social networks. From this point of view it is legitimate to include organizations volunteered for. It is not surprising, then, that this variable has the strongest standardized effect of the number of organizations a person actually performs volunteer work for. However, since other independent variables also affect the number of organizations volunteered for, it is evident that organizations participated in is not simply a different version of the dependent variable.

Organizational diversity also has a direct effect on the number of tasks individuals undertake as volunteers. The impact of diverse participation on the tasks undertaken may

simply indicate that the more organizations individuals participate in, the more organizations they are likely to be active in as volunteers, and this means they will be exposed to a broader range of available tasks. These may be the “core volunteers” who are generally more willing to fill a variety of work roles for an organization (Pearce, 1993: 47-48). On the other hand, participation in voluntary organizations can actually develop the civic and organizational skills that facilitate increased participation (Brady, Verba and Schlozman, 1995: 273). In this case, participation in a variety of types of organizations may develop a wider range of skills that in turn would enable volunteers to undertake a wider range of tasks than would be possible otherwise.

The second social capital measure that affects volunteer effort is the number of types of direct helping activities individuals take part in. This measure, it is argued, represents the extent of strong ties people tend to develop in their social networks. This factor directly affects the first three components of volunteer effort, but has no direct effect on hours volunteered. The way this variable affects volunteer effort overall is consistent with the interpretation that it reflects the respondents’ tendency to form strong ties with those they interact with. It is reasonable to assume that those who tend to form a wide range of strong ties within their primary networks through direct helping behaviours, are also more likely to form strong ties among others in the organizations in which they volunteer. If this is the case, then the obligations and expectations that are formed by strong ties will increase the likelihood these volunteers will remain active participants in the organizations in which they volunteer for longer spells than those who form fewer strong ties. Certainly, it is the case that the strong ties that develop over time

within an organization tend to increase the duration of membership in that organization (McPherson, Popielarz and Drobnic, 1992: 156).

Those with a broad range of strong ties that extend beyond the boundaries of a particular organization will also be exposed to more recruitment by intimates in other organizations and this shows in the tendency for those with extensive strong ties to be active as volunteers in more than one organization. Those with more extensive strong ties also undertake more tasks in the organizations they work for. This is probably a consequence of strong ties within organizations that enforce obligations to take part in the organization as core rather than simply peripheral members (Pearce, 1993: 48).

Another social capital variable that has been previously found to influence volunteer effort is experience as a youth in voluntary organizations (Wilson and Janoski, 1995: 148). This factor also has a positive effect on effort in the Canadian model. The variable measures the exposure a person had as a youth to a variety of youth-oriented organizations and is assumed to indicate the respondents' possible socialization into the norms and obligations associated with cooperative and organizational behaviour. This measure has a direct effect only on the number of tasks individuals undertake as volunteers. If participation in youth organizations makes people more aware of, or responsive to, the norms of cooperation in an organizational setting, it is not surprising that they would be more likely to do a greater diversity of tasks for the organization. This effect may also indicate facility with a greater diversity of tasks, particularly tasks involving administrative, leadership or managerial kinds of positions. In this case, participation in organizations as a youth has the same effect as participation as an adult in

a diversity of organizations---it is a source of skills that increase the range of participation a volunteer undertakes.

Attendance at religious services is the next social capital measure that affects volunteer effort. As an appropriable social organization, a religious community or congregation represents an important source of social capital and regular attendance is taken to represent the level of involvement in this unique type of social network. The effect of religious attendance on volunteer effort is to increase the length of time people tend to be active as volunteers. Net of this effect on duration, religious attendance does not increase the number of organizations volunteered for, the tasks done or the hours volunteered. This result is similar to Wilson and Musick's finding that frequent attendance at religious services reduced attrition from the volunteer labour force (1999: 262).

Active participation in a community of faith, as reflected by regular religious attendance, encourages people to maintain their volunteer activities over time. In large part this is likely due to the connection that exists between their social networks and their congregation. As Becker and Dhingra found, next to education, having a congregation member in one's network of friends was the strongest positive predictor of the likelihood of volunteering for any type of organization among regular religious attendees (2001: 325). They conclude that the effect of regular attendance for volunteering works through social networks that centre on the congregation. They also find that among those who are active members of a congregation, having a network that includes other members of the congregation tends to increase their participation in volunteer activities and in volunteer activities that are directly connected to their congregation (2001: 327). Since these

voluntary organizations are likely to have a direct connection to their congregations, remaining an active part of the congregation also implies remaining an active volunteer (Cnaan, Kasternakis and Wineberg, 1993: 36-37; Sherket and Ellison, 1999: 376-377). Wilson and Janoski (1995: 149-150) also suggest that active participation in a congregation encourages volunteering, particularly among conservative Protestant denominations, but this mainly takes the form of volunteering for church-maintenance organizations. As Skerket and Ellison suggest, religious groups not only foster volunteering, but also actively encourage prosocial behaviour in general and may be a specific avenue for generating social capital for many groups in society (1999: 374-377). The Canadian data support this conclusion. Among those who attend religious services three or four time per year, about 6% had volunteered longest for an organizations directly affiliated with a religious congregation. Among those who attend services monthly, 15% had volunteered longest for a religious organization, but among those who attended weekly, fully 45% had volunteered longest for a religious organization. These figures for regular attendees probably underestimate the actual proportion who volunteer for organizations that have close ties to a religious congregation since many of these would not be classified as religious organizations under the ICNPO classification in NSGVP 2000. Religion-sponsored youth and community service organizations, for example, are classified by the “field of service” rather than as religious organizations.

These results suggest that regular religious attendance is associated with strong network ties in religion-based voluntary organizations and these ties tend to increase the duration of both organizational membership and volunteer activities (Jackson et al., 1995: 67). And this effect is not due to the association between religious attendance and the

individual's commitment to religious beliefs. The Canadian model tested and rejected the measure of religiosity, thus the strength of religious beliefs does not affect volunteer effort once we control for religious attendance. It is possible that attendance is simply a better measure of religious commitment and thus captures the possible effect religiosity has on effort (the correlation between the two variables is moderately high at 0.54). However, there is evidence in the literature that religiosity does not significantly affect volunteer effort even when religious attendance is not involved in the analysis (Cnaan, Kasternakis and Wineburg, 1993: 43-44); Barkan, Cohn and Whitaker, 1995: 129; Becker and Dhingra, 2001: 325). Thus the attendance measure may capture religious commitment to some degree, but that commitment is more a commitment to a religious congregation than a specific expression of commitment to religious beliefs, at least in terms of its effects on volunteer effort.

The fact that religious attendance has an effect on the length of time volunteering but no direct effect on the other components of effort reinforces the idea that it represents integration into a specific kind of social network that both facilitates volunteering and tends to restrict the range of organizations and activities available to the individual. Since the number of organizations connected to a congregation will be limited, opportunities to be active in more than one organization will be limited. Fewer organizations in which to participate means that on average, there will be fewer tasks available or requiring volunteer labour. It may also be the case that organizations that mainly depend on volunteer labour from a related congregation have a larger pool of willing recruits so there are more individual volunteers available to do the various tasks required. This may also restrict the hours of work any one volunteer is required to perform.

The next social capital variable that appears in the model of volunteer effort is length of residence in current community. This variable is a proxy for two characteristics of social networks that are not often measured in studies of social capital, the length of time individuals have had to establish networks in their community, and the “stake” they will have developed in that community (Payne, Payne and Reddy, 1972: 229; Smith, 1994: 250). Length of residence in a particular community has two consequences for volunteer effort that derive from the level of integration into a community that develops over time. One consequence stems from the fact that strong attachments to others and the social capital represented by strong network ties, need time to develop and this process is interrupted by migration (Coleman, 1988: S113; Abowitz, 1990: 550). The second arises because the longer individuals reside in a community, the greater their investment in that community will be, and the greater their willingness to take an active part in its maintenance (Sundeen, 1988: 549; Haines, Hurlbert and Beggs, 1996: 255).

The length of residence variable in the Canadian model has a positive effect on only one component of volunteer effort, duration as a current volunteer. The first interpretation of this effect is that those who have lived longer in a community will have developed stronger ties to others in the community, and strong ties have been shown to increase the tendency to be active in organizations for longer spells (McPherson, Popielarz and Drobnic, 1992:166). However, the model already includes variables that measure the extent of strong ties (number of direct helping types and religious service attendance) so length of residence should capture more of the second aspect of increased geographic stability, the degree to which individuals have developed a stake in their community. From this point of view, the model indicates that those who have a greater

stake in the community will more consistently provide work as volunteers over time.

They do not tend to volunteer for more organizations, do more tasks or give more hours to volunteering, net of duration. This is consistent with other research that finds that length of residence is not associated with these forms of volunteer effort (Haines, Hurlbert and Beggs, 1994: 398). Those with more invested in the community are willing to maintain that investment over time through volunteering but this does not necessarily draw them into more or wider participation as volunteers.

The results in the model do not rule out the possibility that length of residence reflects the fact that the longer a person has lived in a community, the longer they can have volunteered for a particular local organization. Leaving a community will typically mean stopping work for organizations in that locale and entering a new community will be followed by a period in which participation in general, and as a volunteer in particular, is much reduced (Payne, Payne and Reddy, 1972: 229). If length of residence in the community does have an impact on effort beyond simply the length of time individuals could be a volunteer, a better measure of stake in the community is required.

The final two social capital measures that impact volunteer effort are the number of children ages five and younger in the household, and household size. Since these are taken to represent the structure of the household, which is largely determined by the number and ages of children in the family, these are examined together as two aspects of family structure. Household size captures more than just own-children in the home, it also reflects the presence of step and adoptive children and perhaps others the respondents care for in their homes. The correlation between the number of own children at home and household size among households with two or more people is just 0.648, so

this variable measures the presence of others in the household than just own-children. Household size will to some extent also be a proxy for marital status since 26% of volunteers are married but have no children at home. Thus the impact of household size on volunteer effort could reflect whether or not the respondent is married. However, marital status is not correlated with hours volunteered, and is only slightly correlated with tasks ($r = 0.06$) and the number of organizations volunteered for ($r = 0.07$). It is more strongly correlated with duration as a volunteer ($r = 0.16$), but since household size does not affect this component of volunteer effort, this correlation does not affect the results in the model. As a single measure of the number of people in the household, this variable captures the demands that dependents make on the respondents' time and effort, including those that result directly from their own-children.

In this analysis, household size has a positive effect on both the number of organizations volunteered for and the number of tasks undertaken, but has a negative effect on hours volunteered. Along with this, the number of children age five and younger has a negative effect on the tasks undertaken. The individual variables for the number of own children in successive age groups from six and up, do not affect volunteer effort individually. The impact of children on effort is an overall effect rather than one that operates differentially for specific age groups. In general, as family size increases, individuals tend to volunteer for more organizations and increase the number of tasks they undertake. In the analysis in Chapter Four, it was suggested that as children move into school ages, parents increase their volunteer participation because of the involvements their children develop. As children grow and begin leaving home, the level of participation declines. The pattern of household and children 0-5 effects shows how

this increased participation occurs. It shows up as the parents becoming active in multiple organizations and in the increased the range of volunteer activities (tasks) undertaken. These suggest that as the family grows, parents expand the breadth of their participation in voluntary organizations. But at the same time as they do this, the negative effect on hours volunteered shows that they also tend to reduce the time they contribute to the expanded range of activities and organizations. Thus the presence of children draws parents into more and varied volunteer activities but the increased demands on their time at home, and possibly at work, have the effect of limiting the time they can devote to volunteering. The multiple embeddings encouraged by a growing family can have both positive and negative consequence for volunteer effort (McAdam and Paulsen, 1993: 645).

The presence of very young children increases this time limitation effect, but does so indirectly by reducing or restricting the range of activities parents take part in. This pattern is in line with Freeman's argument that at times volunteering is a social obligation that occurs in response to being asked to volunteer, rather than an activity that is entirely voluntary, (1997: 141). Volunteering in response to the demands created by the presence of school-age children for many parents is quite possibly a response to social pressures to be active participants on behalf of the children. In this situation, volunteers accede to requests to be involved, but the other demands on their time in other parts of life actually reduce how intensively they will become involved, and this is particularly true when there are very young children at home.

The pattern observed in the Canadian model for young children and household size is unique in research in this area because no one else uses the same four measures of

volunteer effort and thus no one is able to identify how children specifically affect each component of effort. Despite this fact, the research on the effects of children are ambivalent at best. To some extent the confusion may be the result of using different measures of effort or different measures of children in the household, or both. But even in relatively similar empirical models, the inconsistency remains. When hours volunteered is the measure of effort examined, and number of children of all ages in the household is the independent variable, the evidence suggests that children have no effect on hours volunteered (Sundeen, 1988: 564-565; Freeman, 1997: 153). This is also true for the effect of children on the number of activities people undertake for a particular organization (Barkan, Cohn and Whitaker, 1995: 129). However, when Wilson and Musick combine the number of organizations volunteered for with hours volunteered in a latent measure of volunteer effort, the number of children at home has a positive effect (1997a: 707). When the dependent variable is hours volunteered and the children in the household are represented by separate variables for age groups, the results are also contradictory. Menchik and Weisbrod find no effect on hours for children age five and younger, but a positive effect for older children (1987: 175), while Day and Devlin, using the 1987 VAS data for Canada, find a negative effect for very young children (ages 0-2), no effect for children 3 to 5, and a positive effect for children 6 to 15 (1996: 45). It is natural in this context to ask whether or not these results occur because the effect of children may be different for women and men, since much of the time and effort devoted to caring for children devolves to women in the household (Sundeen, 1988: 554). There is evidence, for example, that the presence of children in the household actually has opposite effects on men and women's participation in the paid labour force. Having

children at home reduces the hours women work while increasing the hours men work (Kaufman and Uhlenberg, 2000: 939). The presence of children in the home could be expected to have similar effects on men and women's use of their discretionary time. When the question is the impact of children on either the level of participation in social networks, or on joining voluntary organizations, the evidence does not get any clearer. There is evidence that young children have no differential effects by gender on joining voluntary organizations (Rotolo, 2000: 1147) but do reduce both network size and contact volume for women (Munch, McPherson and Smith-Lovin, 1997: 514). However, Day and Devlin (1996: 48) find that young children have a negative effect on hours volunteered among women but not among men. At the same time, these studies show that the presence of school-aged children does not have different effects for men and women, either in their participation in social networks, or in their tendency to join organizations. While these results imply that there should be gender differences in the effects of children on some aspects of volunteer effort, the evidence is not conclusive. However, one study of the rates of joining voluntary organizations that examines separate equations for men and women, and identifies children by age, may provide further insight into the effects of children in the Canadian model. When joining organizations was examined separately for men and women, Rotolo (2000: 1149, Table 2) found that children under five did not affect joining rates for religious or job related organizations for either men or women. School-age children also did not affect the rate of joining these types of organizations for men, but did slightly increase the joining rate for women. In contrast, school-age children had a very strong positive effect on the rate at which both men and women joined youth-related organizations. This is consistent with the idea that school-age children increase

their parents' volunteer effort through participation in youth-oriented organizations and supports the explanation offered for the Canadian findings. However, the evidence that participation is different across organization types is not necessarily uniform. Sundeen, for example, looked at hours volunteered for five types of organization, including health, education, civic, fraternal and service, and recreation and found that the number of children in the household had no effect on hours volunteered for any of the five types (1988: 564) but none of these types is uniquely a youth-related category of organization, which itself may mask the effect.

In sum, the evidence is mixed on the impact of children, either overall as household size, or even in specific age-groups, and there are hints that there may be important gender differences. The gender question will be examined later in the analysis when the social resources model of volunteering is used to estimated separate models for men and women, but there is evidence that paid employment and household size has different effects for men and women.

To tie together this extended discussion of the social capital variables a number of patterns are evident. The measures that represent the size and diversity of the individuals' social networks, such as the number of types of organizations they participate in, the number of types of direct helping they take part in, regular attendance at religious services and length of residence all tend to increase the length of time people have volunteered, the number of organizations they volunteer for or the number of tasks they undertake as volunteers. Previous experience in formal group settings increases the tasks undertaken while the presence of very young children reduces the tasks undertaken. The size of the household tends to increase the organizations volunteered for and tasks done,

but it is the only social capital variable that directly affects the actual hours volunteered. Children five and under reduce hours volunteered indirectly by reducing the number of tasks undertaken, while the other aspects of social capital affect hours only through their positive effects on the prior components of volunteer effort. The fact that virtually none of the social capital measures affect hours volunteered directly indicates the importance of including the prior measures of volunteering in any model of volunteer effort. The impact of social capital variables on hours volunteered occurs through their effects on the prior components of effort rather than on hours directly, and thus are important to any attempt to explain differences in hours volunteered by different individuals.

Cultural Capital and Volunteer Effort

The seven indicators of cultural capital are taken to represent aspects of the culture of benevolence as a world-view that is hypothesized to have a positive effect on volunteering (Wilson and Musick, 1995: 137-138). Of these seven, only the measures of self-oriented and other-oriented reasons for volunteering have a significant impact on volunteer effort. Once self-oriented and other-oriented reasons are accounted for in the model, the more generalized indicators of the culture of benevolence, such as religiosity, youth exposure to volunteering, satisfaction and control in life, and a general interest in world affairs, do not affect volunteer effort. Since these measures of cultural capital probably vary greatly as efficient proxies for the kinds of values and attitudes that reflect the culture of benevolence, while the self and other oriented variables are more closely linked to the respondent's volunteering activities, it is possible that these two act as intervening variables between the more generalized cultural capital measures and

volunteer effort. To examine this possibility, the volunteer effort model was re-estimated with the self and other oriented variables excluded but with all the other cultural capital variables included. The results of the re-estimation show that the self and other orientation variables may be intervening variables, but not for all the cultural capital variables, and not for all the measures of volunteer effort. First, religiosity and control in life have no effect on volunteer effort, even when the self and other orientation variables are not in the model. Satisfaction with life affects only the number of tasks undertaken and news following affects duration as a volunteer. The only cultural capital variable that affects all components of effort in the absence of the reason variables is exposure to volunteering as a youth. Thus there is some evidence that the reason variables intervene between the other cultural capital variables and effort, and should be modeled in a structural way. But as noted earlier, the temporal ordering of the cultural capital measures in the NSGVP data cannot be established sufficiently to reliably estimate a structure among these variables. Lacking this, each of the cultural capital effects are examined in greater depth in order to better understand the pattern of effects both with and without the orientation variables.

The literature on hours volunteered is undecided about whether or not a generalized measure of commitment to religious beliefs, such as religiosity, has an impact on volunteering. Some research does find that those who express a strong religious commitment tend to devote more effort to their volunteer activities (Day and Devlin, 1996: 45; Wilson and Musick, 1997a: 707) but other research finds no such connection (Barkan, Cohn and Whitaker, 1995: 129; Musick, Wilson and Bynum, 2000: 1555). Reconciling these divergent findings is a case of understanding that the empirical analysis

of the impact of religiosity on volunteering often confounds the strength of intrinsic religious beliefs with the frequency with which individuals attend religious services. As Cnaan and colleagues argue, the strength of religious beliefs and frequency of attendance are not synonymous, and treating them as conceptually equivalent indicators of religiosity, or in actually combining them into single measures of religiosity, obscures the different impact each can have on volunteering (Cnaan, Kasternakis and Wineberg, 1993: 38-39). In general, the research that finds a positive effect of religiosity on volunteering either include a measure of attendance at religious services in their measure of religiosity (Wilson and Musick 1997a: 707), or do not control for service attendance in their models (Day and Devlin, 1996: 45). When the strength of religious beliefs is measured separately from service attendance, the results support the findings in the Canadian model--- attendance increases volunteer effort, but religiosity does not (Musick, Wilson and Bynum, 2000: 1555). And the re-estimated model for the Canadian data shows that the two orientation variables do not intervene between religiosity and volunteer effort. In either case, religiosity does not affect volunteering. This reinforces the conclusion that participation in a religious congregation affects volunteering through its impact on the individuals' social networks, rather than through the strength of their religious beliefs.

The re-estimation of the model also shows that the two reasons variables do not intervene between the individual's sense of control and volunteer effort. In contrast, satisfaction with life does have a significant effect on the diversity of tasks undertaken, and following the news affects duration as a volunteer when the reason variables are excluded. These three variables are assumed to act as proxy measures of the individual's sense of efficacy or their perception of their ability to get things done (Caputo, 1997:

161). It is possible that the two reasons variables are in fact consequences of these aspects of efficacy, and their inclusion in the model results in the non-significance of the efficacy measures. Efficacy has been found to positively affect volunteer effort, particularly in terms of the level of activity people undertake in voluntary organizations (Barkan, Cohn and Whitaker, 1995: 129). To explore this possibility, the self-oriented and other-oriented

Table 5.8 Effects of Efficacy Measures on Self-Oriented and Other-Oriented Reasons for Volunteering

Independent Variables	Dependent Variable	
	Self-oriented reasons for volunteering	Other-oriented reasons for volunteering
	standardized regression coefficients	
Satisfaction with Life	-0.014	0.051*
Control in Life	-0.048	-0.061*
News Following	-0.075*	-0.012
R ²	0.007*	0.003*

* p < 0.05

variables were regressed on the efficacy measures and the results partially confirm this conclusion. The standardized coefficients and R² for these regressions are presented in Table 5.8. The regressions show that only news following has a significant effect on self-oriented reasons, while both satisfaction and control have a significant effect on other-oriented reasons. However, in both equations, the efficacy measures explain less than 1% of the variation in the reason variables, so while the latter may intervene between efficacy and effort to some degree, they are not simply proxies for the efficacy variables. Instead,

they clearly represent aspects of the individual's motivation for volunteering that go beyond their sense of efficacy.

In the re-estimated model only one cultural capital variable, exposure to volunteering as a youth, has a significant effect on volunteer effort in the absence of the reason variables. Here the two reason variables may well intervene between youth exposure and volunteer effort because the components of youth exposure could reasonably be expected to have an important effect in forming the respondent's understanding of the meaning of volunteering and contributory behaviour in general (Piliavin and Charng, 1990: 41; Schervish and Havens, 1997). Thus in the future it may be useful to actually model the internal structure that might exist among the social resource variables that represent cultural capital. As it stands, the less proximate measures of cultural capital have a negligible influence on volunteer effort.

Returning to the effects of the orientation variables on volunteer effort, the way they affect effort is instructive of the role attitudes and values play in accounting for volunteer activities. Those who give more other-oriented reasons for volunteering tend to have been volunteers for longer spells. This factor does not affect the other components of effort, other than by increasing the longevity of volunteer activities. This suggests that a generalized willingness to help others works to maintain an individual's commitment to volunteering over time. The feeling that they are helping others sustains their commitment. Variables similar to the other-oriented reasons have been examined in the research literature, but the dependent variable has only ever been the number of hours volunteered, or the number of types of organizations volunteered for. Sokolowski, for example, uses a measure of other-oriented reasons that is much the same as the one used

in the Canadian model, and finds that it has a strong positive effect on hours volunteered (1996: 270). In addition, Wilson and colleagues find that individuals who value contributing to the well-being of others tend to volunteer for more types of organizations (Wilson and Musick, 1997b: 265), and tend to contribute more hours to volunteering (Musick, Wilson and Bynum, 2000: 1553). Since neither of these studies include duration as a volunteer as a possible consequence of other-oriented reasons, it is difficult to say exactly how these values would be expected to affect the other components of effort when duration is included in the empirical model. But the Canadian model suggests that the increase in organizations volunteered for or hours volunteered is due to the longer duration that other-oriented volunteers tend to spend as volunteers.

While this interpretation is consistent with previous findings on how other-orientation values affect volunteer effort, it is important to point out that the connection between duration and other-orientation may actually go in the reverse direction from that proposed in the Canadian model. Other-oriented values may be a consequence of prolonged involvement in volunteer activities. The reasons people offer after the fact for why they volunteer will tend to some extent to reflect socially appropriate explanations that evolve out of their participation rather than directly cause it (Pearce, 1993: 91-92; Wilson, 2000: 222; Dekker and Halman, 2003: 4-5). In particular, there is evidence that over time other-oriented values become more important reasons for sustaining a volunteer activity than the original contextual reasons (Piliavin and Charng, 1990: 43). The Canadian data do not permit tests of this proposition in any way because the cross-sectional data requires the assumption that all the cultural capital variables represent

attitudes and values that are stable over the long-term and thus precede current volunteer behaviour. This is one area where longitudinal data are much needed.

Self-oriented reasons for volunteering increases both the number of tasks undertaken and the number of hours volunteered, but does not affect duration or the number of organizations individuals volunteer for. This is one example of where the tangible benefits of volunteering have very specific consequences for volunteer effort. The four reasons that make up this index involve volunteering to use skills and experience, to explore one's strengths, to improve job opportunities, and because friends volunteer. Clearly the first three are enhanced by doing a greater diversity of tasks because doing so allows for wider exploration of one's strengths and use of skills, and provides more "on-the-job" training that would improve job opportunities. For those where volunteering occurs partly because friends do so suggests that the sociability that goes along with volunteering encourages a wider range of activities. Barkan, Cohn and Whitaker, for example, found that volunteers who saw their participation in an organization as an important way to make new friends took part in a wider range of tasks for the organization (1995: 129). There is also evidence in the Canadian data that those who volunteer because of their friends, less actively seek out a diversity of tasks but may be drawn into doing so mainly because their friends are involved. For example, those who volunteer because their friends do are less likely to do as wide a range of tasks as those for whom a diversity of tasks would provide a wider range of training or experience. The average number of tasks undertaken by those who volunteer to be with friends (3.63) is significantly lower than those who volunteer to explore their strengths (3.90) or to use their skill (3.92), and is lower, although not significantly so, than those

who volunteer for job-opportunities (3.85). Volunteering to be with friends may cause people to undertake more tasks but does not cause them to undertake as many tasks as those with a more focused utilitarian purpose in mind.

Those with self-oriented motives for volunteering also tend to give more hours to their volunteer activities than those with less explicitly self-interested goals. This effect on hours volunteered has been observed in the research literature (Sokolowski, 1996: 270). Not only do these people work at more diverse activities, they also put more time into these activities. Although volunteers with tangible goals or motives are willing to invest more time and effort into their volunteering, this investment is quite focused in the sense that it does not require or encourage them to expand their volunteering to multiple organizations, nor does it encourage long term commitments to volunteering. Instead, realizing their goals is accomplished by doing a variety of tasks and devoting more time to these activities without necessarily becoming involved in more organizations.

Overall, there is only mixed evidence for the impact of the cultural capital variables proposed by the social resources theory. Religiosity, as a generalized commitment to religious beliefs, does not affect volunteer effort. Measures of personal efficacy may have an impact, but if so this is mediated by the volunteer's self and other-oriented reasons for volunteering. Having been exposed to volunteering as a youth, either through role models, actual participation as a volunteer, or having been helped by voluntary organizations, possibly does increase volunteer effort, but that effect occurs completely through the way it forms adult values regarding the benefits of volunteering, both for oneself and for others. Lastly, the effect of strong other-oriented reasons for volunteering is to increase the length of time people tend to volunteer, while self-oriented

reasons tend to focus participation in a way that increases tasks undertaken and the time devoted to volunteering.

The discussion to this point has provided a fairly detailed picture of how the various components of the social resources model affect the four aspects of volunteer effort and how these compare with the evidence from previous research. This model provides an important empirical baseline against which other questions and issues related to volunteer effort can be examined. As an example of this, the analysis turns to the question of gender differences in the social resources model of volunteer effort.

Gender and Volunteer Effort

The model of the likelihood of being a volunteer presented in the previous chapter shows that once differences across religious groups and regions of Canada are incorporated in the model, there are no significant differences between men and women in their tendency to be volunteers. This indicates that the observed gender differences in the likelihood of volunteering are due to differences in how social resources are distributed between men and women. If this is the case, the differences between men and women do not lie in the likelihood of their being volunteers but in the amount and kinds of effort they devote to their volunteer activities. Some of the findings discussed above for the national model of volunteer effort suggest that there are important gender differences in the way men and women provide their labour to voluntary organizations. In particular, the way in which paid employment and children affect participation as a volunteer may differ between the two.

The research literature on volunteering by men and women does not provide a clear picture of what gender differences in volunteer effort might be expected to exist. As noted earlier, there are few studies that examine the components of effort other than hours volunteered, and even then, the results are inconsistent. Even the research that looks at the question of gender differences in something as straightforward as joining voluntary organizations, is not much more enlightening. The typical finding is that men are more likely to be members of a volunteer organization than are women (Babchuk and Booth, 1969: 36; Curtis, 1971: 874) and that men are more likely to belong to multiple organizations than are women (Palisi and Korn, 1989: 187). Since the Canadian model of effort shows that the number of organizations in which a person participates is a strong predictor of volunteer effort, these patterns would be expected to result in greater effort among men, all other things being equal. However, the differences in voluntary association affiliations is mainly due to the higher levels of participation in work-related organizations, such as unions and professional association, among men (McPherson and Smith-Lovin, 1982: 889). In Canada, for example, affiliation rates for men and women in 1968 were 73% and 56% respectively when union memberships were included. With unions excluded, the affiliation rates were identical at 51% (Curtis, 1971: 874). The lack of gender differences in affiliations, either in the rate or in the number of affiliations per person, is supported by more recent data for Canada (Curtis, Grabb and Baer, 1992: 148), and is repeated elsewhere even when union memberships are counted (McPherson and Smith-Lovin, 1982: 900; Popielarz, 1999: 238). Thus it would appear that the differences in affiliations that might have existed in the past have now almost disappeared, and this is probably a consequence of increased participation by women in the paid labour force.

In the literature on gender differences in the four components of volunteer effort, the findings are also very inconsistent. There is some evidence that women tend to volunteer for more organizations than do men (Wilson and Musick, 1998: 808), but the dependent variable in this analysis is not the actual number of organizations volunteered for, but the number of types of organizations. The finding thus indicates that women volunteer for a greater range or diversity of organizations, and on average this would be expected to result in their volunteering for more organizations than men. However, if men are more likely than women to volunteer for multiple organizations of the same type, then the diversity among women may not actually result in their volunteering for more organizations than men. Since the national model includes a count of the organizations respondents volunteer for, rather than the types, this question can be addressed directly.

While women may volunteer for more organizations, there is evidence that they do fewer tasks for the organization in which they volunteer. Barkan, Cohn and Whitaker, for example, found that women undertook fewer instances of direct advocacy action for an anti-hunger organization (1995: 129). The model of volunteer effort can address this issue also, but less directly than in the case of organizations volunteered for. Barkan and colleagues use the actual number of instances in which a person did work for the organization, while the Canadian data contains information only about the number of types of tasks undertaken. The diversity and actual number of tasks are probably strongly related, but if one group tends to do a large number of the same type of tasks (low diversity), while the other does a small number of different tasks (high diversity), the results from the model can conceal the true relationship between gender and tasks undertaken. Nonetheless, both diversity of tasks and the number undertaken, represent

aspects of an individual's commitment to an organization, and as Pearce notes, the committed core organization members tend to be available for more and varied tasks than are peripheral members, so diversity should be positively related to volunteer effort (1993: 48).

The greatest amount of evidence on possible gender differences in effort comes from the studies of hours volunteered. In their economic model of hours volunteered, Menchik and Weisbrod (1987: 271) find that women volunteer more hours than men, as does Sokolowski (1996: 270) using a model that includes measures of motives and social network characteristics. In contrast, others find that in models which include variables similar to those in the social resources model, gender has no effect on hours volunteered (Sundeen, 1988: 564; Wilson and Musick, 1998: 808). In a similar vein, in their application of the social resources model to American data, Wilson and Musick find that gender has no direct effect on volunteer effort, but does have an indirect effect through its impact on the human, social and cultural capital variables. Being female has a positive effect on social and cultural capital, and a negative effect on human capital (measured as socio-economic status) and because all three have a positive effect on effort, the total effect of gender on volunteer effort is positive (Wilson and Musick, 1997a: 707). More will be said about this result below, but it does indicate that gender differences may exist in the social resources model of volunteer effort.

The evidence for gender differences in Canada in hours volunteered runs counter to the findings from the United States. In 1987 in Canada, women volunteered fewer hours than men (Day and Devlin, 1996: 45). This is supported by more descriptive analyses of average hours volunteered in both 1987 and 1997 (Reed and Selbee, 2000c:

38). However, by 2000 the difference between men and women had disappeared. The average hours for men (168) is not statistically higher than the average for women (152) among volunteers. Thus there may have been gender differences in some aspects of effort in the past in both Canada and the USA, but the more recent data suggest that these differences have declined. There may no longer be extensive differences in the process that generates volunteer effort for men and women. Nonetheless, changes in the average level of effort do not necessarily mean that the social resources model works in exactly the same way for men and women. Similar overall levels of participation by gender could be the result of different, but off-setting, connections between social resources and the separate components of volunteer effort. To examine this and other possibilities, the Canadian model of effort is used to search for gender differences.

Gender Differences in Effort

In the discussion above it was pointed out that in their application of the social resources model, Wilson and Musick include gender as a dummy-coded exogenous explanatory variable, and find that it has an indirect but no direct effect of volunteer effort. This procedure, as was discussed in Chapter Three, does not test for differences between men and women in the impact the social resources variables have on volunteer effort. It only tests whether or not there are differences in the mean level of the dependent variables for men and women. Finding that gender has an indirect impact on effort through the three forms of capital in fact is not even a test of mean difference in the effort variables, instead it identifies the average gender differences in the level of the capital variables and these into differences in volunteer effort. In short, this procedure does not

determine if the social resources model acts differentially for men and women because it does not test whether or not the path coefficients in the model differ by gender. This question is substantively more interesting since it identifies gender differences in how social resource prompt or inhibit volunteer effort, rather than simply saying that there are differences in the levels of social resources men and women possess. In the search for gender differences undertaken here, the tests are constructed in a way that will identify both mean differences and differences in the strength of the paths in the structural model. This is accomplished by fitting a series of models to two covariance matrices, one for men and one for women, and specifying equality constraints on various parameters (intercepts and path coefficient) across the two groups. By successively relaxing these constraints, the model can identify where and how the social resources model differs by gender.

The first step in this process is to assume that there are no differences between men and women and simply fit the model of effort developed for all volunteers to both groups. The hypothesis tested in this situation is the equal regression model where the intercepts and path coefficients in one group are constrained to be equal to their counterparts in the other group. Estimating this model does require a slight change in the parameterization of the original effort model. In the model developed for volunteers as a group, there is nothing substantively interesting about the intercepts of the four structural equations and thus they are not estimated. In a comparison of two or more groups, the intercepts are of interest; differences between the groups can be due to differences in the mean levels of the dependent variables (intercepts) or in the path coefficients. To allow for these possibilities, a term for the intercept is added to the multi-group regression

model for each of the four dependent variables. Substantively this model says that the mean level of the dependent variables and the effects of the social resource variables on volunteer effort are identical for men and women.

Table 5.9 Testing Gender Difference Models of Volunteer Effort

Model	χ^2	df	p-value
1 Equal Regressions	184.9	93	< 0.000
2 Parallel Regressions	154.7	89	< 0.000
Model 1 - Model 2	30.2	4	< 0.01
3 Different Regressions I	111.7	86	= 0.033
Model 2 - Model 3	43.0	3	< 0.01
4 Different Regressions II	111.9	88	= 0.044
Model 4 - Model 3	0.2	2	> 0.98

The equal regression model (Model 1 in Table 5.9) does not fit the data very well, the probability that this model is true in the population is very small ($p < 0.000$). As an aside, the statistic used to evaluate the fit of multi-group model is the global goodness-of-fit statistic, χ^2 . Closeness-of-fit statistics are available for these models, but in the multi-group analysis, close fit to the population is misleading because some of the lack of fit between the model and the population can be due to differences between the groups. Testing for invariance in a model across groups requires a more stringent evaluation of fit, such as the global χ^2 (Joreskog, 2000: 21). This can be aided by examination of the modification indices produced by the Lisrel program. These indicate the parameters that

may not be equal across groups---relaxing these constraints will produce a significant improvement in the fit of the model (Joreskog, 2000: 53).

The equal regressions model does not describe the volunteer effort of both men and women, so there are gender differences in this process. These may be due only to differences between men and women in the mean level of each of the effort variables. This hypothesis, the parallel regression model, allows the intercepts to differ across groups but constrains the path coefficients to be equal. Model 2 in Table 5.9 shows that relaxing the equality constrain on the intercepts significantly improves the fit of the model, but the global X^2 indicates that it does not yet fit the data. Thus some of the gender differences in the model are due to differences in the average level of effort men and women devote to volunteering, but the lack of fit also indicates that there are still important differences that would improve the fit to each group. Examination of the modification indices suggest that three constraints on paths in the model be relaxed. For men, a path from hours of paid work to the duration as a volunteer was added to the model---for women this path is constrained to be zero. For women, two additional paths were added; household size was allowed to affect duration as a volunteer, and youth experience in organizations was allowed to affect the number of organizations for which they volunteered. The X^2 for Model 3 in Table 5.9 indicates that the model is a fairly good fit to the data and examination of the modification indices indicate that there are no additional changes to any parameters that would significantly improve the fit. However, examination of the intercept terms indicated that two of them may not be different across gender groups. To test this possibility, an equality constraint for each intercept was successively added to Model 3. Each re-estimation of the model is a single degree of

freedom test of the hypothesis that the particular intercept is equal in the two groups.

These tests show that only the intercepts for the number of tasks and hours volunteered are significantly different between men and women. Model 3 was re-estimated with only these intercepts allowed to vary across groups and the result is Model 4 in Table 5.9. This model was cross-validated by fitting it to the confirmatory sample. The model does not fit the confirmatory sample as well as it does the exploratory sample ($X^2 = 146.1$, $df = 88$, $p = 0.0001$) but the fit is not unacceptable and only one modification index was significantly large, indicating that for women, a path from hours of paid work to the number of organizations volunteered for would improve the fit. Since for women this effect will be captured by the effect of work hours on duration as a volunteer (as an indirect effect), the model was accepted as estimated in the exploratory sample.

Rather than presenting and analysing the entire volunteer effort model again, the intercepts and unique independent effects are presented in Table 5.10. For the social resources variables that have the same impact across gender, the interpretations offered in the full volunteer effort model apply and need not be reiterated. The intercepts for the four structural equations are presented in the first panel of Table 5.10, with the unstandardized path coefficients and total effects for the three new paths in the model.

The fact that only three paths differ in the volunteer effort model across gender groups shows that the social resources model of effort is essentially the same for men and women. The social dynamic that connects social resources to the effort that is devoted to volunteering is much the same for both groups. Differences between men and women arise only from differences in the levels of effort they expend on volunteering, and from three structural paths that are unique to one or other of the groups.

Table 5.10 Intercepts and Unique Paths for the Gender Model of Volunteer Effort

	Dependent Variables ^a							
	Duration of Volunteering		Number of Organizations		Number of Tasks		Hours Volunteered	
	Men	Women	Men	Women	Men	Women	Men	Women
Intercepts	-3.98	-3.98	0.70	0.70	0.97	0.86	21.6	17.7
Coefficients								
Work Hours	0.036	0	0	0	0	0	-0.008	-0.008
Youth Experience	0	0	0	0.025	0.046	0.046	0	0
Household Size	0	0.345	0.031	0.030	0.019	0.019	-0.040	-0.040
Total Effects								
Work Hours	0.036	0	0.001	0	0.001	0	-0.004	-0.008
Youth Experience	0	0	0	0.025	0.046	0.058	0.026	0.052
Household Size	0	0.345	0.031	0.038	0.033	0.044	0.002	0.035

a. The intercepts for all variables are presented in the scale of the scale of the original variable rather than in the logged form.

In technical terms, the intercepts in Table 5.10 are the predicted values of the dependent variables for men and women who score zero on all the independent variables. None of the respondents correspond to this situation, so the actual values of the intercepts are unrealistic. However, difference between the intercepts are the differences between men and women net of the effects of social resources for each group. These are the gender differences that cannot be attributed to differences between men and women in their social resources and thus are exogenous to the model. In other words, any explanation for these differences must look to factors beyond the social resources contained in the model of volunteer effort.

The intercepts for the four measures of effort show that there are no differences between men and women in terms of how long they have been volunteers, or in the number of organizations they volunteer for. The first result is consistent with previous research that finds that the duration of voluntary organization memberships are the same for men and women (Rotolo, 2000: 1151). If either group had significantly shorter durations as organization members, the length of time they could have volunteered for these organizations would also tend to be shorter. This is not the case, men and women tend to remain volunteers for similar lengths of time. The second finding, that there is no difference in the number of organizations volunteered for, is contrary to previous findings. Wilson and Musick found that women volunteered for a wider range of organization types than did men, but their measure of types rather than number of organizations does not indicate if women actually volunteered for more organizations. The Canadian model of effort shows that this is not the case, When the actual number of organizations is used as the dependent variables, there are no gender differences. If women do volunteer for a greater diversity of organizations, as Wilson and Musick's results imply, then it must be the case that men are more likely to volunteer for multiple organizations of the same type. The NSGVP data support this interpretation. Among men, 31% of the organizations they volunteered for were in the single area of culture, sport and recreation, while only 17% of the organizations in which women volunteered were of this type. In four other types, women exceed men by less than 5%, and in the balance of the organization types, the proportions are almost even. The much higher likelihood for men to volunteer for the culture, sport and recreation type of organization and the tendency for women to volunteer slightly more often in four other areas indicates

that women do tend towards diversity in the organizations they volunteer for, while men concentrate their efforts in a single organizational type.

Most of the purely member-benefit organizations will be in the culture, sport and recreation area, so it appears that men volunteer more for these than for the public-oriented organizations in other areas. In fact, among women, 16% of the organizations they volunteer for are health-related, while these are only 10% of the organizations men volunteer for. In the area of social services the pattern is the same. These organizations make up 21% of the organizations women are active in, and 18% of the ones men are active in. Thus women do volunteer for a greater diversity of organizations and do so for more of the public-oriented organizations. Despite the differences in the diversity of organizations men and women volunteer for, there is no difference in the number they volunteer for.

The intercepts for number of tasks and hours volunteered both show that men undertake a greater diversity of tasks and work more volunteer hours than do women. The first result must be treated with caution for the same reasons as notes for the diversity of organizations. In the model of volunteer effort, tasks performed is a measure of the diversity rather than the actual number of tasks performed. The finding that men perform a wider range of tasks may simply indicate that where men spread their volunteer work across different activities, women perform a smaller range of tasks but may be doing them more often. Unfortunately the Canadian data cannot address this question because the actual count of tasks undertaken was not ascertained in the survey. The Canadian data do indicate that while men may perform a wider variety of tasks, this does not happen because they are more often in leadership or management position. The proportions of

men and women who served on boards of directors, did consulting, executive, office or administrative work, or helped organize or supervise activities and events are essentially identical. However, since there is evidence that women are substantially more likely to belong to gender-segregated organizations than are men (Popielarz, 1999: 239), the leadership activities women undertake may mainly occur in organizations with largely female membership. Men, on the other hand, are more likely to belong to male-dominated or gender-integrated organizations. The almost identical proportions of men and women who are involved in leadership activities suggests that men more often than women assume these role in gender integrated organization. More detailed information about the tasks individuals undertake and how often they do each type is needed in order to address these kinds of questions.

The unstandardized coefficients and the total effects for the three paths that were added to the model of effort are presented in the second and third panels of Table 5.10. The first of these is a path from hours of paid work to duration as a volunteer for men only. In the original model of effort this variable had only a direct negative effect on hours volunteered. In the gender model of effort, the more hours a man works at his paid job, the longer he will tend to have been active as a volunteer. This positive connection between hours worked and volunteer effort is, at first glance, a puzzling finding. Hours worked is usually taken to reflect negatively the discretionary time a man can devote to other activities, including volunteering. However, Wilson suggests that working is a form of social integration that encourages volunteering, and working more hours reflects the status of the job, which the dominant status theory says will also increase volunteering (2000: 220-221). These factors may account for the tendency for those who work more

hours to participate as volunteers for longer spells. Being more integrated into one's community or more in demand by voluntary organizations should lead to persistence in one's involvement. This effect works its way through the other components of effort as seen in the total effect in Table 5.10. Working more hours increases the tendency for men to volunteer for more organizations and to undertake more tasks, but its largest effect is that it reduces by half the negative effect paid hours has on hours volunteered. This shows that where women make a strong trade-off between hours employed and volunteer hours, men are much less inclined or forced to do so. Since women typically take responsibility for a majority of household work, they clearly have less time available for other activities and are more likely to make a trade-off between time devoted to employment and time available for volunteering. With fewer responsibilities outside of paid employment, men do not have to make this trade-off.

The first path that is unique to the model for women connects youth experience in organizations and groups to the number of organizations women volunteer for. In the model for all volunteers it was suggested that experience in organizations as a youth would either socialize individuals into cooperative behaviour or could provide civic or organizational skills, or both, that facilitate participation in voluntary organizations as an adult. In either case, the result for men is only that they undertake a greater diversity of tasks as volunteers. For women the socialization or skills acquired in youth organizations cause them to volunteer for more organizations and to undertake more tasks for those organizations. The effort model cannot identify whether these results are socialization or skill effects, although there is little reason to expect these experiences to differentially provide these skills by gender. There is some research that can shed light on this

question. In a study of American teenagers, Sundeen and Raskoff find that young women who volunteer have a strong social and altruistic orientation while young men who volunteer have a very different activist and individualistic orientation (1995: 353). Importantly, they conclude that these orientations emerge as a result of the teenagers' participation in voluntary organizations (1995: 354). The effect of youth experience is to socialize young women into a more broadly-based concern for the well-being of others, and this encourages them to expand their participation as adults, both by volunteering for more organizations and by doing more diverse tasks for those organizations. In contrast, the effect of youth experience for men is to socialize them in more utilitarian and instrumental ways, and this is expressed as adults as a willingness to undertake more tasks but does not encourage them to broaden their activities to multiple organizations.

The second path that is unique to women connects household size to their duration as a volunteer. For women but not men, the larger their household the longer they will have been volunteers. In the original model of volunteer effort, household size affects all the volunteer effort measures except duration for all volunteers. In the gender model it affects all components of effort, including duration, for women alone. It was suggested that the household size effect is due to the presence and ages of children, and perhaps other relatives, in the household. Children of school age in particular, are thought to draw parents into a wider range of participation activities. The results from the gender model support this interpretation, but for women the increased participation appears to be more long-term than it is for men. If school-age children draw women into volunteering, they maintain their commitment as their families grow in size. In other words, as their children enter and then progress through school, and as other children enter this age

group, women increase their effort and maintain it over time. The presence in the model of the negative effect for children five and under accounts for the reduction in effort that women (and men) experience when there are young children in the household, so the effects of older children are independent of this decline in effort. For men, the increased volunteering that comes with children of school ages may be more intermittent. School age children draw men into more volunteer effort, but as their families grow in size, the duration of their attachment the volunteer labour force does not increase. This would occur if men tend to start and stop their volunteering more often during their children's school years. For women, the effect of children is to draw them into more effort and to sustain that effort over time while men increase their effort but do so episodically.

Finally, both of the paths that are unique to women have indirect effects that increases the level of effort they devote to volunteer activities. The total effect of youth experience on hours volunteered is twice as strong for women as for men, but the largest difference by gender is the effect of household size on hours volunteered. Both men and women expand their efforts in volunteering as household size increases by doing more tasks and working for more organizations, and this has a positive effect on the hours they volunteer. But for women, the tendency to sustain their volunteering over time as household size grows substantially increases the hours they volunteer compared to men. This reinforces the impression that women tend to increase and then sustain their effort as family size increases. For men, on the other hand, the presence of children increases their effort but their attachment is less regular and children do not cause them to increase their level of committed hours as much as they do for women.

Looking for gender differences with the social resources model of volunteer effort, and using techniques with the potential to identify differences beyond just differences in the average level of effort, produces a new and more informative view of gender differences in volunteering. The analysis has raised more questions than it has definitively answered, but that is mainly a consequence of the adequacy of the data available in the Canadian survey. One clear result of this exercise is the conclusion that data collected with a better eye to the patterns of possible gender differences in the dynamic of volunteer effort are needed, and the gender model points to several areas where this kind of information is needed.

That said, it is not surprising that the gender model identifies only a few differences between men and women in how they contribute time and effort to volunteering. Recent studies that use more informative and well-crafted data tend to find few, if any, major gender differences in the way social resources impact volunteer effort (Wilson and Musick, 1997a, 1998; Popielarz, 1999). Nonetheless, the gender model developed here does answer one important question that has not adequately been addressed in previous research. The analysis establishes that there are gender differences in the level of effort men and women devote to volunteering, but more importantly, it also demonstrates that there are substantively important differences in the way social resources affect how men and women contribute their time and effort to volunteering.

The character of these differences lies most clearly in the relationship between family structure and how men and women accommodate the cross-cutting demands family obligations create that both encourage participation and restrict the time available to do so. Women respond to this situation by expanding the breadth and duration of their

activities but restrict the amount of time they spend on all volunteer activities. Men, in contrast, expand their effort, and in the end contribute more time to volunteering, but are less likely to sustain this commitment over time in response to the changing demands of family life. Beyond this, the model shows that among the social resources that men and women bring to volunteering, human, social and cultural capital have much the same impact on volunteer effort for both groups. The social dynamic that links social resources to volunteer operates in much the same way for women and men. The implications of this situation and the findings from the analysis of the likelihood of volunteering are taken up next in the concluding chapter of this dissertation.

Summarizing the Model of Volunteer Effort

Summarizing the overall connection between social resources and volunteer effort will be left to the concluding chapter of this dissertation because while the national model looks at hours volunteered in total as an important empirical baseline that can be compared to the existing research on volunteering, and on hours volunteered in particular, there are important conclusions to be drawn when both the analysis of the likelihood of volunteering and of volunteer effort are brought together. Combining the findings from both models can improve our overall understanding of volunteering as a dynamic social process.

There are, nonetheless, several observations to be made at this point. First, the social resources theory when applied to an analysis of volunteer effort that separately identifies the four components of effort provides a more detailed description of this behaviour. The model accounts for a substantial amount of the variation in volunteer

effort, and measures of human, social, and cultural capital, as well as economic resources, all have an impact on effort. Most important perhaps, is that by including measures of effort other than just hours volunteered annually, a substantially more informed understanding is gained of how various resources affect volunteer effort than has previously been available in the literature. There are significant limitations to the model of effort as it is operationalized here, most of which await better data in longitudinal or event history form, but the advantages of a comprehensive model of effort, even if preliminary in some ways, is evident. It shows that an explicit understanding of how specific social resources affect each component of volunteer effort improves our understanding of the dynamic involved in this activity. Identifying the structure of this process opens up many possibilities for refining our understanding of volunteering.

Chapter Six

Conclusion

Social Resources and Volunteering

The purpose of this project at the outset was to apply the social resources theory to a model of the likelihood of being a volunteer, and to a model of volunteer effort that incorporates multiple dimensions of how people contribute time and effort to volunteer activities. This was undertaken as a way to evaluate the utility of the theory as a description of volunteering in Canada. This chapter discusses how the research fared in achieving each of these goals. The first section examines how well the empirical models performed in statistical terms and what were some of the technical and statistical limitations encountered in the process. The second section examines how the specification of the relationships among the four components of effort constitutes a major improvement in our understanding of volunteer effort. The third section examines how the application of the resources theory to both the likelihood of volunteering and volunteer effort provides new understandings of volunteering when the results of the two analyses are considered in concert. Finally, the fourth section discusses the overall implications of the social resources model for our understanding of volunteering in general, and for studies of group differences in volunteering, and ends with a brief discussion of the implications of the findings for voluntary organizations in terms of their recruitment practices and how they employ volunteer labour.

Technical Issues in the Application of Social Resources Theory to Volunteering

In the article where Wilson and Musick first propose the social resources theory, their title suggested that it was a contribution toward an integrated theory of volunteer work (1997a). This dissertation sought to take this initial theoretical model and apply it to two central questions in the study of volunteer work: who works as a volunteer, and what determines how much effort they will contribute to that work. One reason for applying the social resources theory in the development of empirical models was to provide structural models that could stand as broad descriptions of each process, and that could serve as the empirical baseline for further research in this area. This section evaluates how the theory fared in its application to volunteering in Canada. The assessment is based on an evaluation of how well the models derived from the theory work in statistical terms as explanations of volunteering in Canada, and on the kinds of problems encountered in applying the models, both in terms the variables used to measure social resources and volunteering, and the data and techniques used to develop the models.

Statistical Evaluation

The empirical models that explain the likelihood of volunteering and volunteer effort have proven to be, in statistical terms, fairly good approximations to the data. The model of the likelihood of volunteering fits the data well and accounts for about 28% of the variation in the data. The model of effort also fits the data well and accounts for between 23% and 31% of the variation in the data. However, in both cases it is obvious that other factors that are not in the models, may be important in determining who volunteers and how much effort they expend. Some of these are discussed below in terms

of the information on the organizational context of volunteering that is lacking in the models, but there are also technical limitations with the current applications that may affect how well these models account for volunteering. These are issues with the structure of the models, and the operationalization of the social resource and volunteer effort variables.

Both structural models of volunteering treat the four types of social resources as a set of exogenous variables among which no causal structure is specified. In the case of the probability of being a volunteer, this is necessitated by the fact that there are no statistical techniques available for estimating multi-equation structural models that use a dichotomous variable as the ultimate outcome. In the case of volunteer effort, estimation of the structure among the social resources variables was eschewed in favour of a specification that would be in line with previous research of aspects of effort where social resource variables are usually treated in this manner. But this strategy was also followed because the cross-sectional data on which the models are estimated are of limited usefulness for properly representing the structure among the social resources. The application of these restricted structural models in each instance shows that a specification of the model that includes a causal structure among the resource variables would improve our understanding of each process. In particular, explicitly estimating the relationships that exist among the social resources would identify the kinds of indirect effects that the human capital and economic resource variables have on volunteering through their impact on social and cultural capital.

Both models of volunteering leave unexplained a substantial amount of variation in the dependent variables. Some of the lack of explanatory power stems from the fact

that the variables that are in the models are less than ideal operationalizations of the conceptual characteristics they are meant to represent, and there is some uncertainty about the appropriate causal sequence of some variables.

The latter is largely a consequence of using cross-sectional data to estimate these causal models. In this research, a necessary assumption made for many of the variables, is that those treated as prior causes are stable in the long-term for most respondents and thus can have a causal influence on those that they are postulated to determine. For many of the variables used to measure social resources, the assumption that current levels are a stable characteristic of individuals over time is, for most respondents, fairly reasonable. For some measures, such as age and length of residence, there is little problem in assuming their prior temporal status. For other variables, such as income, education, health, hourly pay, and hours worked each week for example, it is reasonable to assume that they would not change to any significant degree over the long-term---a span of five years perhaps, for most respondents. As a result it is reasonable to assume that these factors can have a causal influence on the respondent's volunteering over the past year. For many of the variables that measure social and cultural capital, however, the assumption of stability over time and thus the possibility that they can influence the volunteering variables is much less certain. Factors such as the size or density of a person's social networks or the sense of satisfaction or control in life may be more prone to short-term changes. More importantly, it is not unreasonable to expect that volunteering itself may actually have a causal influence on these measures. The corollary of the argument that social networks draw people into volunteering is that volunteering for an organization expands and changes the individual's social networks. One example

of this is the fact that the duration of membership in a voluntary organization tends to increase the number and strength of social ties an individual maintains with other group members (McPherson, Popielarz and Drobnic, 1992: 158). In a similar manner, it would be expected that participation in more than one voluntary organization would increase the size and diversity of an individual's networks. These are empirical issues that can be addressed by future research and by the application of these models to data, either longitudinal or life-history data, that provide specific information about the temporal sequence of the events these variables measure.

The availability of the national surveys on volunteering is a valuable resource for the study of these activities, and while the cost of conducting longitudinal surveys as formal panel studies is often prohibitive, it does not entail a substantial increase in cost to include event-history information for the social resource and volunteering variables in cross-sectional surveys. This would greatly improve our ability to specify the temporal order of variables in the model, and would permit investigation of issues surrounding the temporal sequence of these activities. However, because such data are not available at this time, estimating these models from the cross-sectional data relies on the accuracy of the assumptions made. Future research with more appropriate data can test whether or not these assumption were tenable.

The Structural Model of Volunteer Effort

One important innovation in the analysis of volunteering undertaken in this dissertation is the development and testing of a model of volunteer effort that incorporates the structural relationships between four components of effort. Nowhere in

the previous research literature has the analysis of the time and effort put into volunteering been examined as a related set of measures that capture the different ways individuals can participate in and contribute to voluntary organizations. This acknowledges that understanding the amount of effort people devote to volunteering is not simply a matter of looking at the number of hours they volunteer each year. Effort can also take the form of a long-term commitment to providing volunteer labour for a particular organization, or in providing labour to multiple organizations, or by working at a diversity of tasks for the organizations. From the perspective of the voluntary organization and its labour needs, hours volunteered is perhaps the most important consideration. For individuals, however, commitment to volunteering may not simply equate with the number of hours they can devote to these activities, but instead may be expressed by their willingness to volunteer for more than one organization, or to do the many different tasks required in one or more organizations. It may also show in their commitment to providing volunteer labour over time. The model of effort indicates that commitment to volunteering in all these forms does tend to increase hours volunteered, but the relationship is not fixed. Individuals can increase their involvement in volunteering in ways that do not necessarily mean they will substantially increase their hours volunteered. These components of effort are not unrelated parts of this activity but are linked in a very specific way, and the structural model sets out the connections among the four components as a sequence of causes and effects that ultimately result in the number of hours volunteered each year.

In addition, by identifying the four components of effort, it is possible to examine how social resources affect the different components of volunteer effort in different ways.

Combined with the use of structural equation models that allow for the effects of social resources to be estimated as parts of a system of equations, this provides a more elaborate understanding of the process that generates each aspect of volunteer effort.

A good example of this is seen in how attendance at religious services affects volunteer effort. In much of the literature on hours volunteered, being active in a religious congregation has a strong positive effect on hours volunteered. The question this research raises is whether this effect is related to the way an individual's religious beliefs are thought to foster altruistic values and behaviours, or is a result of being actively engaged in a social network that centers on their congregation (Wilson and Janowski, 1995: 132; Becker and Dhingra, 2001: 316-317). The model of volunteer effort cannot definitively determine which effect is more important, but it does suggest that the latter is more consistent with the results. Service attendance increases effort only by increasing the individual's commitment to volunteering over time. If regular attendance encouraged volunteering by fostering altruistic values, one would expect this to show up as increased participation at all levels of effort. Instead, it increases the tendency to volunteer over time for one organizations and this is consistent with being involved in a network of strong ties, centered on the congregation, that sustain participation. Being able to identify the impact of service attendance on one component of effort begins to clarify what it is about a particular resource that promotes or inhibits volunteer effort.

The findings from the model of volunteer effort for all volunteers shows that all components of effort tend to increase the subsequent components. This is not surprising; the logic of the structural model is built on the expectation of how each component will impact the subsequent measures. What is interesting is that the strongest determinant of

the hours individuals volunteer is the number of organizations they volunteer for. The second strongest effect is how long they have been volunteering for any one organization and the weakest is the diversity of tasks they will undertake. This indicates that a major part of the reason some people contribute a large number of hours to volunteering is not so much that they undertake many jobs for one organization, but that they are involved in multiple organizations. The notion of the career volunteer who contributes a substantial amount of time may be true, but that career probably takes place in a number of organizations rather than as unpaid work for a single organization.

Nonetheless, the strength of the total effect that duration as a volunteer has on hours volunteered indicates that people who maintain their commitment continuously over extended periods of time are also an important source of volunteer labour. For these volunteers the hours they devote to volunteering increase the longer they have been involved with an organization. Since duration also has a positive effect on tasks performed, these are very much the core volunteers Pearse identifies as the stalwarts in providing labour to voluntary organizations (1993:10). In a similar way, the diversity of tasks undertaken by volunteers is not affected as strongly by the duration of volunteering as it is a consequence of being involved in multiple organizations. Core volunteers may be available for different tasks in one organization, but undertaking diverse tasks is as much a result of participation in different organizations with different labour needs. All of these results indicate that our understanding of volunteering can benefit from looking at how volunteers provide effort within a particular organization, across multiple organizations, and over time.

Perhaps the most important substantive implication to be drawn from the specification of a structural model of effort is what it implies for the studies of effort that focus only on hours volunteered. Since almost all the research to date falls in this category, these implications are widely applicable. These studies have not been very successful in accounting for volunteering, if the explained variation in hours volunteered is used as the criterion. Among models that include mainly human capital and economic resources as predictors, the variation accounted for is typically quite low, between 4 and 8 percent (Sundeen, 1988: 565; Day and Devlin, 1996: 445; Freeman, 1997: 153). In the reduced form of the equations in the analysis of the Canadian model, the explained variation in hours volunteered is not much higher (9%). But when the other components of volunteer effort are included in the model, the explained variation rises to 30%. It is evident that accounting for hours volunteered is much improved by the inclusion of other measures of effort. Doing so not only increases the ability of the models to account for hours volunteered in statistical terms, it also much improves our understanding of the process that generates hours volunteered and how social resources affect this process.

Even at a glance it is evident that very few social resources actually have a direct effect on hours volunteered. In fact, only resources that represent the time constraints individuals face in everyday life directly affect hours. The self-oriented motive variable also affects hours directly, but this is clearly a consequence of volunteers taking a practical view of acquiring or using skills through volunteering. The other human, economic and social capital measures do not affect hours directly, instead, they affect the other components of volunteering and in doing so have an indirect effect on hours volunteered. Research that focuses only on hours volunteered as the dependent variable

runs the risk of explaining the impact of connections to social resources as direct effects when these actually do not exist. Lacking an understanding of how the influence of social resources is mediated by the other components of effort can only obscure the process that determines hours volunteered.

Connecting the Two Models of Volunteering

The social resources model was applied to two distinct aspects of volunteering, and having developed a model of each process for Canada as a whole provides a unique opportunity to look at the results of the two in combination. That is, with two models developed from the same survey data and using the same set of explanatory variables, it is possible to see how the information one model provides about the likelihood of volunteering increases our understanding of the information the other provides about how individuals provide time and effort to voluntary organizations. In particular, the first model shows how social resources enable, encourage, or inhibit individuals from becoming involved in volunteering, while the second shows how those same social resources affect how much, and in what ways, effort is expended. The intent in looking at the combined results is not to re-examine the effects of all the variables in both models, but rather to point to some of the more interesting connections and interpretations that can be drawn from the two models.

In one sense, the models can be considered to be ordered temporally since a reasonable description of the volunteering process would have an individual first making the decision to volunteer, either because they have chosen to do so, because they have the time to do so, or because they have been asked. Then, in the context of being a volunteer,

they tailor their effort as resources and conditions dictate. While the decision to volunteer can at the same time also be a decision about how much time to commit to volunteering, decisions about the allocation of effort are not irretrievably bound to the decision to volunteer. The essence of volunteering is that individuals can adjust their level of effort to conform to their desires or needs, and the needs of the organizations they volunteer for, particularly in the short-run. In the limiting case, the individual can always quit being a volunteer entirely. Thus the decision to volunteer is distinct from, but related to, the decisions about effort expended. The two models developed here show how social resources prompt individuals to volunteer (or to continue volunteering) and then how the same resources determine how and where their effort is directed. This approach provides a new and informative way to look at these two sides of the volunteering dynamic.

Education

The first instance where the two models shed further light on volunteering is the case of education. Higher education increases the likelihood that a person will be a volunteer and directly increases the number of tasks they perform as volunteers. In the literature, explanations for this effect range from the idea that those with more education have more skills, they are more disposed to prosocial behaviour, they are more aware of opportunities to participate, or that education represents a dominant status that exposes them to being recruited by more organizations. All of these may account for the higher probability of being a volunteer, but the results from the model of effort shows that the increased hours that the educated devote to volunteering comes about because they tend to do more diverse tasks for their organizations. The educated do not tend to volunteer for

longer spells, nor do they volunteer for more organizations, both of which tend to counter all but the first explanation. If education implies a more prosocial disposition one would expect education to increase an individual's long-term commitment to volunteering. If it increases their awareness of opportunities to volunteer or increases the likelihood of being recruited, one would expect them to be active in more than one organization. But this is not how education affects effort. The fact that education increases hours volunteered by increasing the range of tasks undertaken is most consistent with the idea that educated volunteers' skills are both scarce and in demand, and thereby enable them to undertake a wider range of jobs for the organizations in which they volunteer. By doing more jobs they also tend to contribute more hours. Moreover, when we control for the number of tasks they do, there is no increase in the amount of time those with more education devote to volunteering. At any given level of tasks undertaken, those with less education devote as many hours to volunteering as do the more educated. This also fits the demand side of the volunteering equation; if the educated are in fact recruited more often, it is because they qualify for a greater diversity of tasks than those with less education. These results point to the need for more detailed information about the jobs volunteers actually do, and the time they spend on these jobs.

Income

The role of income in volunteering is clarified by looking at the two models in combination. In the decision to become a volunteer, income has a fairly strong positive effect but in the model of effort, income does not appear at all. This is strong evidence against the simple interpretation that those with higher income can, in effect, "purchase"

more volunteering, if it is treated as a consumption good, or alternatively can afford to invest more time in volunteering, under the investment in human capital model. Either interpretation implies that higher income should increase effort since this would be purchasing or investing in more of the activity. This does not happen, so these interpretations of volunteering are not consistently supported across the two models.

The pattern of effects for income also speaks to the relevance of the dominant status interpretation of volunteering. If income is taken as an indication of dominant status rather than just in terms of its buying power, the results from the models clarify how dominant status works. The dominant status explanation suggests that individuals in dominant social positions have a greater stake in their communities, have greater or more appropriate social and civic skills, and will be preferentially recruited by voluntary organizations. If dominant status individuals do become volunteers for any of these reasons, they do not provide greater effort because of them. If they have a greater stake in the community, they do not put more effort into volunteering because of it. Nor, as was pointed out for education, do their social or civic skills encourage them to undertake more diverse tasks, and higher recruitment does not lead to participation in more organizations. In some ways, these results support Freeman's description of volunteering, particularly when it is the results of being asked to do so as a conscience good: "public goods to which people give time and money because they recognize the moral case for doing so and for which they feel social pressure to undertake when asked, but whose provision they would just as soon let someone else do" (1997: 141). Although income is a poor measure of dominant status, it is definitely a characteristic that will correlate highly with dominant status, and certainly is among those attributes that are commonly taken to

indicate dominant status. As noted earlier, considerable clarification of the meaning and measurement of dominant status is required in order to examine these issues with more rigour.

While one model shows that income does not have the expected direct effect on volunteer effort, the analysis of the effects of income on social capital in Chapter Four indicates that there yet may be hope for the income effect. In that analysis, it was shown that income has a strong positive effect on the social capital variable with the strongest effect of the likelihood of volunteering, the number of types of organizations in which a person participates. Other tests of the impact of income on other social capital variables, not reported in the analysis, also show a positive effect for income. These results suggest that income may have an indirect effect on volunteer effort through its impact on social capital, a possibility that the structure of the volunteer effort model excludes. In this way, dominant status may have an effect on volunteer effort by increasing the size, diversity or stability of individual's social networks, which in turn increase effort. But if this is the case then the question becomes how and why dominant status affects these aspects of social networks, since it does not have a direct effect on effort. Dominant status may encourage people to be volunteers, but it does not encourage them to work harder at volunteering. It may make their networks larger, more diverse or more stable over time, and this will increase effort. However, nowhere is dominant status seen as the only factor which determines these network characteristics, so its ultimate impact on volunteer effort is uncertain at best.

Paid Work

When the information in the two models is seen in combination, the way in which working in the paid labour force affects volunteering is illuminating, especially because it has quite different effects for men and women. The model of being a volunteer shows that working for pay reduces volunteering for both men and women. For women, working also reduces the effort they put into volunteering by reducing the hours they will volunteer. However, for men, hours spent working actually increases the length of time they spend as volunteers and this mitigates some of the negative effect paid hours have on volunteered hours. Both of the models control for children in the home, so this difference between men and women is not due to child-related factors. This might be a dominant status effect, since being employed full-time has been suggested as an indicator of dominant status (Smith 1994: 247). If this is the case, then it also indicates that full-time employment is a dominant status for men but not for women, otherwise the same off-setting effect would be observed for both genders. However, it may also be the case that for men but not women, working full-time is indicative of the stability in their occupational lives. In this situation, men may have more time to devote to other activities and this allows them to remain active as volunteers for longer spells. For women, in contrast, working full-time forces a trade-off between employment and discretionary activities, mostly because they take responsibility for work in the household to a degree that men do not. This issue is examined in greater detail when the effects of children in the household for the volunteering of men and women are described.

Social Capital

Human capital and economic resources are important for volunteering, but one result that clearly stands out in both model of volunteering is the importance of social capital determining whether or not people volunteer and then in determining how much effort they will devote to volunteering. In both models, social capital measures are the strongest predictors of being a volunteer and of the amount of effort that is devoted to volunteering. The single exception is the duration as a volunteer in the effort model where age has a stronger effect than any of the social capital variables but the connection between age and duration simply reflects the fact that older people have had more opportunity to have volunteered for longer spells than younger people.

Among the social capital variables, two stand out in terms of their strong positive effects on both the likelihood of being a volunteer and the effort individuals expend in volunteering. These two social resources, the number of organizations the individual takes part in and the diversity of direct help they provide to others, are measures of the character of the individual's social networks. The first represents the size and diversity of their networks and thus the extent of weak ties they maintain, while the second represents the extent to which they maintain strong ties within their personal networks. In both models, weak ties have a stronger overall or total positive effect on volunteering than do strong ties. Thus it would appear that large and diverse networks of weak ties are more effective at encouraging or drawing people into being a volunteer and into giving more effort as a volunteer. Strong ties also encourage volunteering and effort, but at a slightly lower level. But the disconcerting result is that both weak and strong ties affect precisely the same components of effort in the same way. Both strong and weak ties increase the

likelihood of being a volunteer and affect the same three components of effort, the model cannot not disentangle the different ways strong and weak ties work to encourage volunteering or volunteer effort.

This indeterminacy in the model undoubtedly arises from the fact that the measures used to characterize the individuals' social networks, their network ties and how those ties affected their volunteering are poor proxies of these attributes. Participation in voluntary organizations may expose individuals to a more diverse range of other individuals (weak ties) but they may also develop fairly strong network connections within those organizations. In the same way, direct helping may indicate the extent of strong ties in personal networks but it does not identify to whom those ties connect the volunteers. A substantial number of their strong ties may connect them with people in the organizations for which they volunteer or they may also be providing direct help to those with whom they maintain relatively weak ties within an organization. As a result, the two measures of network size, diversity and ties strength may in fact measure both types of connections, but with one measuring size and diversity and the other measuring tie intensity overall. This indicates the need for better information about the structure of the individual's social networks, the connections within and between parts of their networks, and the connections between their networks and the organizations they participate in and volunteer for. In the end, neither model can definitively say how both strong and weak ties operate to encourage volunteering and effort; they just show that they do.

Religious Service Attendance

The effect of attendance at religious services exemplifies the uncertainty about how network ties act to promote volunteering. Being involved in a religious congregation is a unique source of strong ties, based on a community of faith, that draw people into types of volunteering that are connected to their congregation (Becker and Dhingra, 2001:330). However, Wuthnow's research shows that being part of a congregation can also be a source of important weak ties that bridge heterogeneous groups in society (2002: 670). In the model of the likelihood of volunteering, being active in a congregation does increase volunteering, and in the model of effort it would appear that these strong ties act to maintain the volunteer's commitment over time because attendance directly affects duration as a volunteer. Weak bridging ties should act counter to this tendency, yet the models are unable to separate the possible effects of these two in terms of how a person interacts with their congregation. This question is particularly important because the religion-region model of the likelihood of volunteering shows that social capital resources, such as participation in voluntary organizations, attendance at religious services, and children at home, operate differently for Protestants and Catholics in Canada. Since these all relate to the supposed nature of their social networks, being able to understand how and why these differences come about requires a more specific understanding of those networks. In short, the impact of social networks is so large and pervasive for volunteering that clearly more extensive information about them is needed to separate and identify how network characteristics, such as size, density and diversity, operate, and how they may operate differently across sub-groups of the population.

Children and Household Size

The complex question of how children affect their parents' participation as volunteers is more fully understood by looking at the effects of children in the two models. The presence of very young children (five and under) reduces the likelihood of volunteering, directly reduces the number of tasks undertaken, and indirectly reduces the number of hours volunteered. Parents with young children are overall less likely to participate as volunteers, but among those who do volunteer, having young children only reduces the tasks they undertake. These parents do not necessarily stop their volunteering or reduce the number of organizations they volunteer for. Instead, they simply reduce the number of tasks they perform for these organizations and thereby reduce the time they devote to volunteering.

The consequences of having children of school ages in the home are considerably more complex. The patterns of effects for children at these ages on the likelihood of volunteering suggest that as children enter school ages, parents are drawn into volunteering, and remain there until the children reach the ages where they are forming their own social networks and are involved in activities that do not require their parents' participation to the same degree. The effort model reinforces this interpretation because there are no effects for children at specific ages, but only for the size of the household in general. For women, the increased participation as a volunteer that school-aged children bring about takes the form of increased continuity in their commitment to volunteering over time, increasing the number of organizations they volunteer for and the number of tasks they do. Among men, in contrast, increased participation does not result

in a sustained commitment to volunteering over time, although it does increase the number of organizations they volunteer for and the tasks they do. Thus it appears that as the number of school-aged children increases, perhaps because the children are involved in different organizations, parents tend to increase the number of organizations they volunteer for. With different children involved in different organizations that need different kinds of help, the number of tasks parents are involved in also increases. For both women and men, however, the direct consequence of increasing family size is an overall reduction in hours volunteered. That is, when the number of organizations volunteered for and the number of tasks undertaken is held constant, both men and women tend to reduce their hours volunteered as household size grows. For both men and women, however, the increase that occurs in other areas of effort in response to school age children tends to offset the reduction in hours volunteered. For men, this effect results in a very slight increase in hours volunteered, but for women the effect is a substantially larger increase in hours volunteered. Qualifying this fact is that despite these effects, men still volunteer more hours than do women. What these patterns suggest is that women not only take responsibility for the bulk of unpaid work in the home, they also increase the hours they volunteer in response to the activities of their children more than do men. Since men are already participating at a higher level of hours, their response to children may simply involve re-allocation of their volunteer hours from their own interests to those of their children. For women, whose level of participation in terms of hours is lower on average, the effect of school-aged children is to cause them to actually increase their hours volunteered substantially.

These patterns for the effects of family size are based on the assumption that the changes in volunteering that occur when children enter the school-years is mostly due to how parents respond to the social involvements and needs of their children. However, the data do not establish this connection in definitive terms. It is an assumption that the changes occur in response to children, and the results in the models fit that explanation quite nicely. Nonetheless, since there is no information on whether or not specific instances of volunteering are directly the result of the presence of children, the interpretation is still based on that basic supposition. This is one area where data that ascertains the parents' response to their children in terms of volunteering needs to be more carefully crafted and collected.

Cultural Capital

The cultural capital variables in the social resources models of volunteering and effort present a picture that is consistent with the difficulties with their conceptualization and operationalization. In the model of the likelihood of volunteering, only two of the five cultural capital measures are shown to have an impact on volunteering, and in the effort model, the impact of even these two are supplanted by two fairly straightforward measures of the orientation or goals that volunteers assign to their efforts. The first model suggests that having been exposed to volunteering and the value or benefits of volunteering as a youth, and having a positive view of life promote participation as a volunteer. These quite conceivably could produce a positive orientation towards volunteering, but the effort model suggests that this positive orientation can encompass both a self-directed orientation that focuses on the instrumental benefits available through

volunteering, and a more prosocial and other-directed orientation that focuses on the contributory aspects of volunteering. Important in this regard is the fact that in the effort model, volunteers are not being separated into those who have only a self-directed orientation versus those who have only an other-directed orientation. Rather the variables measure how much of each type of orientation each volunteer ascribes to their activities. In the effort model, the intriguing result is not whether one orientation causes more effort than the other, they both increase effort. Instead, it is the way each type of orientation affects the different components of effort that is interesting and informative. Those with a high level of self-orientation in the goals or purposes of volunteering tend to increase the aspects of volunteering that in practical terms provide the most direct way of achieving these goals. Thus those who want to acquire, improve or use skills and experience, or just want to spend time with friends, do so by simply doing a more varied array of tasks and by devoting more time to volunteering. It does not necessitate volunteering for more organizations or being consistent in their volunteering over time. On the other hand, having other-directed goals and values does increase effort at all levels but mainly by increasing the individual's commitment to volunteering over the long term.

The question these results raise is whether cultural capital, as it is proposed in the social resources model, is a useful conceptualization of the social resources represented by a particular attachment to the culture of benevolence. The answer is probably yes, but with the understanding that this commitment is better seen as a resource that other individuals or organizations access in order to encourage participation in volunteer activities. In this situation, the information needed to understand how cultural capital influences volunteering, is information about those others. As a personal resource cultural

capital becomes equated with the motivation to volunteer and it is difficult to separate the cause and effects characteristics of motive-like explanations of behaviour unless the temporal order of the motive and behaviour can clearly be established.

Evaluating the Social Resources Model of Volunteering

The discussion to this point shows that the application of the social resources theory to two related aspects of volunteering can provide a description of volunteering that adds considerably to our understanding of how resources impact different components of volunteering. Both models show that human and social capital, particularly the character of social networks, are important for volunteering. They also show that economic resources, other than those that impose constraints on discretionary time, may have an impact on who volunteers but do not affect how much effort individuals will devote to volunteering. For the fourth type of resource, cultural capital, the results are mixed and indicate that this part of the theory requires considerable more attention in its theoretical formulation in order to clearly indicate how cultural capital resources will impact volunteering and how these resources could usefully be measured.

For all parts of the theory, a large degree of uncertainty enters the interpretation of individual-level effects because the characteristics of the context or demand side of volunteering is unaccounted for in the data on volunteering. In this sense, the social resources theory is useful as a supply-side model of volunteering---it identifies the social resources that enable people to volunteer and how these resources shape the way they participate as volunteers. However, the supply of labour is matched by a demand for that labour that is shaped by the structure of the organizations that employ volunteers, by the

nature of the third sector in which the organizations operate locally, and by the policies and actions of governments at all levels. These all establish the social context within which the demand for labour is created in the volunteer labour market and can have an important impact on determining what resources are relevant to volunteering. For the study of volunteering at the level of the individual, more information on the demand for volunteer labour and the context in which this occurs is needed. The findings from one model for regional differences in volunteering speak directly to this issue. The exceptional levels of volunteering in the Prairies provinces are not due to differences in the way social resources connect to volunteering but instead must be due to conditions in the regional context of volunteering that are different enough to generate substantially different patterns of participation as volunteers. Without information about differences in these contexts, it is difficult, if not impossible, to accurately connect the patterns of participation to their potential causes. This means that national surveys on volunteers need to record more than just the attributes of the volunteers themselves, but also need to collect more extensive information about the organizations in which that volunteering takes place.

In both applications of the social resources theory, the resource measures were treated as a set of exogenous variables without the specification of a causal structure among them. As was suggested in Chapter Two, the model of social resources would benefit from an explicit formulation of the theoretical and empirical connections between the various components of social resources. In particular, it was suggested that social and cultural capital are, in part, a product of the individual's human capital and economic resources. In turn, economic resources are partially determined by the individual's human

capital. Operationalizing these connections in the social resource models of volunteering would have two important effects. First, it would be possible to identify the indirect effects human capital and economic resources may have on volunteering through their impact on social and cultural capital as intervening variables.

Second, specifying the causal structure among the resource variables would also add substantively to our understanding of the social dynamic involved in volunteering. Because social capital variables in particular are such strong predictors of volunteering in both models, understanding how social capital varies among individuals as a consequence of their human capital and economic resources would help explain why differential social capital effects are observed across subgroups in the population. As is stand, differences in social capital, such as differences in the size and density of social networks, are unexplained by the models. Determining how these depend on prior characteristics, such as education, income, class or status would increase our understanding of how social resources affect volunteering. In the present context, these procedures would not increase the explanatory power of the model, nor would it affect the nature of the direct effects that were found, but it would provide more information on which to base an interpretation of the impact of resources on volunteering. As noted earlier, the statistical technology for doing this for volunteer effort currently exists and should be the next step in elaborating the model of effort. The model of the likelihood of volunteering must await developments in statistical techniques that make such an elaboration possible.

Group Differences in the Models of Volunteering

The application of the social resources model to two examples of group differences also shows that empirical research on volunteering needs to go beyond identifying mean differences between groups if it is to advance our understanding of how the process of volunteering varies across different groups. The research also needs to focus on how the resources that impact volunteering operate in distinctive ways for different groups and thus begin to account for why those differences might exist. Only in this way can hypotheses about specific group differences in the social dynamic be evaluated and a better understanding of group differences gained. The results from both models of volunteering show that there are important differences between groups that are not captured by the inclusion of dummy-coded group variables in multivariate models of these processes. In the model of the likelihood of volunteering, for example, it was demonstrated that there are significantly different effects for education and several of the social capital variables across religion groups. The model cannot account for this difference, but it does direct attention to factors that might account for this result.

In the model of volunteer effort, the appropriate evaluation of group differences also leads to a better understanding of how resources affect different groups. In the gender model of effort, for example, household size has a distinctly different effect for men and women. Since this variable represents the number of children in the home, the implications of this difference are important to understanding how men and women allocate their time among the demands of home, work and volunteering. As household size increases men show a small indirect and positive effect of the hours they volunteer. In contrast, as household size grows, women show a much larger indirect positive effect

on hours volunteered. For women this occurs because they tend to sustain their commitment over time to volunteering as their families grow to a greater extent than do men. Overall, more direct tests of groups differences in the models of volunteering provide a better understanding of how social resources affect both the likelihood individuals will volunteer and the amount of effort they will devote to volunteering.

Implications for the Third Sector: What Can be Learned from These Models

This research project was not undertaken with the prime intention of improving the ability of organizations in the third sector to recruit and employ volunteer labour. The intent was to develop two national models of the connections between social resources and volunteer activities. Nonetheless, the results of this exercise have implications for organizations in the sector by shedding light on who volunteers and how they contribute effort to the organizations they volunteer for. The overwhelming importance of network characteristics in promoting volunteering is one area that organizations can pay attention to. Connections in social networks are the main vehicle that brings people into volunteering and determines how much effort they will devote to an organization. Organizations that encourage current members and volunteers to actively recruit through their own networks are more likely to succeed in bring new people to volunteering and will tend to ensure that their recruits provide a higher level of effort and commitment. Interestingly, it may prove a useful strategy to actually recruit people who are already volunteering for other organizations, since this tends to increase the hours these people volunteer. The positive impact many of the social resources have on the diversity of tasks volunteers undertake reinforces a recommendation that comes out of a qualitative study

of care-giver volunteers in Ontario. One recommendation was to involve new recruits in a short-term commitment to a particular task, and gradually over time increase their involvement (Phillips, Little and Goodine, 2002:5). The social resources model of effort implies that by eventually increasing the diversity of the tasks available to them, this strategy would increase the hours they were willing to volunteer. The model also points to the importance of providing volunteers with the opportunity both to use their skills and acquire new ones, as well as feeling that the work they do is socially valuable. The positive effects of assistance from an employer indicate that this can expand both the number of organizations and tasks that volunteers take on. Finally, the models show that the main reasons for reducing their level of involvement for most volunteers arise from the competing demands of home and work. Efforts to accommodate these restrictions on volunteers' available time on the part of voluntary organizations can increase the effort individuals are willing or able to devote to their volunteering.

Conclusion

A significant amount of the goods and services that people make use of in society are provided by third sector organizations. These organizations depend to a large extent on unpaid volunteer labour to provide those goods and services to their members and in many cases, to the public at large. Understanding the factors that determine how that labour is supplied to those organizations is essential in understanding how to increase its supply and how to better employ the labour that is available. But understanding the process is also important for understanding volunteering as a contributory behaviour and how it acts as a form of civic engagement. The research undertaken here did not look

explicitly at these issues, but its findings do have implications for both of these perspectives on the role of volunteering in society, although to address these questions would require a substantially different formulation of the models and the population of volunteers to be studied. The research reported here choose to start with a broad definition of the volunteer as a way to provide a comprehensive baseline for further research in this area.

The research undertaken provides the first structural models of the social dynamic that underlies the decision to volunteer and the allocation of effort to volunteering. For both aspects of volunteering it finds that the social resources theory provides an informative account of the behaviour in question. In addition, the specification of structural causal models provides insights into the processes that clarify the connections between the characteristics of individuals and participation in voluntary organizations. There are limitations to these models, largely because they are estimated with cross-sectional data, but the relationships identified are, by and large, in accord with the previous research in the area. The models also show that the data that are currently available to study this behaviour are less than ideal. Understanding in greater detail the dynamics of the social process that determine who volunteers and how much effort they can be expected to contribute, requires substantially more information on the life-history of volunteers and non-volunteers, and on the contexts in which volunteering takes place.

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Appendix A

Statistical Procedures

Logistic Regression Procedures

The substantive analysis in Chapter Four involves estimating a structural model of the likelihood of volunteering using logistic regression. Some of the basics of this model were discussed earlier, but in this section the logistic model is formally presented.

Given a binary variable Y that is coded 1 for volunteers and 0 for non-volunteers, the mean of Y is the proportion of the sample who are volunteers. In the NSGVP sample of Canadians over 18 years of age, 27.0% were volunteers, so the probability of being a volunteer, π , is 0.270 in this sample. It is possible to estimate a linear model that predicts the probability of being a volunteer using ordinary least squares regression. However, there are problems with this approach because both the assumptions necessary for using least squares are violated and the functional form of the linear model is not appropriate for predicting probabilities (Long, 1997: 38-40). One solution is to use an approach based on logistic regression procedures. These assume that the probability of being a volunteer is a non-linear function of the independent variables. Converting the probabilities into the log odds of volunteering produces models that are linear in the coefficients and can be estimated with maximum likelihood procedures.

Another way to express the probability of being a volunteer is as the odds of being a volunteer. If π is the probability of being a volunteer, then the probability of

being a non-volunteer is $1-\pi$, and the odds of being a volunteer is the ratio of these probabilities:

$$\text{Odds}_{\text{volunteer}} = \pi / 1 - \pi$$

For the NSGVP data the odds of being a volunteer is $0.261/(1-0.261) = 0.353$. The odds, or the odds ratio as it is sometimes referred to, can be converted to the log odds of volunteering by taking the natural logarithm of the odds. This, the logit (Odds), can then be modeled as a linear function of a set of independent variables. The logistic model is:

$$\text{Ln}(\pi / 1 - \pi) = a + b_1X_1 + b_2X_2 + \dots + b_kX_k + \varepsilon$$

This equation states that the log odds of being a volunteer is a linear function of a set of k independent variables $X_1 \dots X_k$ and the error term ε . The advantage of using the logistic transformation is that the underlying mathematical theory is well defined and the functional form of the model is appropriate for modeling probabilities (Menard, 1995: 13). Unlike ordinary least squares, the logistic equation can not be solved directly but must be estimated by using maximum likelihood procedures. These procedures produce a chi-square distributed statistic, usually expressed as $-2 \times \text{Log-Likelihood}$ or $-2LL$, that measures the degree to which the estimated model fits the data, and represents the deviance or deviation in the data. Estimation procedures in logistic regression begin with a model that contains an intercept but no independent variables. The log likelihood produced by this model is the baseline deviance in the sense that it represents the fit of a model that contains no information from the independent variables. The larger $-2LL$, the poorer the fit to the data. This baseline deviance is analogous to the total variation in the dependent variable to be explained in OLS regression. The next step is to estimate a model that contains both an intercept and the independent variables and evaluate its fit to

the data. This model produces a change in chi-square that is due to the addition of independent variables to the model and will produce a reduction in the log likelihood, an improvement in the fit to the data. This is also used as the basis for calculating a pseudo- R^2 that indicates the proportion of the baseline deviance (the total variation) that the model accounts for (Hosmer and Lemeshow, 1989: 148).

The model X^2 is used as a test, similar to an F-test in OLS regression, to determine whether or not the variables in the model provide a statistically significant reduction in the log likelihood---the unexplained deviance. The model chi-square tests the hypothesis that the coefficients $a, b_1, b_2 \dots b_k = 0$. If the model chi-square is large relative to the degrees of freedom used to estimate the parameters the null hypothesis is rejected and the model is said to significantly improve the fit to the data as compared to the intercept-only baseline model.

As with OLS regression, the model X^2 is a global test of all the variables in the model, but does not test the significance of individual variables. The logistic regression procedure does produce a test for each variable in the model based on the Wald statistic, which serves as a t-test for each variable. These can be used to make preliminary decisions about which variables may or may not be in the model, but when the regression coefficient is large, the Wald test tends to produce an overly conservative test for a single coefficient (Norusis, 1997: 5). The more appropriate test for the significance of a single variable is its contribution to the model X^2 . In the procedures used to generate models, the t-test is used to remove an effect, whether a variable or an interaction term, from the models, but in each case the effect is then tested by adding it back into the model on its

own and evaluating its significance in terms of contribution to the fit of the model as indicated by the reduction in X^2 it produces (Tabachnick and Fidell, 1996: 599).

One important characteristic of the logistic functional form is that the effect of an independent variable on the probabilities represented by the dependent variable is not constant across values of the independent variable. Unlike OLS coefficients, where a unit change in the independent variable produces a constant change in the dependent variable regardless of the what value of the independent variable takes on, this is not true of the logistic regression coefficients. Independent variables do produce a constant change in the log odds of volunteering, but not in the probability of volunteering. Because the meaning log odds is not intuitively obvious, it is standard practice to present the logistic coefficients in both their raw (logged) form and in their exponentiated form. This converts the coefficients from effects on log odds to effects on the odds of being a volunteer.

The exponent of the logistic regression coefficient is a multiplicative factor by which the odds of volunteering change with each unit change in the independent variable (Jaccard, 2001: 8). The effects of the coefficients can also be converted to effects on the probability of volunteering, but the non-linear relationship between the log odds and probabilities means that the effect of an independent variable on the probability, how a one unit change in the independent variable affects the probability, depends on the level of the independent variable. The change in the probability is not constant across values of the independent variable. There are a number of ways to present the probability effects in these model, including calculating the probabilities for the minimum, maximum, or average level of an independent variable (Long, 1997: 64-66; Roncek, 1991: 515). For a

single independent variable these procedures are straightforward. When the model includes a number of independent variables, all of which must be assigned a value in order to calculate the relevant probabilities, the process becomes unwieldy. In the models developed here, logistic regression coefficients will not be routinely presented as probabilities, but rather as the exponents of the raw coefficients. In this form they represent the percent change in the odds of being a volunteer produced by a unit change in an independent variable. Thus a one unit change in the independent variable either increases or decreases the odds of volunteering by a multiplicative factor expressed as a percentage. For example, if the effect of religious attendance, measured in weeks per year, is 0.045, the exponent is $e^{0.045} = 1.046$. This means that a one unit change in religious attendance increases the odds of volunteering by 1.046 times. Converting to a percentage shows that a one unit increase in attendance increases the odds of volunteering by $(1.045-1)*100 = 4.6\%$.

The relative impact of the independent variables can be compared by using the percentage change in the odds, but as with ordinary regression, the units of measurement will not be the same and the substantive meaning of a one unit change in each case is not directly comparable. To allow for these types of comparisons, two procedures are followed. As with standard regression, it is possible to calculate a standardized logistic regression coefficient, and this will be done for some of the results presented. However, the standardized coefficients are expressed in terms of the log odds of volunteering and cannot be converted to a non-logarithmic form. The standardized coefficients represent the change, in standard deviation units of the log odds of volunteering, produced by a standard deviation change in the independent variable. To evaluate the relative strength

of two independent variables the standardized coefficients are useful, but their substantive meaning is less than apparent. Another way to compare the effect of independent variables is to determine the change in the odds that would occur if the change in the independent variable spanned the entire range of its possible values. This effect can be calculated simply by multiplying the percent change in the odds by the range of each independent variable. For example, if the percent change in the odds due to the voting variable is 15%, and voting has a range of 0 to 3, while the change due to religious attendance is 4.6%, with a range of 52 weeks, then the relative change in the odds of volunteering over the range of values for each variable is $15\% * 3 = 45\%$ for voting and $4.6\% * 52 = 234\%$ for religious attendance. Although the change in the odds for a unit change in voting is three times as large as the change for religious attendance, the latter has a much larger effect across the range of its scores. This does not avoid the problem of comparing different units of measurement, but it does give some substantive meaning to the impact of each variable on the likelihood of volunteering. It is important to note that these coefficients are being expressed in the odds of volunteering, not the probability of volunteering. A given percentage change in the odds is not equivalent to a similar change in the probabilities.

An important part of the procedures employed to evaluate the social resources theory is the use of interaction terms to test for differences between qualitative groups in the coefficients of the models. In logistic regression, interaction terms have the same interpretation as they do in linear regression. The coefficients attached to the main effects of group variable, coded as a set of dummy variables, are the changes in the intercept for the group represented by a particular dummy variable, relative to the intercept of the

reference group, and the coefficients of the interaction terms are the differences between each dummy variable group and the reference group, in the slope of the slope coefficient of the continuous variables involved in the interactions. Significance tests for these coefficients represent tests for group differences in mean levels (intercepts) and in the effect of the continuous variables (slopes) on the dependent variable (Jaccard, 2001). For group variables with more than two categories (more than one dummy variable), tests of significance between pairs of categories of the group variables (specific contrasts) can be accomplished by successively changing the reference group involved in the contrasts and re-estimating the model. This will produce all the relevant tests between categories of a group variable for both intercept and slope coefficients. Identifying differences across groups in the mean level of the volunteering and differences in the impact of the social resource variables on the probability of volunteering, clarifies variations across groups in the dynamic of this process. It identifies where in the model differences exist and thus provides more detailed information on which to base an account of those differences.

LISREL Procedures

The evaluation of the social resources theory uses a standard path analysis with four observed endogenous variables, representing the four measures of volunteer effort, and a set of observed exogenous variables representing social resources. The structural model is thus composed of four structural equations that represent the relationships among the four components of volunteer effort, and the effects of social resources on these measures. These equations are:

$$Y_1 = \gamma_1 x_1 + \gamma_2 x_2 + \dots + \gamma_k x_k + \zeta_1$$

$$Y_2 = \beta_1 Y_1 + \gamma_1 X_1 + \gamma_2 X_2 + \dots + \gamma_k X_k + \zeta_2$$

$$Y_3 = \beta_1 Y_1 + \beta_2 Y_2 + \gamma_1 X_1 + \gamma_2 X_2 + \dots + \gamma_k X_k + \zeta_3$$

$$Y_4 = \beta_1 Y_1 + \beta_2 Y_2 + \beta_3 Y_3 + \gamma_1 X_1 + \gamma_2 X_2 + \dots + \gamma_k X_k + \zeta_4$$

Y_1 through Y_4 are the four measures of volunteer effort. Y_1 is the duration as a volunteer, Y_2 , the number of organizations volunteered for, Y_3 , the number of types of tasks performed, and Y_4 , the number of hours volunteered. X_1 through X_k are the set of social resources indicators, and ζ_1 through ζ_4 are the disturbance terms associated with each endogenous variable. The effects of each measure of effort on subsequent measures of effort are represented by the beta coefficients, β_1 through β_3 , and the impact of the social resources variables on the effort measures are the gamma coefficients, γ_1 through γ_k . The exogenous variables, X_1 to X_k are allowed to freely correlate, indicating that the model does not specify a causal structure among these variables. The errors in the endogenous variables are estimated by the psi coefficients, ζ_1 to ζ_4 , and are assumed to be uncorrelated across equations (Joreskog and Sorbom, 1996: 158-160).

The advantage of using LISREL to estimate the models of volunteer effort is that these four equations are estimated as a single structural model. This produces estimates all of the coefficients in the four equations and provides a number of statistics, including the standard X^2 statistic, for evaluating how well the model as a whole reproduces or “fits” the observed data. In this case the observed data is the matrix of variances and covariances among all the exogenous and endogenous variables in the proposed model. The coefficients in the structural equations are estimated as parameters in a set of matrices representing possible interconnections among the variables in the model. In the path model represented by the four equations above, four parameter matrices are

estimated. The first matrix, the beta matrix, β , is a 4 by 4 matrix of effects of the four endogenous variables among themselves. Since the model of volunteer effort proposes a recursive structure among these variables, there are no instances of mutual causation where two variables are both cause and effects of each other. This implies that the beta matrix is a sub-diagonal matrix---non-zero parameters are estimated only for the lower half of the 4x4 β matrix. The parameters in the upper half of the matrix, which represent the effects of subsequent measures of effort on prior measures, are all set to zero. For example, the effect of Y_1 on Y_2 is estimated as β_{12} , but the effect of Y_2 on Y_1 , β_{21} is fixed at zero.

Each equation has a disturbance or error term ζ (psi), reflecting all the unmeasured factors that influence the Y variable (Joreskog and Sorbom, 1996: 144). These are also represented by a 4x4 matrix, the Psi matrix (ψ). Since the system is recursive, the Psi matrix is a diagonal matrix---the variance of each error term is estimated but because the errors are not allowed to correlate across equations, the off-diagonal parameters, the covariances among the error terms, are set to zero. The third matrix in the $k \times 4$ matrix of gamma coefficients---the effects of the k exogenous variables on the four endogenous variables. The gamma matrix (Γ) contains a parameter for the effect of each social resource variables on each of the four endogenous variables. The fourth and final matrix represents the variances and covariances among the exogenous variables ($X_1 \dots X_k$). This matrix, the Phi (Φ) matrix, is a full, free matrix. Because no attempt is made to model the causal structure among the social resources, the exogenous variables are allowed to freely inter-correlate.

In LISREL, parameters in all of these matrices can be either fixed or free. If they are free parameters, coefficients are estimated for each one. Fixed parameters are not estimated but are given predetermined values or are set equal to zero. Fixing a parameter to equal zero in any matrix implies that an effect or path does not exist in the estimated model. Estimating models with various parameters fixed or free is the procedure followed to develop and test models in LISREL. In the beta matrix, for example, the absence of reciprocal causal effects means that the β coefficients in the matrix representing these effects are fixed to equal zero. In the gamma matrix of effects of exogenous variables on endogenous variables, fixing a parameter to zero means that the exogenous variable has no direct effect on that endogenous variable. In the model generation process, models are developed by fixing or freeing parameters in the gamma and beta matrices.

In developing the volunteer effort model in LISREL, the coefficients of substantive interest are the parameters gamma and beta matrices. The gamma parameters are the direct effects of social resource variables on the four endogenous measures of volunteer effort and the beta parameters are the direct effects of the measures of volunteer effort on subsequent measures of effort. Because there is structure among the volunteer effort variables, the social resource variables and the prior effort variables can have both direct and indirect effects on subsequent measures of volunteer effort. The direct, indirect and total effects are produced by the program.

In evaluating the social resources model, two questions are of substantive interest. The first is how well the social resources variables account for variation in the measures of volunteer effort. The second related question is how well the model as a whole

reproduces or fits the observed data and focuses on the issue of whether or not the model can be taken to accurately represent the population from which the data are drawn.

To answer the first question, LISREL produces two measures of explained variation that are equivalent to the R^2 in ordinary least squares regression. One is based on the variation in each dependent variable explained by the structural equation, and one based on the variation explained by the reduced form equation for that variable. The R^2 for a given structural equation indicates the variation in the endogenous variable explained by all the variables in the equation, including the prior endogenous variables. Part of this R^2 is due to the effect of disturbance terms in the structural equations for the prior endogenous variables and is variation that is not explained by the social resource variables. In the reduced form equations, which excludes all endogenous variables, the R^2 represents the variation in the endogenous variable explained only by the social resource variables. The difference between the two R^2 for a given equation is the variation in the endogenous variable that is accounted for by the disturbance terms for the prior endogenous variables. In substantive terms, the R^2 from the structural equation represents the variation in the endogenous variable that is accounted for by the combination of social resources and prior measures of volunteer effort. The R^2 from the reduced form represents the variation accounted for by the social resources variables alone. Thus the reduced form R^2 is the appropriate measure with which to evaluate the contribution of social resources to the explanation of volunteer effort. The R^2 from the structural equations can be used to evaluate how well both social resources and prior volunteer effort variables account for variation in a particular measure of effort (Joreskog, 2000: 4).

Model generation in LISREL begins by estimating a saturated structural model.

This model contains a parameter for each potential path between exogenous and endogenous variables, as well as the paths among the endogenous variables. In the saturated model, the gamma matrix is full and free and the beta matrix is a free sub-diagonal matrix. In practice, this model is not substantively interesting but is a baseline against which more parsimonious models can be evaluated. To reduce the number of parameters in the model, the t-test associated with each parameter is used to remove those that are non-significant. The model is re-estimated and its fit to the data is evaluated with a X^2 statistic that represents the lack of fit between the covariance matrix predicted by the model and the observed matrix. This process continues until a satisfactory fit is achieved. At each step in this process, the program provides a set of modification indices for all parameters that are excluded from the model under consideration. These indicate the improvement in fit that would be achieved if an excluded parameter were returned to the model. In the model generation process, these indices are used to decide which parameters are returned to the models, starting with the parameter that provides the largest change in X^2 . The model generation process stops when the model provides an adequate fit to the observed data. For each model, the program produces a path diagram of significant effects, a table of raw regression coefficients with standard errors and the t-test values, and a table of direct, indirect and total effects in raw and standardized form.

The LISREL program produces a large array of statistics that can be used to evaluate whether or not the estimated model fits the observed data. Since the models are estimated using maximum likelihood procedures, the relevant fit statistics are derived from this procedure. The basic statistic is the goodness of fit X^2 . This is a formal test of

the hypothesis that the estimated covariance matrix is a perfect fit for the population covariance matrix (the observed matrix). Perfect fit means that the residuals, the differences between the two matrices are all zero, within the limits of probability. This test tends to be an overly stringent test, particularly in large samples or in data where the distribution of the exogenous variables departs at all from normality. Under these conditions the goodness of fit X^2 tends to reject almost every model estimated from the data. Because models, such as that proposed by the social resources theory, are more appropriately seen as approximations to reality rather than as exact statements of empirical truth (Cudeck and Browne, 1983: 147-148), the question in statistical terms is not whether or not there is perfect fit to the data, but how closely the model approximates the data. For this reason a number of alternate fit indices have been proposed in the literature. Rather than looking for a perfect fit between the estimated model and the population model, these indices assess how closely the estimated model fits the population model. Each of these defines “close fit” in different but related ways, and the standard practice is to use a number of these to evaluate how well the model approximates the population model. The first type of index compares the fit of the estimated model to a baseline model that contains no parameters. This statistic, adjusted for the degrees of freedom in the estimated model, is the adjusted goodness of fit statistic, AGFI (Joreskog and Sorbom, 1996: 122-123). The AGFI ranges from 0 to 1 with higher values indicating better fit and the standard rule of thumb is that values greater than 0.90 reflect reasonable fit (Jaccard and Wan, 1996: 87).

The second type of fit statistic is also based on the maximum likelihood function but takes into account the fact that in reasonably large samples the model is not expected

to hold exactly in the population. An estimate of this approximation is the population discrepancy function and an adjustment to this statistic that accounts for the number of parameters in the model is the root mean square error of approximation, RMSEA. Values of this statistic under 0.08 reflect fairly close fit and values under 0.05 reflect close fit to the population model. A significance test for this statistic tests the hypothesis that the RMSEA is less than 0.05 (Joreskog and Sorbom, 1996: 123-124). A third class of fit statistic compares the estimated model to the independence model which implies that there is no correlation among the exogenous variables. This statistic, the comparative fit index, ranges from 0 to 1 with values over 0.90 representing close fit. As noted in the literature, the recommended approach to model evaluation is to examine several of these fit indices. If they consistently show close fit, then there is reason to be confident that the model provides a reasonably good approximation to the data (Jaccard and Wan, 1996: 88). The program also produces a standardized that can be used to identify specific observed covariances that are not well estimated by the model. These fit statistics and the standardized residuals will be examined in order to identify which models provide a good approximation to the population model.

Cross-Validation of Structural Models

Empirical research on modelling the relationships among a set of variables can follow two strategies, depending on the intent of the researcher. If there is a well defined theory of the process under investigation it is possible to formulate a single model that reflects the particular set of hypothesized relationships among its components. With empirical data in hand a researcher can apply the model to the data. If the model “fits” the

data, the model is accepted, if it doesn't, the model is rejected. This is the strict confirmatory strategy (Joreskog and Sorbom, 1993:115). When the theory or prior research do not clearly indicate what empirical connections should exist, a second strategy, model generation, is typically pursued. This process begins with a set of variables that are suggested by the theory or by prior research, and proceeds to determine which inter-relationships are required to produce an empirical model that fits the data. Usually this involves estimating a large number of models with and without various relationships and repeatedly testing their fit to the data. This procedure encounters two problems --- the first potentially violates the logic of hypothesis testing in statistical theory and the second involves whether the results are generalizable to the population in question or are idiosyncratic to the sample used to generate the models.

The first problem is the question of the appropriate significance levels for repeated tests on the same sample. Since significance tests are repeatedly made on the same group of individuals, the tests are not independent. Statistical theory holds that at a given significance level (α = alpha-level) the true Type I error rate (rejecting a true null hypothesis) for k separate but non-independent tests is $k \cdot \alpha$ (Fox, 1997: 543). For example, for individual tests of 15 parameters (k) in a model using a nominal alpha level (α) of 0.05 for each test, where all the parameters are actually zero in the population, there is a $15 \cdot 0.05 = 0.75$ chance of rejecting at least one null hypothesis. In other words, there is a 75% chance of deciding that one or more parameters in the model are different from zero, when in fact all are equal to zero. For exploratory research based on model generation procedures, this is a real possibility.

One solution to non-independent significance tests is to employ a Bonferroni adjustment to the error level. This involves selecting an overall error rate (α_e) for all intended tests and then setting the error for each individual test (α_i) at a level that produces the overall rate. The Bonferroni adjustment is: $\alpha_e = 1 - (1 - \alpha_1)(1 - \alpha_2) \dots (1 - \alpha_i)$. For example, if $\alpha_e = 0.05$ is the desired overall error rate, then the error rate for each of 15 tests ($i = 15$) is 0.0034. This means that for any given test, the null hypothesis that a particular parameter is zero will be rejected only when the probability that it is zero is less than 34 out of a thousand. Clearly this puts severe limitations on testing model components. Only the very strongest effects in large data files would prove to be significantly different from zero under these conditions, particularly as the number of tests becomes large. In addition, in model generation procedures where it is difficult to anticipate the number of tests that will be required, it is often impossible to determine the appropriate a priori significance level to adopt (Neter, Wasserman and Kutner, 1990: 159-161). This issue, and the question of model generalizability, can be dealt with in the same manner. The strategy for model generation adopted here uses an nominal significance level of 0.05 without adjustment for test inter-dependence, with the understanding that the models generated by the process require further testing on independent data in order to validate the findings.

The second difficulty with model generation procedures is the risk of producing a model where some of the effects in the model, particularly those that are borderline significant, are due to “noise” in the data. The result can be models that “over-fit” the data, that capitalize on random variation specific to a particular sample (Neter, Wasserman and Kutner, 1990: 465). The ideal solution to this possibility is to cross-

validate any empirically derived statistical model by applying it to another sample drawn from the same population. Evidence that the models fit equally well across samples is presumed to indicate the reliability of the models. The existence of two large and purportedly identical surveys of volunteering in Canada appeared to provide an opportunity to cross-validate the analysis of volunteering in this manner. Originally, the intention was to use the 1997 and 2000 NSGVP data to cross-validate the structural models developed by exploratory procedures. However, two factors mitigate against doing so. First, variables available in the 2000 data that are important parts of the social resources model are not available in the 1997 data. These include information on hours worked for pay and the respondent's hourly wage rate. This information is important for measuring economic resources and is particularly relevant to the evaluation of standard economic theories of volunteering. In addition, although the surveys are only separated by three years there was a fairly dramatic decline in the rate of volunteering over that short span of time, from 31.1% in 1997 to 26.1% in 2000. At the same time the average hours volunteered annually rose from 152.5 to 165.3 per volunteer. Both of these changes suggest that the process underlying volunteering may have changed substantially between the two surveys. In particular, the changes in volunteering are not randomly distributed across the range of volunteers. Since hours volunteered rose, the decline in volunteers clearly occurred among those who tend to volunteer few hours annually. Thus the difference between the two data sets is systematic, low hour volunteers are a greater proportion of the volunteers in the 1997 data than they are in the 2000 data. The change between the surveys is large enough that the difference between identical models applied to both data sets could be due to real differences in the underlying process rather than

simply random variation in the two surveys. If the underlying process is substantively different in the two samples, cross-validation tests themselves are invalid (Pedhazur, 1997: 209).

Since cross-validation with two independent samples was not possible, a second strategy was followed that allows for a limited degree of model validation. The NSGVP data were randomly split into two samples of approximately equal size. One of these sub-samples is treated as the exploratory sample where model development procedures are applied. Once an acceptable model is produced, it is applied in the second sub-sample, the validation sample, and evaluated for its applicability or generality. The exploratory sample in NSGVP contains 6258 cases, with 26.7% volunteers, and the validation sample contains 6,231 cases, with 27.3% volunteers.

The basis for evaluating the model's generality can take a number of forms depending on the goals of the research. When the goal is to produce a reliable predictive model of a social process, cross-validation proceeds by taking a model developed from the exploratory sample and applying it to the validation sample. The values of the endogenous variable predicted by the model in the validation sample are correlated with the observed values of the endogenous variable in the validation sample to produce a cross-validation coefficient. The higher the correlation between the predicted and observed values, the greater the expectation that the model will perform, in predictive terms, in other samples from the same population (Pedhazur, 1997: 209).

This approach, however, does not specifically focus on an evaluation of the coefficients in the estimated model. Predictive efficiency is not the concern in developing models in the research undertaken here. Instead, the research focuses on the structural

paths identified in the models, and the purpose of cross-validation is to determine whether or not these coefficients appear in the models simply due to having capitalized on chance variation in the exploratory sample. To determine if this is the case, the models developed in the exploratory sample are applied to the confirmatory sample. Coefficients found to be significant in the exploratory sample that are not significant in the validation sample are treated as the result of over-fitting the data in the exploratory sample, and are dropped from that model (Fox, 1997: 516-517). Models estimated with the logistic regression procedures are cross-validated by fitting them to the validation sample. Coefficients that are significant in the exploratory sample but not in the validation sample are dropped from the model. In the LISREL procedures, cross-validation takes a more stringent form. Since LISREL performs a comparison of two groups in a straight-forward manner, cross-validation takes the form of developing the models in the exploratory sample and then fitting that model to the exploratory and validation samples at the same time with equality constraints across samples on all coefficients in the model. If the model does not fit both samples adequately the modification indices are examined to find which coefficients are not equal across groups. These coefficients are dropped from the exploratory sample model. In both the logistic regression and LISREL models the final models are estimated only from the exploratory samples rather than the entire NSGVP sample (Neter, Wasserman and Kutner, 1990: 467).

Appendix B

Modelling Group Differences

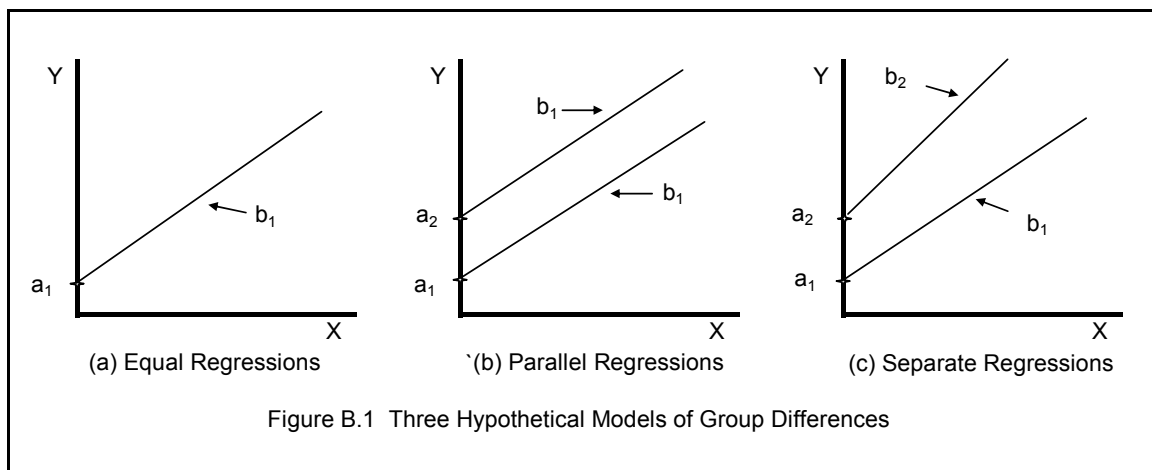
The basic model in the analysis of the probability of being a volunteer is the single logistic regression equation with the social resource variables as the set of exogenous variables. As estimated, the model contains an intercept and a set of coefficients for the main effects of each of these continuous variables. In the standard interpretation of these coefficients, the intercept is the value the dependent variable takes on when all the exogenous variables are equal to zero. The coefficients attached to each exogenous variable represent the change in the dependent variable that is caused by a unit change in the exogenous variable. These determine the slope of the estimated regression line and constitute the effects of the structural model. To aid in the discussion of how group differences are tested in logistic regression models, a simple regression model is presented below. This model has an intercept, a , and one independent continuous variable, X_1 :

$$Y = a + b_1 X_1$$

Extension of this model to the situation with multiple continuous exogenous variables is straight forward and does not change the interpretation discussed here.

When this simple regression model is applied to a sample as a whole, the implicit assumption is that the intercept and slope coefficients are equal across any and all identifiable groups in that population. This implies that the social process represented by the structural model operates in exactly the same manner for everyone in the population. This assumption may be warranted when there are no theoretical or empirical reasons to believe that the impact of any of the independent variables is different across possible

sub-groups, or that the mean level of the dependent variable is significantly different across groups. This situation is represented by the equal regression model in Figure 3.3. For the entire population, the same intercept and slope coefficients are presumed to apply.



However, if there are group differences in the population, then the single model represents a model of the social process averaged across those groups. The model is a valid representation of the population as a whole, but may not accurately reflect the process in any one group in detail.

When there is reason to believe that there are important differences across groups, one of three approaches are typically used to identify those differences. The least appropriate is to simply estimate separate regression equations for each group and compare the intercept and slope coefficients across equations. In an analysis of the probability of being a volunteer, for example, Freeman (1997) compares men and women in this manner. When the aim of the research is primarily to explore the possibility of

differences between groups this approach is acceptable. When the intent of the research is to identify how the process actually differs across groups it is not. The difficulty is that differences identified by comparing two or more separate regression models may or may not be real differences in the population. The fact that a slope coefficient is non-zero (significant) in one equation but is zero (non-significant) in another is not necessarily evidence that the independent variable or variables in question have different effects in the two groups. The same reservation applies when the size of the coefficients are found to be different. In both cases, the differences across equations may simply be due to random sample variation or differences in the size of the groups (which produces different sized standard errors). To determine whether or not the differences across equations are large enough to have a high probability of being real differences requires a formal statistical test of the differences between relevant coefficients. Procedures for testing differences across separately estimated equations exist but they are rarely used in practice (Clogg, Petkova and Haritou, 1995). Without such tests, comparisons across groups run a substantial risk of being wrong.

The second approach to identifying group differences is to include a set of binary variables, typically based on indicator or dummy coding procedures, that represent each of the groups under consideration. Group differences are then equated with the coefficients on the dummy indicator variables. In the terminology of the analysis of variance, each coefficient represents a contrast between the indicator group and the reference group. For qualitative group variables that identify k mutually exclusive and exhaustive groups there will be $k-1$ such contrasts. In logistic regression, the set of dummy variables entered in an equation can be tested with a global test of significance

such as the contribution to model X^2 , and each coefficient has an associated t-test indicating whether or not that particular contrast is zero. Having found significant contrasts among the groups, the coefficients on the dummy variables are taken to represent group differences in the process under study. This is true only in the limited sense that significant coefficients represent differences between groups in the conditional mean of the dependent variable---the level of the dependent variable given the level of the independent variables in the equation (Fox, 1997: 136-137). This approach takes the form of a test of the parallel regressions model in panel b of Figure 3.3. The intercepts are allowed to differ across groups, but the slope coefficients are constrained to be equal. For each group the average level of the dependent variable can be different but the impact of the independent variables is the same in all groups. This model may provide a non-trivial fit to the data (a significant contribution to X^2) but in itself does not determine whether or not there are also group differences in the impact of the continuous independent variables on the dependent variable. In a structural model where the effects of the independent variables are assumed to represent a real social process, a social dynamic, in the population, the question of differences between groups in these effects is as, if not more important than simple differences in the mean level of the dependent variable.

The third approach to identifying group differences examines differences in both the mean level of the dependent variable and in the impact of the independent variables across groups. This is accomplished in logistic regression by testing both the main effects of group variables and the effects due to interaction between the group variable and the independent variables in the equation. The inclusion of group main and interaction effects relaxes the equality constraints on both the intercepts and slopes of the structural model.

This situation conforms to the test for different regressions represented by model c in Figure 3.3. Estimating a model in this form makes it possible to identify substantive differences in all the parameters of the structural model across groups.

Applying this rationale to testing groups differences in logistic regression models, the first step is to estimate a model for the entire population, the national model of the probability of being a volunteer. This model serves as a baseline for testing whether or not the inclusion of group differences in the form of main effects for mean differences provide any improvement to the fit of the model. If mean differences do exist, the next step is to include interaction terms for the continuous independent variables in the model. These are also evaluated in terms of their contribution to the fit of the model, with the strongest effects entering the model first. When this process is complete and any significant interactions are included, the process is repeated for other group variables to test for other group differences. Once the relevant group variables have been tested the process stops and the group difference model can be analysed.

In Chapter Five, the analysis of volunteer effort is based on the estimation of structural models with the LISREL program. The logic of testing group differences in this analysis is exactly the same as in the case of the logistic regression models, but the procedure is slightly different. Tests of group differences are operationalized as the presence or absence of equality constraints between separate parameter matrices for two or more groups. In addition, since the structural models in LISREL are based on the covariance matrix among the dependent and independent variables, the mean level of the dependent variables is not usually part of the basic model estimated from the data. Testing for differences in mean levels is possible but requires a slightly modified overall

model. There are a number of ways to begin the process of generating models for more than one group (Joreskog and Sorbom, 1996: 277-279), but the procedure here begins with a single model, the full model, estimated from the exploratory sample and validated on the confirmatory sample (see discussion below). This model produces a matrix of gamma coefficients for the effects of social resources on the four endogenous variables, and a matrix of beta coefficients for the effects among the endogenous variables. In both matrices, parameters that represent significant paths in the model will be free (estimated) parameters, while those that are non-significant will be constrained to equal zero. The data on which this model is estimated is the single matrix of covariances among the independent and endogenous variables taken from the exploratory sample.

The first step in comparing the structural model between two or more groups is to test the hypothesis of equal regressions. To do this, the parameter structure of the full model is applied to two or more covariance matrices, one for each group in the comparison. In addition, a vector of means for the independent and endogenous variables is provided to the program and the model specification includes a variable, representing the intercept in the equations, created by LISREL that is set equal to 1 for all cases (Joreskog and Sorbom, 1993: 62-63). In effect this model estimates the four structural equation presented earlier with an intercept term in each equation. For the type of path models estimated in the analysis of volunteer effort, the equal regression hypothesis requires that the gamma and beta parameters that are constrained to zero in the full model are constrained to zero for each group, while the parameters that are free (estimated) in the full model are constrained to be equal across groups. In addition, the intercept variable is also constrained to be equal across groups. The error variance and covariance

parameters of the Phi matrix, reflecting the correlation among the independent variables, are allowed to vary across groups. In fact, as noted above, this matrix is not actually estimated but is simply replaced by the observed covariance matrix among the independent variables. The error variances for each of the endogenous variables are also not constrained across groups, although their covariances are constrained to be zero in each group.

Fitting a model with this structure is a formal test for equal regressions across groups. The intercept and all the effects of the independent variables in one group are constrained to be the same in the other group or groups. Similarly, the effects among the endogenous variables are also constrained to be the same across groups. LISREL provides the same set of fit indices for these types of models as for the typical structural model. These have the same interpretation as in that case---they indicate the degree of fit between the data and the model. For group comparisons, the program also provides an additional set of fit indices for each group separately, including a set of modification indices. For the initial test of equal regressions, the goal is to determine whether or not the hypothesis holds for the groups being compared. This is evaluated by the overall fit of the model, as in the evaluation of the standard model. If the model does not provide an adequate fit to the data, the hypothesis of equal regressions is rejected and analysis proceeds to a test of the parallel regressions hypothesis. This is done by relaxing the equality constraint on the variable representing the intercept in the model for each group. In a model estimated with the intercept variable, the means of the endogenous variables are allowed to vary across groups, but the parameters of the gamma and beta matrices remain fixed by the equality constraints. Thus the means of the endogenous variables are

allowed to vary across groups but each slope (path) is constrained to be the same in all groups. This represents a test of the parallel regression model and the fit of this model is evaluated with the standard fit indices. If the model does not fit the data adequately, the parallel regression hypothesis is rejected and the next step is to relax one or more of the equality constraints across groups in the gamma or beta coefficients. To guide this process, the modification indices are used to select the constrained parameter that will have the largest improvement on the fit of the model if it is allowed to vary across groups. The model is re-estimated with this parameter free and the fit of the model is re-assessed. This model tests the hypothesis of different regressions and equality constraints are relaxed until an acceptable fit to the data is achieved.

Relaxing equality constraints in LISREL is precisely the same as introducing an interaction term in logistic regression. Both procedures allow the slope coefficient for a specific independent variable to differ across groups. An important difference between the two procedures for testing group differences involves the decision about when relaxing further equality constraints is unnecessary. In logistic regression, the addition of an interaction term will increase the model X^2 , and this increase can be evaluated on the basis of whether or not it is large enough to represent a non-trivial (statistically significant) increase in the fit of the model. When the addition of further interaction terms does not produce a significant increase in the model X^2 , the process stops. With LISREL the process is less certain because the fit of a model is imprecise enough to introduce some arbitrariness into the decision to relax further equality constraints across groups. Because the models are evaluated for how close they fit the population model, the fit of the different regressions model can always improve by allowing more constrained

parameters to vary across groups. However, relaxing equality constraints means trading fit for parsimony and there are no hard and fast stopping rules for group comparisons. In general, the standard fit indices will be used to evaluate the fit of the models, but attention will also be paid to the residual covariance estimates since these indicate where the group models do not fit well. These, along with the substantive meaning of the structural models will guide the process of assessing the adequacy of models that incorporate group differences.