

Theoretical development and social capital measurement

Sarah Hean and Sarah Cowley

Florence Nightingale School of Nursing and Midwifery, Kings College London

INTRODUCTION

The purpose of this chapter is to describe one theoretical perspective of social capital. It is a perspective that originated from a remit to produce a survey instrument to measure this construct. It is a pragmatic perspective that may act for some readers as a cognitive tool upon which to hinge their intuitive grasp of what social capital entails. It should also assist some readers in making meaning of the vast literature already existent on social capital. Social capital is an intangible phenomenon (Bourdieu, 1997) that can prove difficult to assimilate, often because the literature often focuses on specific components of social capital exclusively without providing an overall view of the construct. The analytical framework presented here provides such an overview.

The chapter describes the analytical framework by outlining the results of a *concept analysis* of the social capital construct. One result of this analysis is a list of attributes of social capital. These attributes are then used to elaborate a model called the R-C-R' cycle based on a Marxist description of capital. This framework by linking the components of social capital explains the concept in a more heuristic fashion. This framework is then used to suggest an approach to measurement, a task that will help in bridging the gap between social capital theory and practice.

The difficulty with trying to generate theory around social capital is the fact that it has many facets. These individual facets are often considered in isolation. It may be argued that they need to be considered together as a whole if the complexity of social capital gained is to be better understood. The task is a daunting one, however, without some form of cognitive structure in which to order these dimensions. Despite this, social capital theory remains relatively deficient in such structure. It lacks a framework upon which the dimensions of social capital can be interrelated and a heuristic approach to social contexts based. Without this view, it is also difficult to create a measurement tool that will adequately reflect the many dimensions of social capital. Instruments are needed that are clear on their theoretical basis. They will not over-emphasise one aspect of the construct more than another if this kind of clarity is in evidence. If this is unavoidable, however, this disadvantage should be recognisable and deficits made explicit to users. A review of instrumentation that measured social capital showed such an explicit framework to be often absent (Hean, Cowley, Forbes, Griffiths, Maben, Murrells, 2002).

The natural progression of such commentary is to investigate, classify and order the range of characteristics that may be attributed to social capital. One method of doing so is to perform a concept analysis.

A concept is a "mental construction... (an) attempt... to order our environmental stimuli" (p37, Walker & Avant, 1995). This is in fact what the term social capital amounts to. It is a construction used by academics and practitioners alike to make sense and share meaning of the benefits that accrue to people as a result of being part of a social network. But in attempts to understand the advantages of social networks, a plethora of work has been written on the concept. This surplus has led to a blurring of the exact

meaning of the term and how it may be applied. An analysis of what is meant exactly by the term and a framework on which to hang its various components will be of use. Firstly in trying to achieve some sort of consensus of what social capital “looks like”. Secondly, it should bridge the gap between a purely theoretical understanding of social capital and the pragmatics of increasing its occurrence in various groups and communities.

A concept analysis is a structured method for ‘clarifying a concept, its attributes and current use’ (p 77; Rodgers, 1993). In other words, it is an analysis that seeks to unpick the key components of the concept. The clarity provided will then be a first step in creating the foundation of accurate theory building. It will locate the building blocks with which to begin. It is not an attempt at a comprehensive review of the literature as would be achieved by a systematic review. Instead, like in research sampling, analysts identify the population of literature in which the understanding of the concept needs to be clarified. In this chapter the population is described by literature written (and quoted in) the discipline of health. The population of this literature was created from searches for literature using the social capital as a key word search in a range of appropriate databases and journals (from 1980-March 2001). Namely: Medline, Aidsline, PubMed, Premedline, AGELINE, World, Information Nursing, Cochrane Library, HMIC (DH Data), HMIC (Kings Fund), HMIC (Helmis), CancerLit, British Nursing Index, CINAHL, Ingenta journals, PsycInfo, Embase, Citation Indices Science Citation Index; Social Science Citation Index; Arts and Humanities Citation Index, SOSIG, ArticleFirst, Papers First, WorldCat, Science Direct, British Medical Journal (1994-); Health Promotion International (1996-); Social Science and Medicine; Health and Place. A sample of literature is selected from this population. The sample was purposeful and to a degree snowball as key authors central to the understanding of social capital in the field become evident.

Using the above sample of literature, the attributes of the concept are then explicitly identified (Walker & Avant, 1995). These attributes are further delineated from what may potentially be antecedents or consequences of the concept. This procedure was undertaken by a single researcher avoiding the need for inter-rater reliability concerns (Hean et al., 2002). The results of this process were the identification of the building blocks of one potential framework that has been used to surround the theory of social capital and upon which a survey instrument was created.

The results of the concept analysis

The concept analysis of social capital (Hean et al., 2002) resulted in a dichotomisation of the central attributes of the construct. The first category is, for the purposes of this classification, termed *global* attributes. *Component* attributes form the second category. Global attributes are properties of the concept that describe the construct as a whole, a generic description. On the other hand, *component attributes* describe single and specific dimensions of social capital. The latter components, if considered in tandem with others, generate an overall impression of the social capital available. If taken separately, however, they cannot describe the construct in its entirety (Hean et al., 2002- for greater detail of these components).

Global attributes

The first of the general attributes identified pays attention to the “social” component of social capital. In other words, social capital exists in or through relationships (Mitchell & Harrison, 2001; Raphael, Renwick, Brown, Steinmetz, Sehdev, Phillips, 2001; Vimpani, 2000; Leana, Van Buren III, 1999; Runyan, Hunter, Socolar, Amaya-Jackson, English, Landsverk, Dubowitz, Browne, Bangdiwala, Mathew, 1998; Astone, Nathanson, Schoen, Kim, 1999; Burt, 1997; Cox, 1997; Coleman, 1990). The quality, quantity and context of these relationships will dictate whether social capital is present. They will also determine its nature (Erben, Franzkowiak and Wenzel, 1999; Gillies, 1998; Cox, 1997).

Two other global attributes to relate “the capital” nature of the social capital. A Marxist understanding of capital sees it as both a dynamic and durable phenomenon. This property is represented in writings by Bourdieu who describes social capital as ‘an unceasing effort of sociability, a continuous series of exchanges in which recognition is endlessly affirmed and reaffirmed’ (p 52; Bourdieu, 1997); an “aggregate of the actual or potential resources which are linked to possession of a durable network”(p51; Bourdieu, 1997).

Some global attributes do not favour either the social or the capital part of social capital. Social capital may be defined by its *function* (Coleman, 1988), for example. Its functions are often expressed in generalised terms, exemplified by *facilitation*, *co-operation*, *learning* (e.g., *copying* and *pooling* of skills) and *generation* of trust, gossip, reputation or regulation (e.g., (Kilpatrick, 2000; Coleman, 1988; Collier, 1998). Social capital may serve several purposes simultaneously (Astone et al., 1999; Putnam, 1993; Coleman, 1988). For example, social capital generated in art classes may lead to members learning new artistic skills while providing information and support of other educational, health or social needs (Health Development Agency, 2001).

Lastly, and a general attribute that leads appropriately into the discussion of the component attributes of social capital, is that social capital is *multidimensional*. This is part of the construct’s strength in that together the dimensions provide a heuristic and encompassing view of social advantage. It is also to blame, however, for the confusion and/or lack of consensus that surrounds social capital. It hence underlies the need for a structural framework that outlines, links and explains the relationship between dimensions.

Component attributes

The individual components of social capital are described here as *component attributes*. If one considers all the component attributes of social capital concurrently, a heuristic approach to the issues of social advantage is made possible. It also makes social capital appealing to those seeking to understand the social advantages in the context of the social determinants of health.

A first and popular component attribute of social capital is a description of the social network in which social capital is found. The type of network is usually of interest. The types range from membership in the informal (e.g., family, friend and neighbour networks) to the formal (e.g. sports clubs, farming associations) network. Previous authors have partitioned the features of these networks into the *physical* (e.g. network size; homogeneity, horizontality, verticality-

Cattell, 2001; Raphael et al., 2001; Veenstra & Lomas, 1999; Veenstra et al., 1999; Gillies, 1997; Tjihuis, Flap, Foets, Groenewegen, 1995) and *affective* characteristics (e.g., social cohesion; feelings of solidarity - Hawe, Shiell, 2000; Kawachi & Berkman, 2000; Kilpatrick, 2000; Veenstra, 2000; Krishna & Shrader, 1999; Lochner, Kawachi, Kennedy, 1999; Bullen & Onyx, 1998; Tjihuis et al., 1995).

In addition to simple network membership, the behavioural measure of frequency of participation may be included. This behaviour may be as a group member (in formal or informal groups) or more individually (e.g., voting; donating blood); for altruistic purposes (e.g. charity work) or for self benefit (e.g. sports clubs) (Hyyppä & Mäki, 2001; Veenstra, 2000; Baum, Bush, Modra, Murray, Palmer, Potter, 1999; Veenstra et al., 1999 Rico, Fraile & Gonzalez, 1998; Putnam, 1993).

The frequency of participation is not the only consideration. The level of involvement (e.g., as a group leader as opposed to a passive subscription payer) may also alter the amount of advantage obtainable from the network (Putnam, 1995).

A second and also commonly quoted component attribute of social capital is *trust*. Trust is the “belief in the goodwill and benign intent of others” (Kawachi, Kennedy, Lochner, Prothrow-Smith, 1997). It differs from context to context dependent on whether or not the person to be trusted is known personally to the respondent. Trust at a personal level is exemplified by trust in friends, neighbours and others in specific networks (Mitchell et al., 2001; Veenstra, 2000; Baum et al., 1999). This may facilitate interaction within these confined networks. Trust, however, in those with whom individuals have no first hand knowledge, encapsulates facilitation wider a field – generalised trust (Cox, 1997).

A third although less commonly featured component attribute is the resources of the relevant network (e.g., Hawe et al., 2000; Vimpani, 2000; Leeder, Dominello, 1999; Tjihuis et al., 1995). Two forms of resources are relevant: those external and those internal to the individual (see Cowley, Billings, 1999). External resources exist outside of the individual. They are accessible only through interaction with others within that same network. They take both physical (e.g. financial and other material resources) and abstract forms (e.g. a collective skill base of people in the network, willingness of network members to offer assistance). These resources will be of more or less value to the respondent dependent on the nature of social advantage desired. By way of example, a group with the goal of mutual support requires more abstract resources in addition to material resources (e.g., a high number of members willing to give assistance, members with a variety of complementary skills) (Cattell, 2001; Wakefield, Elliott, Cole and Eyles, 2001; Ervin, Nelson and Sheaff, 1999; Thomas & Thomas, 1999; Tjihuis et al., 1995).

Resources internal to the individual are also worthy of consideration. They are necessary in many instances in accessing external resources resident in the network. Internalised knowledge of whom, when and where to go for help if required is an example (Kilpatrick, 2000; Bourdieu, 1997).

Norms and rules make up a fourth component attribute that creates the overall picture that is social capital. Norms are those unstated rules or standards that often govern actions during informal or spontaneous social relations. Whilst deviation may be punished by socially imposed sanctions enforced by other group members, compliance with these norms may promote spontaneous co-operation between individuals (Fukuyama, 1999; Collier, 1998; Cox,

1997). Such cooperation either restricts or facilitates individual and group action for the benefit of the whole (Coleman, 1988).

Antecedents and Consequences

Apart from outlining the main attributes of social capital, it is a further aim of a concept analysis to distinguish the attributes of social capital from its antecedents. Antecedents are “those events or incidents that must occur prior to the occurrence of the concept”. At times, however, features may be antecedents and attributes simultaneously (Walker et al., 1995).

Identifiable antecedents are related to one or several of the component attributes. They are those factors that precede certain levels of trust, network characteristics, norms and resources being in place. Of those that appear in the health literature, the majority are potential precursors of the network attribute, (i.e., reasons for participation in a network such as sufficient time to attend the network for example).

The concept analysis also distinguishes between social capital itself and the consequences of social capital. Self reported health status is a consequence often reported and of particular relevance to this chapter (e.g., Hyypä et al., 2001; Subramanian, Kawachi & Kennedy, 2001; Ellaway & Macintyre, 2000; Rose, 2000; Veenstra, 2000; Cooper, Arber, Fee and Ginn, 1999; Kawachi, Kennedy & Glass, 1999). SO are mortality figures (Kawachi et al., 1999; Kawachi et al., 1997; Kaplan, Pamuk, Cohen & Balfour, 1996).

It was concluded from the concept analysis that consequences are contextually bound outcomes of the social capital cycle. This statement highlights two points. Firstly, the consequences of social cycle stand outside the cycle (although they may feed back into it). Secondly, consequences derived depend very strongly on the individual's specific needs. They also depend on a myriad of other contextual variables that make each consequence derived from any particular social capital cycle unique. The attributes of trust, norms, network characteristics and resources may all be in place in some form or other but the consequences, even when these attributes are identical, may be very dependent on an individual or group contexts.

By way of explanation take the example of an older person being given a lift to a hospital appointment by a member of the local community of which s/he is part. This is a consequence of social capital in that s/he would not have obtained this advantage if she had not been part of a particular geographical network. Members of the community must trust each other. The older person must trust the helpful neighbour and the neighbour needs to trust that the older person will not take advantage of the help offered. Further, the community may be suitably small for everyone to know that the older person needed assistance (network characteristics). A homogeneous group in culture or age may have assisted in the development of trust between neighbours (another network characteristic). Financial resources should also be sufficiently high in the community on average so that some members own a car (Resources). The consequence would not be achieved if these resources had not been present regardless of the willingness of neighbours to help out. Finally, norms should be in place that promote altruistic acts, support and respect of the elderly. Norms that sanction their ill treatment or abandonment should also be in place. If all the components of social capital are optimised in the way proposed above, the older person will be able to get to hospital with a minimum amount of stress. The lift to hospital itself, however, is not part of the dynamic social cycle described in this chapter or the attributes that make it up. It is a product of the cycle.

The lift received is very specific to the needs of the individual in that particular geographical and historical context. Numerous other consequences may result from the particular social capital attributes. This is dependent on the individual community member being assessed and each of his/her personal contexts. Another member of the

community may receive very different benefits from the social capital in existence. For others with different needs, the components of social capital may not be optimum and no positive consequences of being part of the community evident. As consequences are so contextually bound, there may be as many consequences as contexts (Hean et al., 2002).

Fitting the building blocks together-the M-C-M' model

Above, the central global and component attributes of social capital have been described and antecedents and consequences of the cycle briefly delineated from the social capital cycle. It becomes evident, however, that simply describing the global attributes surrounding this intangible concept does not satisfy the need to formulate a deeper understanding of a complex issue. Similarly listing the component attributes (network characteristics, trust, resources and norms/rules) is a static exercise that does not capture the dynamic, durable and hence largely capital nature of the construct. A framework is required upon which the component attributes can be interrelated and the processes that link them understood. Such a framework will also facilitate the understanding of the global attributes by providing a more tangible theoretical framework upon which to structure one's thinking. The location of antecedents and consequences in relation to social capital may also be addressed.

The model upon which this needed structure is based has been derived from Marx's classical analysis of capital, the M-C-M' cycle outlined in *Das Kapital* (Marx, 1867). This understanding of capital was chosen as it captured the dynamic and multifaceted nature of social capital. It also provided the origins of a framework, (the M-C-M' framework) upon which to begin an analytical framework that would describe social capital could be built. This model was transferred into the arena of social capital by Hean et al. (in press). Although the transfer of the Marxist model into the social realm is not a complete one (especially in regard to its explanation of socio-economic inequalities), the use of the bare bones of the cycle illuminates the important dynamic and durable properties of social capital. It enhances the ability to both conceptualise and subsequently measure social capital. In the social realm the cycle has been called the R-C-R' cycle. This description remains vague, however, unless the identity of R, C and R' can be proposed. It would be useful then if the model could be elaborated using the building blocks identified as component attributes in the concept analysis. Further it would be useful if the framework was also congruent with the global attributes described. Finally, the identity of R, C and R' are not the only interest. The dashes between them representing the processes linking these components also deserve consideration.

In the first step to develop such a framework, it is proposed that R represents an internal resource (a component attribute identified in the concept analysis). It may be an internal resource held by the individual which s/he will invest in a social network. R may be drawn from different sources within the psyche of the individual (e.g., cognitive, relational, psycho-social or knowledge bases) that s/he must invest to allow access to the commodity or benefit obtainable from the social network. If this investment has been a wise one and conditions are optimum then benefits may be obtained from the network (C-the commodity). These ideas are congruent with Marxist theory around the investment of money(M) in the means of production, to build/obtain a particular commodity. The ideas are transferred to the social realm (Hean et al., in press) and developed using the results of the concept analysis (Hean et al., 2002).

The commodity is proposed to be an external resource of the network (again one of the component attributes identified in the concept analysis). Individuals may benefit from access to this external resource but have no direct control or access to it unless through interaction with another(s). The commodity mentioned may well be both material and abstract as outlined earlier. Social support would be a typical abstract form of a network commodity.

Obtaining this commodity, all conditions being optimum, may lead to a return or growth in original investment (R'). In other words, R should increase in value so as to form R'. R' is the end product of the cycle, R being invested at the beginning of the cycle. R' is R + profit is returned. In the economic model, money (M) is invested and money, hopefully of a greater quantity (M'), is recovered. To be totally consistent with the original M-C-M' cycle, R and R' would have to be the same entity, one differing only in quantity, rather than substance, from the other. Therefore whatever the invested internal resource ® might be, it would be hoped that network interaction will lead to its augmentation over time.

To be consistent, it is suggested here that the component attribute of trust may in fact be reclassified as a form of internal resource. It may then take on the role of R. Therefore, trust (R) invested in the group may be traced through the cycle and its augmentation (R') analysed. This increase in trust may occur if the individual realises that members of the group are acting in a positive manner towards him/herself (e.g., offering support). It is possible, of course, to experience little or no return from investment of trust in a group. As with economic model, those who do not achieve a reasonable return may find that their levels of trust in the group in fact diminishes. Social capital is, therefore, in general, less accessible to such individuals and does not begin to accumulate for them. All things optimum, however, trust is tentatively invested in a social group. Benefits hoped for may be obtained and trust, that has been initially invested, is confirmed and hence augmented. By way of example then, attending a doctor's surgery, to start off with, may require a small amount of trust in the medical profession in general. If the treatment received and the attitude of the doctor is adequate, then the trust in the medical profession may increase. It is equally possible that the trust in the family doctor has been a personalised one, one based upon personal contact and knowledge. But continual contact with the surgery may lead not only to increases in the quantity of this kind of trust but the quality also. Personalised trust in the family doctor may hence transfer to a generalised trust of the medical profession. This highlights the possibility that the increase in trust may change both in quality and quantity over a social capital cycle.

For the capital cycle then to be completed, trust (R) needs to be reinvested back into the same network (or other similar networks), a process that may be associated with the accumulation of capital. In the M-C-M' cycle, money + profit are reinvested back into the means of production. Continued participation in the network with greater frequency or capacity (in a leadership role) would be an indication of this.

The existence of an increased level of trust cannot be the only factor that will determine whether trust is reinvested, however. Some of the other component attributes described, such as a range of social norms and the many affective and structural characteristics of the existent or new network, provides the context which will constrain or promote the potential reinvestment.

Equally, the processes that link R with C and C with R' are important. In other words, what are the processes that will decide if initial trust will eventually achieve a commodity. Many people invest trust in networks from which they receive little benefit if not actual harm. Again the characteristics of the network and the norms that govern action within it may or may not be conducive for the R-C conversion to take place. Similarly benefits may be obtained but a series of other incidents may interfere that inhibits trust in fellow network members increasing. Think of the influence of the media on the fear of crime for example. Personal experience of crime may in fact be very low. Despite this fact and that members of a geographical community may have done nothing to harm the individual, media reports of crime figures outweigh personal experience (ref) and prevents trust in the community from augmenting.

Finally where do the antecedents and consequences fit in? A first point is that it is difficult to separate antecedents from the attributes of social capital. The dynamic, iterative and multidimensional nature of the construct means that what in one cycle is part of social capital itself, may be an antecedent to future cycles.

Consider for the sake of simplicity the antecedents that may influence the beginning of the cycle (R or trust), antecedents such as environmental influences. For example, levels of perceived or actual violence and crime (and other factors that may influence the phenomena of social inclusion) might be considered as factors that may prevent trust being sufficiently strong to be invested in a network. Other variables may relate to the cost of investment outweighing the desire to invest trust, costs including time available and economic constraints. Antecedents may also relate to knowledge. An individual may have sufficiently strong trust in people in general, but if s/he does not know the group actually exists and when and where it is held (Kilpatrick, 2000), then s/he will not have the opportunity to make a decision whether to invest trust or not.

Similarly, consequences need to be fitted into the understanding of the cycle. Considering the commodity of social support then, as a specific example, consequences related to improved health and decreased mortality might be outcomes of achieving this commodity. The intermediates that link the specific commodity and these consequences are not yet well understood.

Suggestions for measurement

The suggested framework is very much in its infancy and requires empirical testing. Theory development and measurement should be inextricably linked. The one may inform the other in an iterative process that balances pragmatics against the need for theoretically justifiable and useful questions. The development of the framework was therefore largely motivated by the need to provide a sound theoretical foundation upon which measurement might be laid. The instrument developed (Hean et al., 2002-see annex 1) using the framework as a basis, will in the future be the potential tool with which the legitimacy of the framework may be eventually tested and developed.

The instrument developed was a quantitative one, a survey tool that looked specifically at the R-C-R' framework and social capital in the context of the formal network (Hean et al. 2002). The instrument takes an individualistic, compositional approach to social capital although aggregation of data may be used so as to achieve a more contextual approach (Kawachi et al. 1999). A choice needs to be made between two alternate

approaches to social capital measurement. The first seeks to assess all sources of social capital accessible by each respondent at any given time (e.g., Rose, 2000; Kawachi, et al., 1999; Narayan, 1998). The alternative, however, is to assess the components of social capital in more detail from a single network of which the individual is a member.

Each approach has its advantages and disadvantages. In questionnaires assessing all sources of social capital, membership in a list of networks (e.g. the family, friends, neighbours) may be included (e.g., Sudarsky, 1998). The advantage of this all encompassing form of assessment is the capacity it provides in locating all sources of possible social capital that individuals have at their disposal. The disadvantage, however, lies in the need to sacrifice detailed measurement of the attributes of social capital for each network investigated. This is especially the case if the questionnaire is to be kept to manageable proportions. Such sacrifice often leads to certain assumptions being made about social capital access. For example, measurement of membership in a variety of networks often presumes that participation in a network can be equated with support being successfully received. This is not always valid.

A second and alternative approach to measurement focuses on the social capital derived from a single network alone. The advantage of this more detailed approach is firstly a better understanding of how social capital may be accessed from a particular network of interest, a specified community project for example. Secondly, concentration on a single network makes it easier to trace and develop theoretical frameworks that seek to link up the component attributes of social capital. It also facilitates an understanding of how the components of social capital and the antecedents/consequences of social capital may be related. If several networks are measured simultaneously, however, efforts to gain this kind of wide-range understanding of social capital using a single measurement tool, could only be expected to collect very superficial data. Finally, concentrating on a single network makes the task of answering the questionnaire cognitively easier for respondents. It does so by clarifying the precise network to which each item in the questionnaire is referring. Therefore, questions where respondents prefix answers with “ Well it depends.....” are thus minimised.

The disadvantage of this instrument type, however, is its failure to address the context surrounding the individual. Use as an example, studies that aims to associate access to social capital with some outcome such as health. It is conceivable that social capital derived from the specified network is unrelated to health benefits. However, the health of the respondent may not be compromised if social capital from other, unmeasured sources is adequate. Secondly, antecedents to participation in a single network are harder to assess when measurement of non-participation or exclusion from a range of groups is often more straightforward.

Despite these disadvantages described, it was decided that the single network approach was more suited to the purposes expressed in this chapter. In other words, a single network approach is better suited to fleshing out an understanding of social capital based on the RCR framework. The lack of survey tools that focus on a single network is a further incentive.

Having made this decision, the nature of the network must be considered. The following broad categories of human social activity were seen as potential sources of social capital and, therefore, networks of interest:

Informal networks

- Formal networks
- Geographical communities.

The field of formal networks was selected in light of the prevalence of a wide range of community based project programmes (e.g. Health Action Zones, New Deal for the Community in the United Kingdom). There is a need in these networks to understand and assess the psychosocial processes and outcomes of planned initiatives. These projects often augment or even replace alternative sources of the social capital traditionally received from family/friendship networks, from which an individual may have become isolated or from which little social capital is accessible. In relation to the development of the theoretical framework, formal networks have been specifically chosen as networks in which the RCR' framework might be more easily expressed by respondents. These are networks in which respondents will be more conscious of their investment, reinvestment and membership. Asking similar questions about non-formal network membership draws on information more buried in the psyche and would make the initial development of the R-C-R' model more difficult.

Having laid the contextual focus of the instrument, it remains to describe the components of the RCR' framework which the instrument measures.

When considering the instrumentation presented, the relationships between the components included need to be considered and included in a researcher's analytical framework. Data collected from this tool, therefore, will shed light on the relationships between attributes. For example, between norms and network characteristics; between levels of external resources and network characteristics. With this strategy in mind, as well as the need to trace a single RCR' cycle through to completion, an attempt has been made in the development of the instrument to achieve some consistency between the form that each social capital attribute and consequences addressed can take. In other words, norms specifically related to the treatment of others, the non-material external resource of members' willingness to help others in the group and the consequence of support received by members of the group from others in that group are seen as potentially and theoretically linked.

No single instrument can measure all aspects of social capital, the limitations of the instrument with respect to this model need to be made explicit.

Component attribute 1: Network characteristics

The first component attribute included in the survey tool (Annex 1) is that of the network itself and its characteristics. A measure of simple membership in the network alone is not considered sufficient and, therefore, information on frequency of participation in the formal network under focus (over a three month period) is collected (Questions 1 to 7; Annex 1). Participation in the network on a formal basis is a first focus (question 1,

Annex 1) but included also is less formal activity represented by social participation with other group members socially outside of formal meetings (Questions 2, 3 and 6; Annex 1). The level of involvement in the network is another network feature addressed. This is achieved not only by assessing attendance of group meetings but by ascertaining whether the respondent is in addition taking an administrative or leadership role (question 4 and 5; Annex 1).

Although the above features of the questionnaire may be taken as measures of the structural features of the network characteristics component attribute, they may be manipulated to provide information on the reinvestment side of the R-C-R' cycle. If the instrument is applied longitudinally, therefore, growth of R to form R' and reinvestment back into the same formal network may be assessed. This is achieved through providing measures of changed frequencies of participation and changed levels of involvement in the formal network of focus. In other words, if participation and level of involvement are assumed to be proxy measures of levels of trust in a network, then initial participation and involvement levels represent initial investment of R. Changes in participation and involvement over time represent R' and reinvestment back into the same network. Reinvestment may occur back into other networks other than the original, however. Therefore, further participation in networks outside the formal network of focus (in friendship networks, or other formal groups within the community) is another measure of this form of reinvestment. By way of example, therefore, mothers who are part of a health visitor lead mother and toddler group over time may complete survey instruments. Ideally when these are analysed they may show an increased frequency of formal participation and an increase in uptake of leadership and administration roles by members. Mothers may simultaneously build friendship networks as a result of group activity. The networks will meet and provide child care informally for each other outside of the actual formal network meeting. Such an ideal situation represents both the social capital features of obtained commodity (support) and the durability/sustainability of social capital in a formal network and its transfer wider a field into the informal arena.

Participation and involvement are features of the network component attribute that are structural in nature. Affective features are also considered in the instrument. These are represented by scales of cohesion in the group (questions 8, 9, Annex 1) and feelings of security with other members (Questions 13, 14, 15; Annex 1). These are scales that as explained in the development of the RCR' model may constrain/facilitate whether initial investment in the network results in the young mother acquiring the commodity of support she may require of the group. Infrequent participation or low involvement may not provide the opportunity for support or low involvement may not provide the opportunity for support to be given, regardless if the mother is ready and sufficiently trusting for support to be accepted. Regardless also of whether the group has the non material resources needed to give her support.

Similarly, although support may be offered and accepted, a mother's levels of trust in this and similar groups may not have the opportunity to develop if other factors outweigh the actions of support. In other words the C-R' conversion may be blocked.

Not all aspects of the network characteristics component attribute can be included in the instrument. The horizontality of the network (i.e. the democratic functioning of the group) has not been assessed nor the verticality

(i.e. the relationships between the formal group and surrounding and supporting organisations and infrastructure). The heterogeneity of the network is also not immediately evident but manipulation of demographic data collected simultaneously with respect to gender, age, education and occupation may provide useful indicators of this structural characteristic. The demographic variables included are examples of some personal characteristics that have been thought to influence personal experience of social capital (e.g., Cooper, Arber, Fee & Ginn, 1999). Further affective characteristics such as feelings of empowerment, feelings of identity and belonging are also excluded.

Component attribute 2: Norms

Measures of social norms have been included in the instrumentation (Questions 10, 11, 12; Annex 1). These represent general norms or informal rules that may govern the way group members behave towards one another. They therefore facilitate the conversion of 'R to C and C to R' in the RCR framework.

Component attribute 3: Resources

The questionnaire also included the internal resources of the respondent and the external resources of the network, both features necessary for completion of the RCR cycle.

External resources

The external resource of the network considered in this questionnaire was a non-material external network resource: the degree which *people are willing to help others* in their group (questions 27-33; Annex 1). This network resource was chosen to link theoretically with norms dictating the group's treatment of others (questions 10, 11 and 12; Annex 1). It is an individual level variable but one that needs to be aggregated to gain an impression of the mean willingness of group members to help fellow members. It is a resource upon which the respondent will draw if support of some kind is a goal (intended or otherwise) of the group (the commodity associated with the group). This external resource is divided into two forms in the survey tool. Firstly, *general help* where willingness to help less conditionally is assessed (questions 27-30). Secondly, *conditional help*, where help is perhaps less willingly given and if so, under particular conditions only (Questions 31-33).

Internal resources

A further scale draws from the established 'sense of coherence' scale (Antonovsky, 1988)[pic](Antonovsky, 1988) (Questions 41, 42, 45, 46, 48-55; Annex 1). This scale represents the coping capacity and generalised resistance resources respondents contain within themselves with which they may combat stressful life situations. It is a scale that may be viewed as an internal resource held by the individual that will enable them to access external resources available in networks of which they are members. It may also be perceived, however, as a something that grows as a result of being part of

a functional social network. It could hence be seen as a consequence of social capital and a possible intermediate between social capital and another consequence measured in this instrument, namely self assessed general health status. The interpretation of this scale either as an outcome or attribute, as with several of the other attributes, may only be determined by longitudinal application of the questionnaire or more sophisticated statistical analyses (e.g. pathway analysis). The blurring in definition results from the acceptance of social capital as being a cyclical process represented by the R-C-R' cycle. Here one part of the cycle becomes the attribute of future cycles in an ongoing, dynamic and sustainable process (Hean, et al., in press).

Consequences

Practical support (questions 24, 25; Annex 1), emotional support and how well respondents know the members of the group (Questions 16-23 and 26; Annex 1) are other consequences included in this questionnaire, in addition to self reported health status (Questions 40, 43, 44 and 47; Annex 1).

Context

The instrument may further be used to contextualise the formal network within the wider geographical zone in which it is situated (Questions 35-39). This can be achieved by employing two scales present in the survey tool. These look at two component attributes of social capital derived from the wider network of the geographical network. This design is specifically to gauge the impact of the formal network on members' interaction with their geographical community and hence on the geographical community itself. One scale measures the attribute of participation in the geographic community either socially (Question 35; Annex 1) or more formally (Questions 36 and 37). A second scale measures trust in members of the community (found to be a more stable scale in this instance). In both cases, trust and participation in the geographical community may well be improved by participation in the formal network (if all social capital attributes are functioning optimally). In other words, a successfully run community project may lead to greater investment in the community as a whole. Conversely, however, the functioning of the wider geographic community may be the context in which the formal network exists. This context may dictate the nature of the group's component attributes and eventually its success. Again path analyses and longitudinal studies are recommended in determining the direction of these relationships. These scales once again hinge on the RCR' framework in that involvement in the social capital cycle in the formal network of focus may eventually lead to reinvestment in the same (the formal network) or in this instance other networks (the geographical network), in which future social capital cycles may be performed.

Limitations

As mentioned and based on respondent fatigue, not all components of social capital can be measured by one instrument. It is important therefore that, if accepting this limitation, it needs to be made explicit to users which part of the social capital framework is being measured. This allows instrument users to assess the extent to which each component

attribute and the relationships between them (as expressed in the RCR framework) can be calculated using this particular tool.

The most noticeable theoretical omission from the questionnaire, as should be evident from an application of the analytical frameworks discussed, was a direct measure of trust in network members (known and unknown). Measures of other attributes such as frequency of participation and some of the affective network characteristics may stand in proxy, however, as indirect measures of this attribute. Direct measures of trust had been included in the pilot of the questionnaire. They were slowly removed during development because of difficulties respondents encountered in answering these questions, the reliability of these scales and scale formation during factor analysis. Reports that items measuring trust are often unstable indicate that the omission of the trust scale conforms with the findings of others (Mackino & Starfield, 2001). Proxy or indirect measures of trust are therefore justified in this instrument. If direct measures are to be effectively included in future measurement, however (and this is essential based on the centrality of the trust attribute to the RCR' framework and social capital), more work is paramount on developing these measures to a greater degree.

Antecedents to any of the single components or the construct as a whole are also not addressed. In a defence of this, antecedents to participation again had been included, to be excluded from the instrument based on findings that respondents confused their original reasons for entrance into a network with their motivation for remaining in the network. In addition, antecedents were also confused with what respondents now knew themselves to get out of the network. This deficit may be compensated in the future by learning why people do *not* enter the particular formal network and using as subjects those respondents that are eligible for, but are not members as yet, of this network.

Lastly, although longitudinal application of the questionnaire may capture some aspect of these dynamic processes, findings should also be triangulated with more qualitative approaches gain further understanding.

Conclusion

Social capital is a construct that has become popular with academics hoping to improve a theoretical understanding of social inequalities between groups. These inequalities may in part be attributable to the social networks to which individuals belong (e.g. Putnam, 1993; Bourdieu, 1997). Practitioners (community workers, for example) and policy makers are also drawn to the concept from their experience that social networks are key to building and supporting members of differing groups. This may be achieved through strengthening family and friendship networks or offering alternative sources of support through more formalised networks (such as mother toddler groups) or geographical communities. The pragmatic processes that are required to strengthen or replace these networks would rationally be best advised by a clear theoretical justification and application. However, the gap between social capital as a theoretical concept and changing people's lives is a wide one. This is not least because in theory it is not well defined or structured. Without clarity and structure in the theoretical realm, its translation into practice is inhibited. In other words, if a health visitor wants to provide support to a young mother through encouraging her to attend a community group, s/he needs to be

aware of the facets of the network on which s/he should focus so as to optimise benefits achieved. She also needs to have a measurement tool available with which the change in social capital of the group over time and interventions may be evaluated. Such a practitioner would benefit from some cognitive structure surrounding the social capital concept upon which to base her/his measurement and decision making. This chapter hoped to provide such cognitive structure. It described a theoretical framework upon which cognition around the heuristic concept of social capital can be understood and explicit measurement based.

The framework was developed using a combination of the results of a concept analysis in the first instance. This showed that social capital was associated with a range of global and component attributes. The main component attributes were identified as trust, resources, norms and network characteristics. These attributes were then related to each other using the RCR' cycle borrowed from a Marxist description of capital. In this cycle individuals invest trust in a particular social network, to obtain a commodity (such as support). Obtaining this commodity in turn may lead to an increased trust and reinvestment in the social network of interest. The global attributes are also accounted for in this model especially those describing the durability and dynamism of the social capital construct.

Although the framework that resulted from the above exercise was aimed at improving a theoretical understanding of the concept, it was employed here to be of use in practice also. A measurement tool that used this framework was presented and explained in terms of the said model.

The cognitive framework and the measurement tool described can only be seen as the beginning of one particular perspective of social capital that may assist in bridging the gap between social capital theory, measurement and practice. It now remains for the model to be tested empirically. The use of the measurement tool in a study of the social capital within formal networks, such as community projects in the first instance is one way of achieving this. Testing and improving the model and instrumentation in an iterative exercise will narrow the gap further.

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Annex 1 Instrument

(see attached file A;/ instrument)