La Revue Tocqueville/The Tocqueville Review 1999 Vol. XX n°1

PROLOGUE TO THE MEASUREMENT OF SOCIAL CAPITAL*

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I. INDIVIDUAL AND COLLECTIVE SOCIAL CAPITAL

Social capital has become quite a popular concept in the sociological and economic literature, and even in the general press. Scientific investigations using this concept have measured it, however, usually in rather ad hoc fashions. In this paper I discuss possible approaches that could be followed to measure the social capital of individuals. What kind of questions should be posed to the individual, and how should these questions be aggregated to a measure of his or her social capital? The discussion in this paper is of a conceptual nature and does not go up to the concrete questions to be asked. The elaboration of these ideas into a questionnaire and a concrete measurement instrument is being carried out now in the *SCALE* research programme.

*An earlier version of this paper was presented at the Conference on Trust and Social Capital, Institut des Sciences Politiques, Paris, November 27, 1998. I am grateful to Michel Forsé for organizing this conference and inviting me, and to discussants at this conference as well as to members of the *SCALE* (*Social Capital in Labor Markets and Education*) research group for their comments. The *SCALE* group includes Henk Flap, Tom Snijders, Frans van Winden (programme leaders), Anne-Bert Dijkstra, Jules Peschar, Arno Riedl, Martin van der Gaag, Beate Völker. Correspondence to Tom A. B. Snijders, Dept. of Statistics and Measurement Theory, Grote Kruisstraat 2/1, 9712 TS Groningen, The Netherlands, email T.A.B.Snijders@ppsw.rug.nl.

Given the amount of literature that has already been devoted to social capital, I will not introduce the concept here (the reader may consult Flap (this issue) for this purpose). However, since knowing what we mean by social capital is a prerequisite for attempting to measure it, I do need to describe the concept first, even if only concisely. The usual terminology of social network analysis will be followed: the individual whose social capital is being considered is referred to as *ego* (or even as *I*), the relevant relationships of this individual to other persons are also called *ties*, and the other persons to whom ego is related are the *alters*.

Coleman (1990, pp. 302-315) introduces social capital by stating: "(...) I will conceive of these social-structural resources as a capital asset for the individual, that is, as social capital.(...) Unlike other forms of capital, social capital inheres in the structure of relations between persons and among persons. (...) social organization constitutes social capital (...). If A does something for B and trusts B to reciprocate in the future, this establishes an expectation in A and an obligation on the part of B to keep the trust. This obligation can be conceived of as a 'credit slip' held by A to be redeemed by some performance by B. (...) Two elements are critical to this form of social capital: the level of trustworthiness of the social environment, which means that obligations will be repaid, and the actual extent of obligations held. (...) As an attribute of the social structure in which a person is embedded, social capital is not the private property of any of the persons who benefit from it".

Discussions about social capital have made it clear that confusion may arise if we are not very explicit about the property rights of the concept. Coleman focuses on social capital as a public good, inherent in the social environment. However, he also mentions the obligations that B has toward the specific individual A. This points toward the conception of social capital as an individual's second-order resources, viz., the resources he can obtain from (or through) others to whom he is tied, like the human capital of his friends (Boissevain, 1974; Bourdieu, 1980; Lin, 1981). In this paper I use this second definition of social capital. Social capital is described as an individual's stock of second-order resources by Sandefur and Laumann (1998) in the following way: "An individual's stock of social capital consists of the collection and pattern of relationships in which she is involved and to which she has access, and further to the location and patterning of her associations in larger social space".

This makes it clear that we are talking about the resources of an individual, but that the larger social environment does have an influence on these resources.

The present paper focuses on how to measure an individual's social capital. Sociologists are not the only researchers who find it hard to measure forms of capital. The New Palgrave dictionary (Eatwell, Milgate and Newman, 1987, p. 345) says: "As a consequence of capital's heterogeneous nature its measurement has become the source of many controversies in the history of economic thought".

For a description of these controversies we refer to the New Palgrave dictionary. To get an impression of the difficulties in defining the value of economic capital, consider the example of a big and up-to-date car factory: its value will be disappointingly low in a country without paved roads; and, in a country with paved roads, its value will become less if a competing car factory is built. Thus we see that, also for economic capital, its value depends on the context which implies severe complications for its measurement.

On the same page, the New Palgrave distinguishes between the *goods* and the *value* aspects of capital. For social capital, the 'goods' are the ties and the resources 'behind the ties'. The established measurement instruments for personal social networks (for a review see Marsden, 1990) are directed to the goods: a 'name generator' makes an inventory of the ties and a 'name interpreter' of the tie characteristics which may include the alters' resources. As an attempt at a definition of the *value of an individual's social capital*, one could say:
The value of an individual's social capital is the total expected value of the benefits that this individual can obtain from his ties to other individuals.

With the 'values of the benefits', I refer not primarily to monetary values, but to the value for the individual as a producer of his own well-being. This follows Lindenberg's (1990, 1996) social production function approach. For the moment, from this approach I just want to mention the basic idea that ultimate goals of humans are physical well-being, social approval, and loss avoidance; that we try to achieve these ultimate goals by pursueing intermediate goals such as physical comfort, stimulation, social status, social approval, and behavioral confirmation; and that the production of these goals can be better understood by considering a hierarchy of more and more concrete instrumental lower-level goals.

Further, substitution is possible to a certain extent between these goals, and it is not uncommon that one activity (or lower-order goal) serves several higher-order goals.

Even with this vague description of the value of social capital, it is clear that this value depends not only on the ties and the persons to whom the individual is tied, but also on the larger community. Two aspects of this are the following.

1. The existence of alternative ways to produce well-being; more precisely, of alternative ways to achieve various instrumental goals. E.g., if I consider the instrumental goal of getting employment, then for this particular goal the value of my ties to persons with information about employment opportunities depends on whether I can also obtain equivalent information by visiting a nearby and costless employment agency. A well-functioning market makes social resources superfluous, and the fact that the importance of social resources is so pervasive (although we are not always aware of this) is caused by the fact that there are so many kinds of exchange for which markets do not work properly. More generally, social institutions provide important ways for goal achievement, and therefore the value of ties is mediated to an important extent by social institutions. This was remarked by Völker (1995, p. 90) and Völker and Flap (1995) and elaborated in Völker's study of the transition from communism to capitalism in East Germany.

2. A second aspect is what Coleman described as "the level of trustworthiness of the social environment, which means that obligations will be repaid". The embeddedness of the relations in the social environment implies third-party effects (e.g., social control) on exchanges going on in each relation. If other persons are aware of A doing something for B, and these other persons are important for B (e.g., because they could sanction him for bad behavior), then it will be more likely that, some day, B will do something for A in return.

Although this dependence of the value of one's social capital on the wider social environment must be acknowledged, it is hard, and maybe superfluous, to take this fully into account in the development of a measurement instrument. We should measure the goods (i.e., the ties and associated resources) with a yardstick that can be used in studies about the value of social capital for various purposes in various social contexts.

II. A FIRST MATHEMATICAL DEFINITION

A tentative mathematical definition of social capital of a given individual 'ego' can be derived from the definition given above. It uses the three basic elements of social capital that are mentioned by Flap and De Graaf (1986, p. 146) and Flap (this issue): the set of alters who could provide help, their resources, and their willingness to help ego with these resources. The first definition is the following:

$$SC = \sum_{i \in A} v_i \, p_i \qquad (1)$$

where

SC	=	the amount of social capital
A	=	the set of all alters of ego
v_i	=	the value of the resources of i
p_i	=	the probability that i will put these resources at ego's disposal when this is relevant for ego.

Later on I will criticize this definition, but for the time being I would like to note that it corresponds reasonably well to the verbal definition given above and the element mentioned by Flap. A question here is, obviously, how to measure the value v_i . The resources should be measured so that this measure reflects the value for the individual as a producer of his own well-being.

III. BENEFITS FROM TIES TO OTHERS

The benefits that an individual can obtain from his ties to other individuals are manifold. The literature on social capital or, more generally, on social networks, provides many examples, such as the following.

1. Help in obtaining a job.
2. Help in doing the job well.
3. Help for school work.
4. Support in times of illness, old age, or other problems.
5. Help around the house for daily things (borrowing a bit of sugar, repairing a broken fence, etc.).
6. Help with filling in forms or other dealings with the official world.
7. Company for leisure activities.

8. Joint production of a collective good.

The exchange perspective is crucial for understanding the way in which an individual benefits from his ties to others. In his discussion of a rational motivation for creating obligations, Coleman (1990, p. 309) writes: "When I do a favor for you, this ordinarily occurs at a time when you have a need and it involves no great cost to me. (....) the importance to you of this favor is sufficiently great that you will be ready to repay me with a favor in my time of need that will benefit me more than this favor costs me (...)".

The basic issues here are *complementarity* because of differences in expertise, in resources in general, and very often because of differences in *timing*; and *trust* that a favor given will lead to a favor received. Complementarity in timing is obvious in the formulation by Coleman. Complementarity in needs and resources is obvious in most of the examples in the list above:
(1) I get information about a vacancy when I need a job, from somebody who knows about the vacancy and has no cost in telling me about it;
(2) I am a statistician and my colleague is a sociologist, and in our cooperation we contribute our complementary expertise to a joint research project;
(4) when I am ill and desperately need some help, a friend does my shopping and cooking, and although the value to the friend of his time may be rather high, it still is lower than the value to me of being helped out;
(5) I borrow a bit of sugar from the neighbor when I need and miss it, and therefore value it highly, and she has it and values it at only the shop price.

Of the examples in the list above, (7) and (8) are not based on complementarity, but show a symmetry in the interests between the involved individuals. These last two examples, however, do involve trust: trust that the company will be agreeable, and trust that the rewards of the collective good will be shared in a satisfactory way.

The complementarity of needs is related to Lindenberg's (1990, 1993, 1996) *framing theory*. When I am working on some aspect of my well-being, this aspect constitutes the *frame* of my decision-making, and resources that are useful for goal-achievement within this frame will be more valuable to me than resources useful for other goals which are, temporarily, outside my frame; e.g., than the effort that it will cost me

later to repay the debts I am incurring now. Framing theory is especially relevant to social capital because help in various *serious need* situations is among the major benefits that we hope to get from our relations with others. When we are in serious need, or contemplate the possibility that we might come in such a situation, our decision-making is likely to be dominated by the frame of *loss avoidance* which is a powerful motivating force (Lindenberg, 1993).

IV. ALTERS X KINDS OF HELP

To analyse the complementarity of ego's and alter's resources and the complementarity of their needs, it is fruitful to have a framework with several kinds of help that can be exchanged or a longitudinal framework where needs and resources are variable over time. A central issue therefore is the *diversity of kinds of resources*. In the following discussion, we consider a set of potential kinds of help $\{1, ..., m\}$. This could be a set of broad categories, like the kinds 1 to 8 in the list above; or a set of detailed help categories, such as (for item (4), support in times of illness) doing the shopping, a friendly visit, medical advice, keeping an eye on the patient in case things get worse, etc. This set of potential kinds of help will normally correspond to a set of resources and also to a set of instrumental goals.

To include in one model both the set of alters (the personal network) $A = \{1, ..., n\}$ and the set of potential kinds of help $\{1, ..., m\}$ that I might get from my ties to them, the clearest procedure is to represent alters and potential kinds of help in a rectangular array.

Table 1: The alter × help kinds array

		Kinds of help						
		1	2	3	.	*j*	..	*m*
Alters	1							
	2							
	3							
	.							
	i							
	.							
	n							

For each alter i and each kind of help j we can define the array element

$$x_{ij}$$

as the *expected value of help of kind j to be obtained from alter i*. For example, x_{ij} could be calculated as the value of the resources of kind j at the disposal of alter i, denoted v_{ij}, multiplied by p_{ij}, defined as the probability that i will put these resources at ego's disposal when this is relevant for ego. This probability is a function of the opportunity of ego to reach i and the willingness of i, if reached, to assist ego with help of kind j. Thus we have

$$x_{ij} = v_{ij} p_{ij} .$$

The total of all array elements gives us the second definition of social capital,

$$SC = \sum_{i=1}^{n} \sum_{j=1}^{m} v_{ij} p_{ij} . \qquad (2)$$

The summation over resources implies that we assume that, in some way, the different resources can be valuated on a common scale. This aggregation over resources will be discussed in the next section. The alter × help kinds array, however, suggests something else which is wrong with the ideas expressed in these two definitions of social capital:

The aggregation of benefits over alters is not additive.

When I need some kind of help, it usually is enough to have one person helping me. Sometimes help from two or more persons is better, but the marginal returns of extra help diminishes quickly. The main advantage of having more than one potential helper is because of the uncertainty that any one of them will indeed help me. If each of my n alters will help me out with probability p and the availability of help from one or the other is stochastically independent, then the probability of at least one person helping me is

$$1 - (1 - p)^n , \qquad (3)$$

which is an increasing function of n indeed, but a function of which the increase slows down exponentially. If I am risk-averse, I may be inclined to use a conservative estimate of p so that the function becomes less

strongly concave than it is for larger p and I am less quickly satisfied with a small number of potential helpers.

Therefore, instead of using (2), it seems better not to sum over alters. If for the moment we leave open how the aggregation over alters is performed, we obtain the better definition

$$SC = \sum_{j=1}^{m} b_j s_j \qquad (4)$$

where

b_j = total value of help of kind j (from all alters together)

s_j = likelihood of getting help of kind j (from any alter).

A question is, how s_j is related to the number of alters who may help ego with help of the kind j. The principle of diminishing returns implies that s_j will be a concave increasing function of the number of alters who may help. If the value of help of kind j is considered to be constant (i.e., a function only of j and not of i), and alter i has probability p_{ij} of helping ego with help of this kind, then (under the assumption of stochastic independence) the probability of receiving help from at least one alter is

$$s_j = 1 - \prod_{i=1}^{n} (1 - p_{ij}) \qquad (5)$$

which reduces to (3) if all helping probabilities are equal.

This formula is too complicated for what we may hope to measure reliably, since we will know the probabilities p_{ij} only in the most approximate sense. Therefore, we might replace this definition of s_j by something simpler, such as

$$s_j = \begin{cases} 1 & \text{if at least one alter is willing to help} \\ 0 & \text{if no alter is willing to help} \end{cases}$$

or by the slightly more subtle

$$s_j = \begin{cases} 1 & \text{if two or more alters are willing to help} \\ 0.7 & \text{if exactly one alter is willing to help} \\ 0 & \text{if no alter is willing to help} \end{cases}$$

where the number 0.7 is somewhat arbitrary, and could be replaced by another plausible value between 0.5 and 1. Willingness to help could be operationalized by tie closeness, under the condition that alter has the required resource for giving help of kind j.

A similar change of perspective from alters to resources was proposed by Lin, Fu, and Hsung (1998) in their proposal of a *position generator.* However, they focused on the diversity of positions of alters, inferring from this the diversity of resources, rather than on the diversity of goals or kinds of help.

V. Aggregation over resources

The summation in definitions (2) and (4) over resources, or kinds of help, indicated by j, makes sense only if the resources can be valuated on a common scale. However, we cannot simply convert all social resources into a common measure for well-being. Two approaches can be taken to obtain a common valuation.

One approach is to restrict attention to a limited domain where it is acceptable to count and add resources in a certain way. E.g., if the domain is the start of an enterprise and the social resources are rather direct alternatives to what is also available on the market, it may be possible to convert social resources into monetary values. If the domain is support in times of illness, time (available for helping ego) may be a suitable unit. If the domain is obtaining a new job, then the resources j could be information about specific kinds of employment opportunities and the value v_{ij} could be taken as 0 or 1 according to whether alter i has information about employment opportunities of kind j. In this case, one could define p_{ij} as 1 for all alters who would be available for and willing to answer a simple question, and 0 for other persons. The measure of social capital in this domain would then be a matter of well-founded counting.

Another approach is in the spirit of the theories of social measurement such as classical psychological test theory (e.g., Ghiselli, Campbell, and Zedeck, 1981) or item response theory (e.g., van der Linden and

Hambleton, 1997). In a meaningfully restricted domain of resources, the amount of resources will be correlated between individuals. Statistical techniques such as factor analysis or item response theory could be used to define a domain of resources with internally suitably high positive correlations and the score v_{ij} could be obtained from such a technique.

If the requirement of a common valuation is applied in a strict way, however, we might be throwing away the child with the bathwater and allow ourselves only to measure minuscule domains of social capital. A discussion of aggregation of alters' resources over diverse domains can best be phrased in terms of the diversity of instrumental goals of which the achievement can be helped through one's ties to others and refer to Lindenberg's (1990, 1996) social production function theory. The dependence of the value of social capital on institutions (see Section I) implies that the value of help through a tie for some instrumental goal depends on the availability and costs of alternative (e.g., institutionalized) means of achieving this instrumental goal. Further, social production function theory teaches us that substitution between instrumental goals is a key issue here.

E.g., consider a broad (i.e., relatively high-level) goal, such as getting a job. One alter might read a newspaper I don't have and look for vacancy announcements for me; another may have good informal contacts with the personnel department of a big firm; a third one may give me advice about how to present myself to potential employers. These resources are quite different and their statistical association may be low, but they all help me in producing the same goal and it may be assumed that they can be mutually substituted to a high degree. But it is impossible in practice to determine in a quantitative way how much each resource contributes to the probability of my getting a job, so that a compelling common valuation is impossible to find.

Secondly, consider another example: practical help in daily activities. Examples of help items are borrowing a cup of sugar, borrowing a car, helping with moving some furniture, the neighbor keeping an extra house key, etc. These are distinct help activities which, however, aggregate in my well-being. For my overall well-being the 'total amount' of help of this kind received by me is more important than what exactly are the received help items. Therefore, here again the aggregation of these items into one help measure can be based on the substitution between the items in the production of my well-being. But different ways for counting the total amount of help in this domain can be proposed and we should not

expect somebody to come up with a compelling unique way for measuring this total.

Conclusion on aggregation

Concluding, we can make the following remarks. It makes sense to distinguish social capital in several domains; these could be theoretical domains, such as comfort, stimulation, social status, social approval, and behavioral confirmation; but they could also be more concrete domains such as earning money, daily activities around the house, dealing with public institutions, leisure activities. We should recognize that social capital has several dimensions, corresponding to broad domains of these types. Measures for social capital should be specific to such domains. The statistical association between amounts of social capital in different domains is an empirical question and reveals us something about the society under investigation. E.g., social capital for doing one's job well and social capital for support in times of illness or other mishap may be correlated differently in different societies or subpopulations.

Within small domains, the aggregation of kinds of help, or of alters' resources, can be based on a common valuation (e.g., money, time, or a count of comparable units) or on statistical associations (e.g., as revealed by a factor analysis or by the application of an item response model). But also in larger domains, in the absence of a common valuation or of strong correlations, it can be argued that different kinds of help in a given domain all contribute to our well-being and can be substituted for each other. Substitutability between instrumental goals in the production of well-being then provides the basis for aggregating kinds of help within such domains by summation or weighted summation. The lack of a common valuation implies that the weights in this summation are arbitrary to some extent. A good selection of questionnaire items about kinds of help or resources, providing an even representation of relevant support possibilities in the given domain, then has to provide the basis for the (weighted) summation. This does imply that the resulting measurement instrument may not be easily transferable between different societies, and that its relevance even within societies may be restricted to certain life cycles or certain subsocieties.

High within-ego associations between items in the measurement instrument are attractive for the reliability of the instrument but not necessary for its validity, since the aggregation is not necessarily based on inter-item correlations.

VI. Association between help items

The discussion in the preceding sections was based on the alter × help kinds array which refers to questionnaire items of the type "to what extent could you obtain help of kind *j* from individual *i*". With respect to the statistical association (or correlation) between such help items, we should realize that we have here a *multivariate two-level structure*: multivariate because there are multiple help items, two-level because alters are nested within egos. Multilevel data structures are discussed, a.o., in Bryk and Raudenbush (1992) and in Snijders and Bosker (1999). A multivariate two-level structure such as this can be represented by a three-level structure (cf. Snijders and Bosker, 1999, Chapter 13) where the items are at the first (most detailed) level, alters at the second, and egos at the third level. Multilevel representations of personal network data are discussed in Snijders, Spreen and Zwaagstra (1995) and in Van Duijn, Van Busschbach and Snijders (1999). Because of this multilevel structure, in the association structure of the help items we have to distinguish the association between items within alters, and the association between items within egos. Two items are correlated *within alters* to the extent that the same alter provides the two kinds of help. Two items are correlated *within egos* to the extent that there is association between whether an individual (ego) is helped *by anybody* in the first way, and whether he is helped *by anybody* in the second way. In other words, the within-ego association is perfect if every individual either is helped in both ways or in neither way, irrespective of whether this help is obtained from the same alter or from different alters. (The relations between within-ego correlations, within-alter correlations, and total correlations is the same as the relation between between-group, within-group, and total correlations elaborated in Chapter 3 of Snijders and Bosker, 1999).

For the association between kinds of help in daily activities, my conjecture is that the within-alter association is moderate because of resource differences between alters while the within-ego association is reasonably high because whether ego is able to obtain such kinds of help depends on his general behavior in daily-life exchanges with others. For associations between the amount of help obtained in broad domains, such as between help in obtaining a job and support in time of illness, my conjecture is that within-alter association is quite low. I do not have a conjecture about the within-ego association. For social capital in such different life domains, it seems advisable to develop separate

measurement instruments and study the statistical association between the domains in an empirical way.

A good procedure for measuring the statistical association between kinds of help, or support obtained, when this help or support is scored dichotomously ("help is obtained" versus "help is not obtained"), is the *Jaccard coefficient* (Jaccard, 1900; also see Snijders, Dormaar, Van Schuur, Dijkman, and Driessen, 1990). For two kinds of help $j = 1$ and $j = 2$, the Jaccard coefficient of their association is

$$J = \frac{\pi_{11}}{\pi_{01} + \pi_{10} + \pi_{11}},$$

where π_{11} is the probability that both kinds of help are obtained, π_{01} is the probability that the first kind is not obtained but the second is, and π_{10} is the probability that the first kind is obtained but the second is not. Thus, this J is the ratio of the probability of getting both kinds of help to the probability of getting at least one kind of help. For measuring the within-alter association the Jaccard coefficient is especially suitable because it is not sensitive to all the persons who do not help ego in either way (which is reflected by the absence of the probability π_{00} in the definition of J).

As an example, some results are presented from the analysis by Lubbers (1998) of the Presos social network data set (Felling, Fiselier and van der Poel, 1991). The within-alter Jaccard coefficients between having obtained various kinds of support, for the egos who needed such support, are given in Table 2, and the between-ego coefficients in Table 3. It is clear indeed that within-alter coefficients are low. Further, within-ego associations are quite high.

Table 2: Within-alter Jaccard coefficients between obtained support

		1	2	3	4	5	6
1	Jobs in the house						
2	In case of illness	.18					
3	With relation problems	.10	.17				
4	In case of depression	.15	.20	.37			
5	In case of life events	.19	.18	.29	.36		
6	Borrowing something	.10	.05	.05	.05	.03	
7	Filling in forms	.08	.07	.06	.06	.11	.00

Table 3: Within-ego Jaccard coefficients between obtained support

		1	2	3	4	5	6
1	Jobs in the house						
2	In case of illness	.75					
3	With relation problems	.70	.67				
4	In case of depression	.73	.79	.86			
5	In case of life events	.76	.85	1.00	.67		
6	Borrowing something	.80	.92	.90	.90	.88	
7	Filling in forms	.53	.66	.78	-	.62	.65

The within-ego association between help items is important for the reliability of measuring social capital. Highly correlated items lead to a higher reliability than low correlated items. In other words, if the within-ego associations are low, then more items are required for a reliable measurement instrument than if the within-ego associations are high.

VII. What does this imply for a measurement instrument?

Summarizing, it is important for social capital to have ties to other persons who are willing to provide help and who jointly command diverse resources. The diversity of resources, or kinds of help, is the major determinant of the 'quantity' of social capital, not the number of persons to whom one is tied. Aggregation over alters must be carried out by a strongly concave function, with conjunction of the indicator functions ("having at least one alter") as the extreme, rather than by a summation procedure. Aggregation over kinds of help can be carried out linearly, i.e., by summation, possibly weighted. This aggregation should be limited to resources (or kinds of help) which can – to some extent at least – substitute for one another in the production of well-being. This means that it is important to define domains of well-being and measure social capital for such domains separately.

Items for a measurement instrument can be of the generic kind: 'Do you have anybody who could (or would) help you with *j* ?' This kind of item does not imply a name generator, and thus leads to more parsimonious data collection than measurement of social capital on the basis of a personal network inventory. If it is desired for other purposes to let the measurement instrument for social capital be part of a name

generator, one could use name generating questions such as 'Mention persons who could help you with *j*, and would do so if you requested them.'A rather low maximum number of names could be used for the purpose of social capital measurement, such as 2 to 4.

Another class of potential items consists of ties to resources. This generalizes the positional items of Lin and Dumin (1986) and Lin, Fu and Hsung (1998) who ask about ties to jobs, selected to give a representation of prestige and class positions. Instead of asking only about ties to alters with specific jobs, it would be relevant to ask questions about ties to alters who command more general kinds of resources. In order to have a general valid measurement instrument for social capital, it seems preferable to cover a wide range of instrumental goals for the production of well-being. The generic questions then are 'Do you have a tie to anybody having resource *j*?' and 'Mention persons to whom you are tied, who have resource *j*.'

The criterion of 'having a tie' should be sufficiently strong that it may be inferred from a positive answer that the alter in question would indeed help ego with this resource, if ego would request this. The resources *j* could be financial (e.g., anybody earning at least a given salary, anybody having at least a given financial capital), educational (e.g., anybody having graduated from law school), vocational (e.g., anybody knowing how to fix a car engine), political (e.g., anybody with sufficient leverage in the local administration), leisure-related (e.g., anybody knowing how to dance the tango), etc. For measuring social capital within a domain that lacks a single convertible currency such as time or money, the items should provide an even representation of diverse resources in the domain.

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ABSTRACT: It is discussed how social capital, defined as an individual's second-order resources, should be measured. The aggregation over resources (or kinds of help) and the aggregation over alters are discussed. It is argued that several domains of well-being should be distinguished, and social capital measured for these domains separately; that aggregation over resources should be based on either a common valuation, or on statistical associations, or on substitutability in the production of the individual's well-being; and that for aggregation over alters the main distinction is between having no, or at least one alter who could provide a given resource. For studying the statistical association between second-order resources available to individuals, a distinction is proposed between, on one hand, within-alter associations, and on the other, within-ego associations.