CORRESPONDENCE OF THE SUBJECTIVE PROXIMITY OF SOCIAL REPRESENTATIONS AND INTER-REPRESENTATION ACTIVATION

CORRESPONDENCIA DE LA PROXIMIDAD SUBJETIVA DE LAS REPRESENTACIONES SOCIALES Y LA ACTIVACIÓN ENTRE REPRESENTACIONES

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ABSTRACT

Forced association tasks based on the basic cognitive schemes (SCB) model might be a very useful resource to qualify the relationships between concepts – potential social representation objects – by means of differential activation, whether related or not to a social representations theoretical framework. However, it is important to find some empirical support showing that the activation results provided by such tasks are backed up by alternative activation measures. The present paper aimed at verifying if the activation proportions of the relationships of some concepts with the social representation on aging are compatible with direct perceived proximity evaluations rated by a similar population. A sample of 102 undergraduate students from an Italian university completed forced association SCB tasks that measured the activation of 28 relationships. The effects of a log-linear saturated model indicated partial correspondence of the magnitude of the assessed relationships, pointing out to the validity of employing SCB tasks as an activation measure. Some considerations are made concerning the possibility to refine the empirical measurement of SCB-based relationships.

Key words: Basic Cognitive Schemes, Social Representation, Activation, Aging

RESUMEN

Tareas de asociación forzadas basadas en el modelo de los esquemas cognitivos de base (SCB) podrían ser un recurso muy útil para calificar las relaciones entre conceptos – potenciales objetos de representación social – por medio de activación diferencial, relacionada o no con un marco teórico de las representaciones sociales. Sin embargo, es importante encontrar algún apoyo empírico que muestre que los resultados proporcionados por la activación de estas tareas están respaldados por medidas de activación alternativas. El presente artículo tiene por objeto verificar si las proporciones de activación de las relaciones de algunos conceptos con la representación social sobre el envejecimiento son compatibles con evaluaciones directas de proximidad dadas por una población similar. Una muestra de 102 estudiantes de pregrado de una universidad italiana han completado tareas de asociación forzada SCB que mide la activación de 28 relaciones. Los efectos de un modelo log-lineal saturado han indicado una correspondencia parcial de la magnitud de las relaciones evaluadas, señalando a la validez del empleo de las tareas SCB como una medida de activación. Se hacen algunas consideraciones sobre la posibilidad de refinar la medición empírica de las relaciones basadas en SCB.

Palabras clave: Esquemas cognitivos de base, representación social, activación, envejecimiento.

The basic cognitive schemes model, also called SCB (acronym derived from the original expression in French, schèmes cognitifs de base) is a model of 28 connectors that they express different kinds of relationships – linking two terms, usually nouns, named A and B. The structure consisting of the two terms linked by a connector is called triplet. The connectors can be classified according to the type of relationship that they communicate; descriptive (such as B is a synonym of A, B is a definition of A, B is a part of A…), practical (A acts over B, B does A, A is used to do B…), attributive (A causes B, A is always characterized by B…) and evaluative (B evaluates A, A must have the quality of B…), (Guimelli & Rouquette, 1992; Rouquette, 1994; Rateau, 1995).

In social psychology, the SCB model has usually been employed in the field of social representations to study the activation of relationships between social objects, i.e. topics, issues or events that are relevant for a social group. Another kind of use concerns the activation of relationships between a social object and other concepts that are aspects of it (Rouquette & Rateau, 1998). As an example, we can mention the element «death» and the social object «AIDS», conveying the idea that AIDS is somehow related to the concept of death.

In operational terms, activation is understood as the number or proportion of activated connectors linking A and B in a set of triplets, at the level of an individual or a sample of individuals. An SCB-based questionnaire contains one or more lists of relationships involving A and B terms –or in some cases, one fixed A term and the B terms produced by means of association by respondents– and subjects assess each triplet deciding if the relationship is true or not. It is then possible to evaluate the strength of a specific relationship or overall proportion of activated relationships, which is an indicator of the salience of the set of relationships involved. Such a proportion is called valence; it can be assessed at the general level of the whole set of connectors, or at the level of subsets of connectors, which is given the name of partial valence.

The activation of a single relationship simply means that it is true or valid for a person. The valence[1] of a relationship or set of connectors is interpreted as the associative power (cf. Moliner, 1994) of a concept or social object, if a fixed A term is evaluated with various relationships with its elements; or the associative power of the various relationships involving a fixed A and B terms. In this paper we are interested in this second case, which is given the name of constituted or forced association – the researcher proposes two social objects as A and B terms and measures the valence associated with that relationship by means of an SCB task (Fraïssé & Stewart, 2002).

Such procedure is specially relevant for a recent course of study in social representations research, concerned not only with describing the contents and structure of isolated representations, but rather with assessing inter-representation relations; that is the level of analysis of representational systems or families (Camargo & Wachelke, 2010; Garnier, 1999; Milland, 2001). Fraïssé (2000) was a pioneer in that sense; the author was the first to employ a forced association task, in a study that characterized the links between the notions of official and alternative medicine.

SCB-based forced association tasks might be a very useful resource to qualify the relationships between concepts by means of differential activation, whether related or not to a social representations theoretical framework. However, it is important to find some empirical support showing that the activation results provided by such tasks are backed up by alternative activation measures. Although the SCB model is internally coherent, the validity of its use cannot be taken for granted without some kind of cross-check.

The present paper aims at verifying the existence of a correspondence of the data relative to the activation of social representation object labels and the subjective perception of their proximity. The purpose is to observe if the activation proportions –valences- of the relationships of some concepts with the social representation on aging[2] are compatible with direct perceived proximity evaluations rated by a similar population.

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[1]   Please note that valence here is defined differently from emotions research; while in such studies it refers to positive or negative aspects, in the structural approach to social representations it is the number or strength of activated relationships of a social object or social representation element.

[2]   For a justification of the consideration of aging as a social representation object, see Wachelke, 2008.

In a recent study, Wachelke and Contarello (2011) asked 151 Psychology undergraduate students about the distances of different concepts with the topic of aging. The participants rated the distances from far to close, in a four-point scale, with score 4 meaning that perceived proximity was very high. Three concepts are the focus of our interest here: «death», «family» and «health». Past research has already investigated those concepts successfully as social representation objects (cf. Costa e Silva & Cunha, 2005; Herzlich, 1969; Nascimento & Roazzi, 2007) and we will proceed likewise. All of them were considered as suitable candidates to integrate a representational system with the topic of aging. The concept of death was perceived as being the one closest to aging ($M = 2,79$, $SD = ,51$), followed by the perceived proximity relative to health and aging ($M = 2,42$, $SD = ,81$). The concept of family was perceived by participants as being much less related to aging ($M = 1,17$, $SD = ,86$).

We thus raise the hypothesis that the valences of the relationships of aging with those other three concepts, obtained with another sample, will respect the magnitudes obtained with the direct subjective ratings of distances. If some concepts have stronger relationships than others, then such perception should be supported by higher activations of SCB connectors. In the present case, with a similar population of undergraduates with data collection following Wachelke and Contarello's only by a few months, it is expected that the valence of the relationships between aging and death will be higher than the one linking aging and health, and the lower valence, by a stronger contrast, should be the link between aging and family.

Method

Design

The study had a 2 x 3 independent measures quasi-experimental design, which was related to a forced association basic cognitive schemes (SCB) task (cf. Fraïssé, 2000). Each condition consisted of the assessment of an evaluation of a relationship involving aging and one of the other three concepts dealt with in the study; there were six conditions as there was the need to balance the order of the A and B terms so that all possibilities linking the concepts and connectors might be taken into account, since various connectors imply one-directional relationships.

The first factor accounted for the order of the aging label on the 'A connector B' triplet that is characteristic of SCB tasks, with modality one being aging as the A term, and modality two being aging as the B term. The second factor was related to the object entered in the SCB triplet together with aging, with modality one: death, modality two: health and modality three: family.

Participants

A total of 102 undergraduates from a university from Northeastern Italy composed the study sample. The majority of them, 77 (75,5%) were women. Participants' ages ranged from 19 to 26 years old, with a mean of 21,19 years ($SD = 1,40$) and a median of 21 years. A total of 62 participants (60,8%) were enrolled on the second year of the Psychology graduation course, while the other 40 were Motor Sciences students enrolled on the third year of the course but attending a compulsory Psychology course.

Instrument

A questionnaire in Italian language was employed in data collection. There were 6 versions of the questionnaire, each one involving the assessment of relationships between aging and two other concepts among health, death and family. On the opening page, participants were informed that they would provide their opinions about themes of social life. After that, they had to fill in two forced association basic cognitive schemes (SCB) task (cf. Fraïssé, 2000) relating the concept of aging with the other two concepts included in that questionnaire version. On one of the tasks, aging was the first term on the triplet, and the other one was the B term. The six versions included all possible combinations of aging with the other objects.

Each SCB task had a list of 28 sentences linking the two concepts. Each sentence conveyed the meaning of the relationship expressed by each of the 28 connectors from the SCB model. Participants should indicate if each sentence, according to their understanding, was true («yes» response), was not true («no» response) or if they did not know if it was valid or not («?» response).

There were 17 participants per questionnaire version, which accounts for the total N of 102. However, each participant provided data for two conditions; therefore, it must be considered that the unit of analysis is the evaluation

of SCB triplets, and not the participant. As a consequence, for each research condition of the design, there were 34 cases, for a total of 204 global evaluations involving representation object labels, each one containing 28 individual connectors evaluations.

Procedure

Questionnaires were administered in university classrooms by the researcher. They were shuffled, so as to distribute questionnaire versions randomly to participants. log-linear analysis was conducted to assess the effects of order and of the different relationships on the activation of basic cognitive schemes. Connector activation was the dichotomous dependent variable for all analyses, taking values «No» [aggregation of «No» and «?» responses; this is the usual procedure employed in SCB tasks (cf. Guimelli & Rouquette, 1992; Rouquette & Rateau, 1998)] and «Yes». Since we were interested in a global level of activation, all connectors were included in the calculation of the activation proportions. Analysis consisted in the calculation of the effects and parameters of the saturated model with a Microsoft Excel-based program for the analysis of three-way tables (Sanchez-Peregrino, 2008). The number of cases in each table varied accordingly with the number of connectors: 3 objects x 2 triplet orders x 34 cases per condition x 28 connectors, adding up to a total of 5712 cases.

Results

The saturated log-linear model was significant, indicating that there were associations of variables [Y^2 (11) = 1055,724, $p < ,001$]. Much of the global effect is due to a prevalence of non-activation responses [Y^2 (1) = 989,14, $p < ,001$]. This pattern is not unexpected, since object labels are directly provided by the questionnaire, as the task involves forced association. In the most common SCB tasks –named classical SCB tasks, (cf. Fraïssé & Stewart, 2000), participants themselves provide the answers, and therefore it is more likely that they refer to more activated elements.

The response distribution is shown in Table 1. Results indicated significant Activation x Object [Y^2 (2) = 37,182, $p < .001$] and Order x Activation x Object interactions [Y^2 (2) = 28.867, $p < ,001$]. The two-way interaction means that the activation proportions for health (32,8%, $z = 3,94$) and

death (31,3%, $z = 2,24$) in relationships with aging are higher than those of family (24,4%, $z = -5,93$).

Table 1

Response distributions for the global set of SCB items (Triplet order x Representation object x Activation)

	Social representation object					
	Death		**Health**		**Family**	
Order	No	Yes	No	Yes	No	Yes	Total
Ag. A	679	273	600	352	747	205	2856
Ag. B	630	322	679	273	692	260	2856
Total	1309	595	1279	625	1439	465	5712
	1904		1904		1904		

The three-way interaction indicates that the concepts exhibit different activation profiles with aging when the order of SCB terms is taken into account. Health is more activated when aging is the A-component of the triplet (36,9%, $z = 5,35$, $p < ,001$), than when it is B (28,7%). Death, on the contrary, has a non significant trend of being more activated when it is the first term (33,8%, $z = 2,21$, $p = ,054$) than when aging is (28,7%), and family also has a significant trend in that direction (21,5% as A, $z = 2,99$, $p < ,01$ and 27,3% as B).

Discussion

The results indicate a partial confirmation of our hypothesis: the activation proportions (valences) relative to the relationships between aging and health and aging and death are higher than the valence connecting aging and family. In terms of a general view, this profile respects the pattern of results found by Wachelke and Contarello (2011) with a very similar sample: death and health were perceived by their participants as being more closely related to aging than family; the latter concept had much lower perceived proximity. The effect size of the difference was small, which suggests that the effect would probably not be found in the case of closer distance rates. Additionally, the results of the SCB forced association tasks did not allow to identify differences in terms of the ratings involving health and family that were found in the direct evaluations. If that had been the case, then the valence of the aging – death relationship should have been higher than those of aging – health, which did not happen; they had very similar activation proportions, with a slight advantage to health.

Another effect also deserves attention. There was a tendency of higher activation of the family relationships when the family term was at the first position of the triplet, and the opposite trend was true for health. The specificity of the contents associated with each concept for a given group might be one possibility to explain those results. If that is the case, then relationship directions are to be investigated through the meanings of concepts while taking their social representation structure into account, and thus through a compatibility of inter-representation relations; some contents would «suit better» a certain direction than others. Moreover, what does being in the A or B position imply? Various SCB connectors are non-symmetrical, taking the «A has property B» format, which might suggest that A is the upper order component and B is the subordinate one. Even for the symmetrical connectors, perhaps the way in which items are expressed might imply such an understanding on the part of the subjects, favoring the activation of compatible relationships. Still, could it be that there is a bias in items that leads people to interpret the A term as being hierarchically superior to the B term? Such interpretation is supported by Milland's (2001) results about the forced association SCB task, which shows that B term is an aspect of A. That might be implicitly understood by research participants as some kind of subordination. Anyhow, the identified trend of differential activation of concepts in terms of triplet position was not expected, and therefore we cannot provide strong explanations for that effect; a better understanding of it would require further research efforts.

So what is there to conclude? Is the use of SCB tasks a legitimate resource to measure the activation of a relationship between concepts? In spite of the mentioned order effect, we are inclined to answer that question positively. The most important difference involving the perception of the directly assessed relationships – the contrast between the family relationship with the other two – was also found with the SCB technique. However, there is need for a higher refinement of the empirical operationalization of the basic cognitive schemes model. The measurement of isolated connector relationships might not hold many problems – Fraïssé (2000) also employed that procedure – but the grouping of connectors with diverging directions might entail some difficulty. Although Rateau (1995) found empirical connections justifying the measurement of three different meta-schemes – descriptive, practical, evaluative – as an alternative to the general valence measure including the whole set of connectors, it is unlikely that opposite relationships – for example, relationships indicating synonym and antonym relationships - are activated by the same concept, as already pointed out by Clemence (1995). In other words, the theoretical model – the list of connectors and possible relationships implied by them – is fine, but the measurement choices concerning the gathering or reformulation of those connectors in a smaller number of dimensions might still have some room for improvement from a psychometric point of view. Ruiz and Coy (2004) provided an alternative to deal with that problem, by formulating six items, inspired by the SCB model, to measure six broader possible relationships between concepts, such as cause or effect, action, example, quality, and so on. The meanings of those broader connectors do not correspond exactly to the 28 connectors of the SCB model, but they respect the general principles of qualifying relationships between concepts in terms of their logical nature. Therefore, other than looking for alternative procedures to find universal empirical links concerning the classical SCB connectors, there is also the possibility of formulating theoretically-compatible alternative activation measures.

As a final note, the results of the present study evidenced the existence of links in terms of explicit, perceived activation of relationships and activation of relationships as measured by means of an SCB-task. That convergence points out to the pertinence of the SCB model to measure activation and also to its potential as a model to direct the construction of more refined empirical techniques in that direction. More precisely targeted measures are likely to better characterize the activation of psychosocial relationships and contribute significantly to social knowledge research.

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