

The Study of Social Representation Systems: Relationships Involving Representations on Aging, AIDS and the Body

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Past studies have pointed out that social representations on AIDS, aging and the body might be connected. The present paper reports an exploratory study that aims at characterizing their relationships. The sample was composed of 1118 secondary school and university undergraduate students, who completed a questionnaire about one of the three objects. The main task was to choose 3 of 12 words extracted from the literature that were more strongly related with the object in question, and then justify their choices. Data analysis consisted of descriptive statistics, correspondence analysis and typical vocabulary analysis. The results from correspondence analysis suggested that the representations on AIDS and the body are associated with the element young, whereas the representations on the body and old age intersect on elements 'health' and 'life'. It is concluded that there is empirical evidence of interaction zones involving the mentioned representations, and the reference to *thêmata* and recent developments from the structural approach might provide the guidelines to the underlying logic of a representational system.

Social representations theory has been extensively employed in applied research, and the domain of health knowledge and practices has been one of the main foci of study, especially in Brazil (Camargo, Wachelke & Aguiar, 2007). Some of the most studied social representations related to health are the representations on AIDS aging and the body, which have usually been investigated separately. AIDS is usually represented as a social and biomedical problem linked to intimacy and otherness (Joffe, 1996; Bousfield & Camargo, 2009). Some of its most important elements are related to sex and death (Tura, 1998; Camargo, 2000). The social representation on aging¹ involves aspects such as losses in terms of beauty, social relations and work productivity, and the natural wearing-out of the body (Veloz, Nascimento-Schulze & Camargo, 1999). Young and elderly people tend to see it as a fixed stage, rather than a process, and the latter oppose it to the lifestyle and activity level of youth (Magnabosco-Martins, Camargo & Biasus, 2009). The social representation about the body is centered on the two broad notions of aesthetics – beauty, and health/well being (Goetz, Camargo, Bertoldo & Justo, 2008). The body is also perceived as playing an important part in interpersonal relations and personal achievement (Secchi, Camargo & Bertoldo, 2009).

There are signs of the existence of a system or network involving the social representations on AIDS, aging and the body. Three dimensions seem to pervade the contents of the three representations. The first one is the sphere of health: aging is perceived as a phase of life or process in which health problems come around more often, marking a general decline; AIDS is in itself seen as a severe health problem, an illness; and one of the main poles of the representation on the body involves the body as a reflection of one's health or lifestyle. A second dimension is that of sexuality, especially for the representations on AIDS, which has causes linked to sexual behavior and intimacy, and the body, particularly concerning attractiveness. Finally, the dimension of life span makes itself present, as AIDS is perceived as being a problem

¹ We would like to justify our choice of using the expression “representations on” rather than “representations of”. Having in mind that a representation is connected both to a social object and a social group, we chose to use the possessive “of” to refer to the group – the “owner” of the social representation – while we used “on”, or “about” to connect the social representation to its “content” or “topic” – the object. While we reckon that the use of “of” is more common and that the use of the apostrophe in the English language to communicate possession might avoid the ambiguousness of having to use “of” for the group and for the object at the same time, we employed the expression “representations on” based upon the understanding that it is grammatically correct and more directly “transferable” to other languages.

linked to sexuality and the lifestyle of the young, and the representations on body point to an ideal that is closely related to youth – a youth that clearly opposes old age.

Those intersections suggest that those representations might be related in an organization similar to a representational system, as mentioned in the literature. The present effort is an exploratory research with the objective of characterizing the relationships maintained by the contents of the social representations on AIDS, aging and the body through focusing on their common aspects (whether other representation objects or other pertinent symbolic formations). The present paper is a study about the relations among three social representations (AIDS, body and aging). Two theoretical contributions are pertinent to provide a framework for the problem: the research about representational systems and the social thinking architecture.

REPRESENTATIONAL SYSTEMS

Even though social representations are usually studied separately, they are organized in sets. This is already implied by the mechanism of anchoring, introduced by Moscovici (1961/1976) in the first presentation of social representations theory. If a representation is constructed through the interpretative resources contained in preexisting knowledge, then the representations already shared by a group serve as a reference point for the new representation, and the old and new representations maintain a relationship among themselves. Breakwell (1993) pointed out this essential level of relations among social representations: a clear derivation of the anchoring process is that social representations are organized in networks.

Rouquette (1994) indicated three reasons to support the idea that social representations interact among themselves: representation objects are not conceived independently of each other, the borders of social representations are not naturally defined – they are a result of research decisions – and the representations related to social objects that were intertwined or inter-related in the course of historical events reflect that historicity: they bear a heritage of the development of past events.

Di Giacomo (1980) was a pioneer in studying the interaction of sets of social representations, as he demonstrated that the outcome of a protest movement organized by students could be explained by the representations that the student population shared about itself, about the leaders of the movement and their strategies. Since students considered that the protest

committee and their culture were different from the student population, the protest eventually failed to generate long-term adhesion. Such conclusion would not have been reached if those social representations had been studied separately.

The first researchers to state explicitly that when various social representations have mutual relations they form an organized unit were Bonardi, De Piccoli, Larrue and Soubiale (1994). They have conducted a study reporting evidence of interdependency between the social representations on “Europe” and “politics”: the word associations related to both objects made it possible to identify semantic equivalences that were statistically associated. The authors have employed the expression representational field to refer to an integrated set of social representations. Similarly, De Rosa (1995) employed the expression representation constellation.

Garnier (1999) employed the term representational system to designate two or more representations that are related to each other. In her case, she carried out a study about the social representations of nursery and school-age children about the body, health and environment. Her results showed a pattern according to which isolated representation structures are formed first, and at a later development stage those representations become associated through structural links, operationalized by similarities in evoked words for the three objects. Those representations were then characterized as part of a system about human relations.

Milland (2001) investigated the social representations of students and young unemployed people about work and unemployment; he observed that those representations are part of the same “family” – the term that he employed in an interchangeable way with Garnier’s “system”. The author demonstrated that the social representation on unemployment is first structured in association with the one about work, and the social representation on unemployment becomes more autonomous only when people acquire practical experience linked to not having a job. Also important in Milland's work is the understanding he advances that within a representational system a transformation in one representation might bring about a transformation in another representation of the same system.

Campos and Lagares (2002) advanced the position according to which for some social objects the unit of interest is a representation system comprising objects that are pertinent within a broader situation. They applied this perspective to study the social representations of drivers on traffic, understood as a representational system including representations of the drivers about themselves, about other drivers, about the task of driving, and the overall context of traffic.

Two other studies identified the existence of inter-representation relations at the level of word evocation associations. Larrue, Bonardi and Roussiau (2000) investigated the social representations of students on politics, right-wing and left-wing and observed that only the relations between the representations on right-wing and left-wing were significant. Valence and Roussiau (2005) observed semantic equivalences in the structures of three social representations: Human Rights, democracy and institution, and through a provoked change in a central element of the social representation on Human Rights they verified that its structure was transformed, as well as the structures of the other two representations. That was interpreted as a sign of a network organization binding those three social representations.

THE SOCIAL THINKING ARCHITECTURE

What explains the existence of relationships among social representations? The topic has not been extensively studied, but a tentative answer to that question is provided by the theoretical model of the social thinking architecture. It is a higher-order structure proposed by Rouquette (1996), that organizes symbolic social thinking formations such as opinions, attitudes and social representations in a hierarchy: the most stable, abstract, widely shared and collective formations provide the direction for the construction of meaning and structuring of more flexible and particularized ones (Flament & Rouquette, 2003). According to the authors, opinions refer to specific actors and objects, while attitudes are related to general classes; the former are then subordinated to the latter, while attitudes are subordinated to social representations, and these are subordinated to ideological constructs, such as the *thêmata* (Moscovici & Vignaux, 1994)—long duration basic ideas that usually take the form of key oppositions (i.e., male – female, life – death...) to structure representations.

If those four types of formations are taken into account, then we refer to four levels of the architecture, with the ideological level of the *thêmata* being the uppermost one, and the one of opinions the lowest. The fact that each level is somewhat encompassed by the level directly superior to it justifies the suggestive name of “hierarchy of nested reasons” to the architecture (Rouquette, 1996).

The social thinking architecture is a model that privileges a sociological view, a top-bottom perspective. The collective stances are the ones that direct the functioning relative to the

lower ones, and give possibility to conditions for their development. According to this model, it is not a set of attitudes that gives meaning to a social representation, but the other way around: it is a social representation that makes it possible to understand the coherence of a set of attitudes about related objects. Although the sense of the direction has not been confirmed empirically, there is evidence for the existence of compatibility involving the contents of ideological constructs, social representations and attitudes (Rateau, 2000), what has also been called the “domino effect” (Wolter, Gurrieri & Sorribas, 2009).

Within the framework of the social thinking architecture, relations among social representations would then be situated at a same level of the hierarchy. What would explain the logic of those relations is a higher-order formation, such as for example a thema. Social representations related to the same grand themes would then maintain relationships among themselves, forming a system, and the coherence of that system would be obtained through the identification of the thema or thêmata superordinate to it.

It is thus possible to distinguish two levels of relations involving social representations. A horizontal level concerns the mutual relations of various social representations among themselves; this is the level that was privileged in most of the studies that were mentioned, such as Di Giacomo’s (1980), Garnier’s (1999), Milland’s (2001), Campos and Lagares’ (2002), Larrue et al.’s (1994) and Valence and Roussiau’s (2005). In contrast, if Rouquette’s (1996) hierarchical model of the social thinking architecture is taken into account, then a vertical level is identified in which higher-order social thinking formations influence the configurations of social representations, including their horizontal connections. In spite of the characteristics of the architecture model and the priority given to top level formations, little is known about the interactions between those stances, which means that there is vast space for research and theoretical development.

METHOD

Participants

A convenience sample was selected for the purposes of the study composed of 1118 women with a wide age range ($M = 22$ years and 7 months, $SD = 7$ years), all of whom were secondary school or undergraduate university students. We chose to include only female participants so that there

could be reasonable balance concerning the number of cases per object to make comparisons legitimate.

Three participant groups were constituted according to the object that they completed the questionnaire about: AIDS ($N = 299$), old age – employed as a label for the aging object, as past research indicates that both attain very similar results ($N = 344$), and body ($N = 475$). The sample was formed by people who participated also in other studies conducted by the research group about those themes. Such studies had different general aims, but the data relative to the three objects was gathered for the current work due to the existence of common items in the employed instruments. Each participant provided responses about only one object because it would have been inappropriate to include the others in the same instrument, as it would deviate significantly from the overall purposes of each questionnaire, given the fact that they referred to different projects.

It is important to point out that although the mentioned convenience sample does not allow us to consider our participants as forming psychosocial groups in a strict sense, the fact that they share identities linked to school or academic roles justifies conceiving them as more than artificial taxonomic groups. In schools and universities students share experiences, goals and interests with their colleagues. While we are aware that our participants do not share the self-consciousness requirements to think of them as a prototypical reflexive group (cf. Wagner, 1994), they are far from being a statistical invention.

Instrument and Data Collection

Questionnaires were administered in a collective classroom situation. In order to investigate the relations among the social representations, the instrument had an item with a task that asked participants to choose 3 terms among 12 that were more related with the object included in the questionnaire—AIDS, old age or body—followed by an open ended question that requested explanation for the choices.

The 12 words were pairs selected after consulting the literature about the social representations on the mentioned objects. They related to concepts that were present in the representational fields of those representations. The pair *death-life* is linked to the AIDS objects, while *old-young* and *wisdom-energy* were related to the old age object, and *beauty-ugliness* and

health-illness to body. Some of those pairs might constitute *thêmata* (*death-life, old-young*), due to referring to broad opposed categories; some others are more likely to designate representation objects (*health-illness, beauty-ugliness, wisdom-energy*); however, such distribution was not intentional. After observing in the literature that the contents relative to the social representations linked to the mentioned objects were strongly antinomic, we chose to include the most salient pairs of words regardless of the fact that they might correspond to *thêmata* or other constructs; we simply chose to include the main oppositions that had been identified.

Aside from the mentioned questions, the instrument also contained other items relative to specific studies about each social object. These are not pertinent to the study and will not be dealt with further.

Data Analysis

Data analysis procedures employed descriptive statistics (SPSS software) and multiple correspondence analysis in the responses to the choice task, and an analysis of specific vocabulary of the three groups in the responses to the open-ended question with the aid of the software SPAD (*Système Portable pour l'Analyse des Données*).

RESULTS

According to Table 1, amongst the secondary school students who completed the questionnaire relative to the inducting term “AIDS” 73.4% of a total of 893 evocations were distributed equally among the three elements: illness, death and sex. The social representation on AIDS as a lethal disease that is sexually transmitted, thoroughly disseminated in this age group, has emerged clearly.

For those who provided responses about the inducting word “old age”, 73.7% of the 995 occurrences were distributed in an ordered way according to their importance among the following elements: *wisdom, love, health* and *life*. Those participants (undergraduates from the Nursing course) presented a positive view of old age.

Finally, most of the 1424 evocations (62.9%) of Psychology, Physical Education and Fashion undergraduates who completed the questionnaire about the “body” were concentrated in

three elements: *health*, *life* and *beauty*. The *health* element was thus perceived as important to think about both old age and the body.

Words	Objects		
	AIDS	Old age	Body
Ugliness	3%	1%	1.30%
Young	7.80%	.80%	4.20%
Health	7.20%	16.50%	29.50%
Life	4.40%	14%	18.30%
Sex	24%	1%	4.60%
Illness	25.40%	8%	2.50%
Love	2.10%	19%	5.30%
Death	24%	5.90%	.60%
Old	.40%	1.20%	.30%
Wisdom	1.20%	24.20%	3.10%
Beauty	0.40%	1.90%	15.10%
Energy	0%	6.10%	15.20%
TOTAL	100% (N=893)	100% (N=995)	100% (N=1424)

N refers to the frequency relative to choices of each word

Table 1: Descriptive results relative to the choice task of 3 words among the 12

Multiple correspondence analysis was employed in the responses to the choice task for the three groups, based on a cases by word response modalities table (yes – Y or no – N for each word). The first three factors explained more than 50% of the total inertia: 25.31% for the first one, 14.95% for the second and 10.36% for the third. Table 2 brings the contribution to the factors of the presence and absence of each of the 12 elements that were available for association with the inducting words.

Modality	Rel.Wt.	D0	Factor 1			Factor 2			Factor 3		
			Coord.	CPF	Cos ²	Coord.	CPF	Cos ²	Coord.	CPF	Cos ²
Y_Ugliness	.50	17.33	-.91	1.6	.05	-.05	.00	.00	1.91	17.5	.21
N_Ugliness	8.59	.06	.05	.1	.05	.00	.00	.00	-.11	1.0	.21
Y_Young	1.14	6.99	-.48	1.1	.03	-.85	5.5	.10	-1.72	32.3	.42
N_Young	7.95	.14	.07	.2	.03	.12	.8	.10	.25	4.6	.42
Y_Health	5.24	.74	.59	7.1	.47	-.26	2.4	.09	.02	.0	.00
N_Health	3.85	1.36	-.79	9.6	.47	.35	3.2	.09	-.03	.0	.00
Y_Life	3.60	1.52	.61	5.3	.25	.09	.2	.01	.30	3.0	.06
N_Life	5.49	.66	-.40	3.5	.25	-.06	.1	.01	-.19	2.0	.06
Y_Sex	2.37	2.84	-1.04	10.1	.38	-.45	3.3	.07	-.34	2.7	.04
N_Sex	6.72	.35	.36	3.5	.38	.16	1.2	.07	.12	.9	.04
Y_Illness	2.75	2.31	-1.18	15.0	.60	.05	.0	.00	.32	2.7	.04
N_Illness	6.34	.43	.51	6.5	.60	-.02	.0	.00	-.14	1.2	.04
Y_Love	2.34	2.88	.49	2.2	.08	1.09	18.6	.41	-.55	6.8	.10
N_Love	6.75	.35	-.17	.8	.08	-.38	6.5	.41	.19	2.4	.10
Y_Death	2.30	2.95	-1.34	16.4	.61	.08	.1	.00	.35	2.7	.04
N_Death	6.79	.34	.46	5.6	.61	-.03	.0	.00	-.12	.9	.04
Y_Wisdom	2.41	2.78	.20	.4	.01	1.29	26.7	.60	-.16	.6	.01
N_Wisdom	6.68	.36	-.07	.1	.01	-.46	9.6	.60	.06	.2	.01
Y_Beauty	1.97	3.62	.56	2.4	.09	-1.05	14.4	.30	-.34	2.1	.03
N_Beauty	7.12	.28	-.15	.7	.09	.29	4.0	.30	.09	.6	.03
Y_Energy	2.33	2.91	.80	5.8	.22	-.40	2.5	.05	.72	11.6	.18
N_Energy	6.77	.34	-.27	2.0	.22	.14	.9	.05	-.25	4.0	.18

Table 2: Correspondence analysis relative to the choice task

Table 3 reports the results relative to the illustrative variables of the analysis, i.e. the “object” variable relative to the inducting terms corresponding to the three participant groups. Test values higher than 2 (in absolute value) indicate the objects that were significantly associated with the factors.

<i>Object</i>	<i>Freq.</i>	<i>Abs. Wt.</i>	Factor 1		Factor 2		Factor 3	
			<i>Test.V.</i>	<i>Coord.</i>	<i>Test.V.</i>	<i>Coord.</i>	<i>Test.V.</i>	<i>Coord.</i>
AIDS	299	299	-26.6	-1.32	-4.9	-.24	-.4	-.02
Old age	344	344	5	.23	23.4	1.05	-2.3	-.1
Body	475	475	19.1	.67	-17.4	-.61	2.5	.09

Table 3: Illustrative variables relative to the correspondence analysis (objects)

The results are more easily interpretable through Figure 1, which illustrates the factorial plan involving the first two factors. The graphical representation accounts for 40.26% of total inertia. Modalities associated with the first factor are underlined, and the ones that contribute significantly for the second one are in italics.

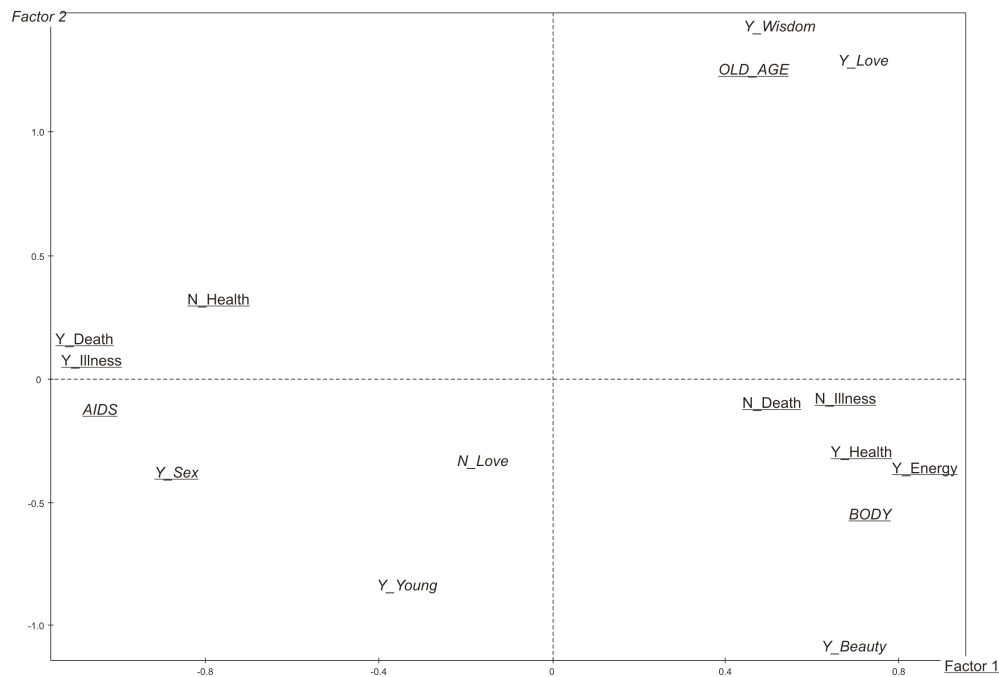


Figure 1. Graphical representation of the results from correspondence analysis (factors 1 and 2).

Factor 1 opposed AIDS (associated with *illness*, *death* and *sex*) to the objects: body and old age (*energy*, *health* and *absence of death*). Factor 2 polarized old age (*wisdom* and *love*) to the objects AIDS and body (*sex*, *young* and *beauty*). The intersection element between body and AIDS is *young*. There does not seem to be a clear intersection between old age and body. That points out that the *young* element is superimposed to two representation objects: body and AIDS. In the study of both social representations, it is necessary to understand the idea of youth as something beautiful and at the same time dangerous (risky). It is interesting to observe that the object body is close to *beauty* and distant from *sex*. The body is then represented as the product of a norm: beauty. Another aspect that is also pertinent is the opposition of *wisdom* and *beauty*, a strongly shared social stereotype.

Figure 2 presents a second factorial plan that involves the first and third factor, accounting for 35.67% of total inertia. Here, factor 3 opposes old age (*love*) to the objects AIDS and body (*ugliness* and *energy*). *Ugliness* is closer to AIDS and *energy* to body. This opposition indicates the idea of losses and gain; in old age, there is a gain in love but body energy is lost.

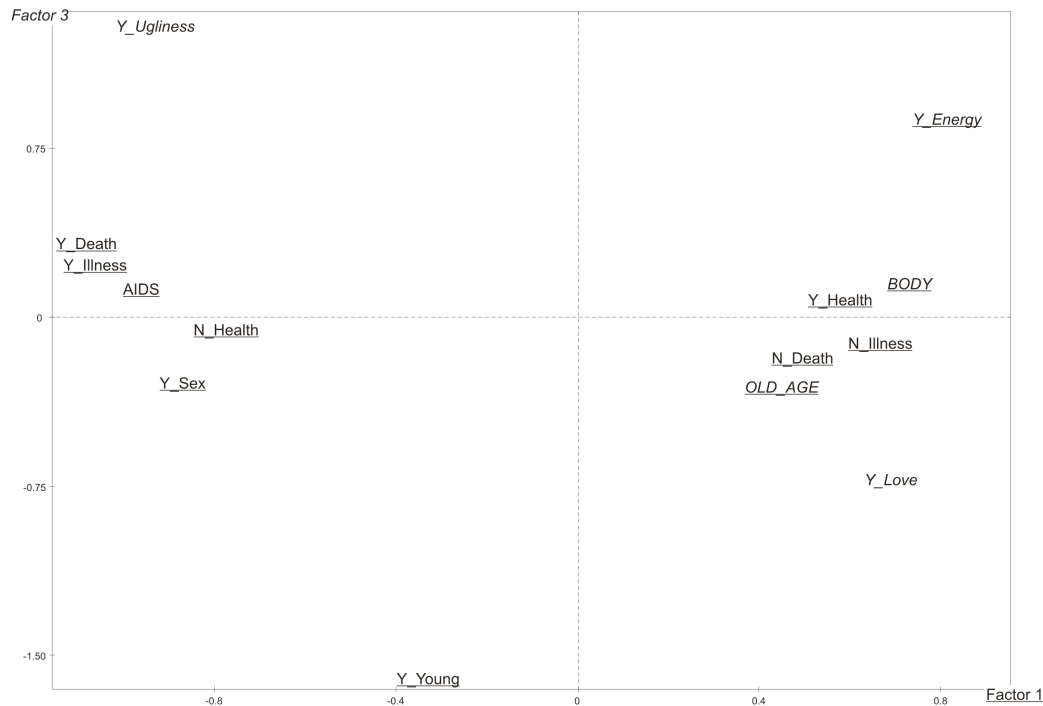


Figure 2. Graphical representation of the results from correspondence analysis (factors 1 and 3).

An analysis of the typical vocabulary of each group was conducted to analyze the open-ended question, which asked for a justification of the choice of the three words from the previous task. Table 4 presents the specific vocabulary relative to each group.

Object	Word	Test-V	Int. freq.	Global freq.
AIDS	AIDS	22.34	160	161
	illness	21.75	233	296
	sex	16.97	147	190
	death	15.82	144	200
	cure	11.33	42	42
	catches	10.75	38	38
	leads	9.28	41	50
	no	9.20	182	474
	condom	8.98	27	27
	transmitted	8.04	22	22
	preservative	8.04	22	22
	to catch	7.47	21	22
	young	7.18	38	70
	times	6.36	33	55
	ends	6.08	21	28
	Old age	old age	19.80	239
wisdom		13.37	192	228
love		9.46	184	262
more		9.14	276	439
elderly		9.09	99	100
experience		8.30	92	96
to pass		7.40	48	53
years		6.92	39	42
age		6.86	49	57
phase		6.74	35	37
life		6.25	390	742
elderly (fem.)		6.23	25	25
to age		5.65	21	21
to get		5.52	30	34
knowledge	5.25	26	29	
Body	body	33.51	681	705
	energy	11.51	171	223
	health	11.48	381	620
	beauty	10.91	126	154
	healthy	10.76	119	144
	well	9.91	132	174
	our	7.91	69	85
	beautiful	7.64	40	42
	reflects	6.02	22	22
	handsome	5.97	27	29
	mind	5.73	23	24
	needs	5.10	30	37
	shape	4.92	37	50
	exercises	4.90	18	19
movement	4.84	15	15	

Table 4: Specific vocabulary for the justification task per group

Concerning AIDS, the typical words that follow the first four (the inducting word and the three with highest frequencies) indicate a logic adopted for the choice task. The relationship between illness and death is done through the understanding that there does not exist a cure for it, as illustrated by the excerpt of a participant's response:

“Illness, because AIDS is an illness without cure, sex because it is transmitted by sexual relations, it is cure-less, leads to death”.

Transmission by sexual means is highly emphasized, and the idea of non-use of condoms is widely diffused amongst the teenagers.

“First because it is an illness, sex because it is transmitted through sex, without condom; and death because it leads to it”.

Moving on to the old age object, the results indicate that when linking old age to wisdom, the idea of wisdom of the participants involves the notion of experience and knowledge accumulated in the course of life of every elderly person. Old age is also understood as a phase of life in which people need love. The following response illustrates this interpretation:

“Life, since old age is related to the last phase of life, without health it is impossible to live in old age, love is essential during old age”.

Finally, concerning body, the typical words that follow the first four (the inducting term and the three with highest frequencies) show that body is thought through a double association: on the one hand beauty (*beautiful, handsome, shape*), on the other one health (*healthy*). Body practices (*exercises, movement*) are also stressed.

“A healthy body, a body with life and a body with beauty is very good”.

DISCUSSION

The results from correspondence analysis have helped the verification of similarities and differences among the elements of the social representations on AIDS (illness), aging and the body (health); in other words, the interaction among the elements of those social representations. It could be observed that the intersection element between the representation on the body and AIDS is *young*, just as *health* and *life* (absence of association of the word *death*) intersect the representations on old age and the body. We could thus infer interpretation grids for the three SR objects, involving specificity and intersections, indicating that dichotomous elements such as *life*

and *death, health and illness, love and sex* are at play, superordinating the representational elements of each specific object.

If we rely on the identification of element intersections as preliminary evidence of the existence of representational systems or networks, in the sense mentioned by Garnier (1999) and Bonardi et al (1994), then our results are insufficient to characterize a single system with the three representations. In any case, two inter-representation interaction zones have been identified, both of which include the social representation on the body. One of them points out to an association of the notions of body and AIDS to the universe of the youth; an ideal body is linked to being young, but one of the risks that it is vulnerable to is AIDS. The second one situates the body as a context that suffers the effect of old age, linked to the general decline in health which marks the proximity of death.

It is still premature to characterize the role performed by those interaction zones in one or more representational systems. For that purpose, we would need to characterize more social representations and try to measure the intensity and types of relationships maintained by them. Nevertheless, the existence of element intersections is an indicator that the representations on AIDS, body and old age are trespassed by common values (Flament, 1994). The results that indicated that some words with opposing meanings are relevant for more than one object are a sign in the direction of the *thêmata* that organize an eventual representational system. Further research will probably have to explore *thêmata* as meaning sources for systems of coordinated representations, in order to capture the social logic that binds them into a higher-order symbolic formation.

However, one notable drawback of this is the stage of research operationalization of *thêmata*. While the idea of long duration symbolic formations as roots for current representations has been valuable and had an important role in opening new theoretical perspectives, its incorporation into empirical research is still difficult and ambiguous, as there is no established approach to measure or characterize *thêmata*. Also, making reference to a *théma* in research commonly involves making reference to constructs or phenomena that are not included into the empirical designs and are not verifiable. In this sense, we feel that there is a need for theory and research aimed at better defining that concept and devising methodological techniques suitable to grasp its essential aspects.

What our results point out is that knowledge about one social representation can be valuable to have a better understanding of another that is connected to it at a global level or at the level of a few elements. A complementary path is then given by the advances achieved by the structural approach on social representations concerning the study of structural regularities connecting various representations. This recent line of research has already identified intersection patterns between elements of social representations and social object labels that suggested that social representations were dependent, reciprocal, or opposite to others (Abric & Vergès, 1996; Fraissé, 2000; Milland, 2001; Guimelli & Rouquette, 2004). The attempt to formalize the relationships involved in representation interactions seems to be a step forward from the identification of representation associations.

Flament and Rouquette (2003) have proposed a taxonomy of inter-representation relations, defining a coordination of two representations as the existence of a horizontal association between two or more social representations, at the level of their elements. It does seem to be the case here in the two organizations that have been identified. What is not known with precision is the structural status (central or peripheral) of the intersection elements; it is necessary to make that distinction to be able to characterize relationships of dependency, reciprocity or antinomy in those representations. One further step in research might be then the refinement of the characterization of the social representations that were investigated, possibly through classical structural diagnosis techniques (Moliner, 1994).

Trying to understand the logic behind a representational system or relationships between two representations according to this perspective has a strong advantage: it is more parsimonious, relying only on formations from the same level of the architecture, and therefore research can be restricted to a single level of analysis. In the case of *thêmata*, the explanation goes up to sociological and anthropological spheres, creating more difficulty in integrating it with research data.

While there is strong evidence and theoretical developments that thinking processes are fundamentally marked by the existence of antinomies (cf. Markova, 2003), and it is also acknowledged that social representations are related to other forms of thinking such as ideologies and scientific thinking, there is room in social representations theory itself to deal with the genesis of representations, through the mechanism of anchoring. If the consequences of the anchoring process that were underlined by Moscovici (1961/1976) and Breakwell (1993) are

taken into account, the study of the directions and meaning of representation relations would possibly point out the existence of social representations that seem to influence the genesis and dynamics of subordinate representations. In that case, we would refer to matrix representations. The verification of this theoretical possibility is a potential topic of future research.

In this light, it is possible to study the genesis and interaction of social representations as being connected to preexisting representations subordinated to the same general mechanisms pointed out by social representations theory without making reference to *thêmata*. The difficult operationalization of *thêmata* might lead to excessive interpretation efforts, and the employment of methodological strategies linked to social representations—already better established and diffused—contributes to add empirical and analytical procedures to research about higher-order social thinking relations.

It is necessary to underline a few limitations of the current study. It is clear that it had an exploratory nature and only tackled a few aspects of the phenomena of interest, still leaving much for future inquiries employing alternative or complementary methodological techniques. At this first step, we have chosen to work with word association data, and while this option allows us to identify a few relationships and patterns in our results, it is also somewhat restrictive. One of its shortcomings is the ambiguousness raised in the interpretation of the meanings assigned by our participants to those terms; the justification question provided some hints in that direction, but more in-depth qualitative procedures such as small group sessions or even more developed discourse questions in a questionnaire would probably unveil the underlying logics more clearly.

It must also be pointed out that response patterns might have been influenced to some extent by the access of subgroups of participants to university curricula or school courses that might favor specific views of some of the topics in the study – for example, health and illness. Due to the nature of the study, which combined data from different projects that shared a few questionnaire items, the influence of subgroups or specific information is a possibility that must be taken into account by future research efforts. Moreover, even the participation in the project by completing the questionnaire about a specific topic might influence the response profiles, differently from what would happen with a single controlled data collection setting. In addition, the choice for employing a small set of words might have exaggerated the degree of overlap in the social representations.

Finally, if one examines the results of the study, he or she might be tempted to think that the interaction zones involved in the investigated social representations are static or stable. That is perhaps an artifact derived from the employment of the methodological strategies of the study, which provides a “picture” or “map” of a specific research situation in a specific time and space frame: characteristics of the questionnaire, state of the participants, culture, psychosocial environment, and so on. The characterization of the same relationships in other cultures and periods are likely to reflect different configurations, as contents of social representations and structural associations reflect intergroup and communication contexts. Even in the specific case of our results, some components of the “picture” might be more stable and resistant to change than others – and our study has not allowed us to characterize their structural status – but they are certainly associated with dynamic actualization and functioning processes that will only be clarified with the help of theoretical developments related to social interaction and the actualization of representations in psychosocial contexts.

In conclusion, the main contributions of this study involved three levels: theoretical, methodological and applied. Theoretically, we have tried to link the social representations phenomenon to social thinking networks, pointing out to the notion of representational systems underlying the initial idea of intersection zones of social representations on different objects. At a methodological level, the research proposed to characterize the relationships among different social representations through known elements that are common to the three representations. Finally, at the applied level, the identified intersections of representation elements suggest that the understanding of the logic of thinking associated with AIDS and the HIV epidemic could benefit from the characterization of the interactions among social representations that were not directly investigated, such as the representations on life, health and sex.

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REFERENCES

- Abric, J.-C. & Vergès, P. (1996). *L'étude des relations entre différents objets de représentation : noyau central, emboîtement et réciprocité*. Paper presented at the Third International Conference on Social Representations. Aix-en-Provence.
- Bonardi, C.; De Piccoli, N.; Larrue, J. & Soubiale, N. Dipendenza e interdipendenza delle rappresentazioni sociali: la rappresentazione sociale dell'Europa e quella della politica. *Giornale Italiano di Psicologia*, 21(3), 399-419.
- Breakwell, G. M. (1993). Social representations and social identity. *Papers on Social Representations*, 2, 1-20.
- Camargo, B.V. (2000). Sexualidade e representações sociais da AIDS. *Revista de Ciências Humanas – Especial Temática*, 97-110.
- Camargo, B.V. & Bousfield, A.B.S. (2009). Social representations, risk behaviors and AIDS. *Spanish Journal of Psychology*, 12(2), 565-575.
- Camargo, B.V.; Wachelke, J.F.R. & Aguiar, A. (2007). Um panorama do desenvolvimento metodológico das pesquisas sobre representações sociais através de grupos de trabalho das jornadas internacionais. In: A.S.P. Moreira; B.V. Camargo (Eds.), *Contribuições para a teoria e o método de estudo das representações sociais* (pp. 181-202). João Pessoa: UFPB.
- Campos, P.H.F. & Lagares, R. (2002). The traffic and driving social representations. In *Acts of the 5th International Conference on Social Representations*, Montreal, 454-472.
- Di Giacomo, J.-P. (1980). Intergroup alliances and rejections within a protest movement: analysis of the social representations. *European Journal of Social Psychology*, 10(4), 329-344.
- Flament, C. (1994). Aspects périphériques des représentations sociales. In C. Guimelli (Ed.), *Structures et transformations des représentations sociales* (pp. 85 – 118). Lausanne: Delachaux et Niestlé.
- Flament, C. & Rouquette, M.-L. (2003). *Anatomie des idées ordinaires*. Paris: Armand Colin.
- Fraïssé, C. (2000). Influence de la fréquence de la mise en oeuvre de pratiques sur une structuration inter-représentation. *Cahiers Internationaux de Psychologie Sociale*, 45, 85-97.

- Garnier, C. (1999). La genèse des représentations sociales dans une perspective développementale. In M.-L. Rouquette & C. Garnier (Eds.). *La genèse des représentations sociales* (pp. 87-113). Montreal: Nouvelles.
- Goetz, E.R.; Camargo, B.V.; Bertoldo, R.B. & Justo, A.M. (2008). Representação social do corpo na mídia impressa. *Psicologia e Sociedade*, 20(2), 226-236.
- Guimelli, C., & Rouquette, M.L. (2004). Étude de la relation d'antonymie entre deux objets de représentation sociale: la sécurité vs. l'insécurité des biens et des personnes. *Psychologie & Société*, 4.1(7), 71-87.
- Joffe, H. (1996). AIDS research and prevention: a social representational approach. *British Journal of Medical Psychology*, 69(3), 169-190.
- Larrue, J.; Bonardi, C. & Roussiau, N. (2000). Étude des liens entre plusieurs objets de représentations sociales. *Anuario de Psicología*, 31(3), 19-37.
- Magnabosco-Martins, C.R.; Camargo, B.V. & Biasus, F. (2009). Representações sociais do idoso e da velhice de diferentes faixas etárias. *Universitas Psychologica*, 8(3), 831-847.
- Markova, I. (2003). *Dialogicality and social representations: the dynamics of mind*. Cambridge: Cambridge University Press.
- Milland, L. (2001). *De la dynamique des rapports entre représentations sociales du travail et du chômage*. Doctoral Thesis in Psychology. Université de Provence, Aix-en-Provence.
- Moscovici, S. (1961/1976). *La psychanalyse, son image et son public*. Paris: PUF.
- Moscovici, S. & Vignaux, G. (1994). Le concept de Thémata. In C. Guimelli (Ed.), *Structures et transformations des représentations sociales* (pp. 25-72). Lausanne: Delachaux et Niestlé.
- Rateau, P. (2000). Idéologie, représentation sociale et attitude: étude expérimentale de leur hiérarchie. *Revue Internationale de Psychologie Sociale*, 13(1), 29-57.
- Rouquette, M.-L. (1994). *Sur la connaissance des masses: essai de psychologie politique*. Paris: PUF.
- Rouquette, M.-L. (1996). *La communication sociale*. Paris : Dunod.
- Secchi, K. ; Camargo, B.V. & Bertoldo, R.B. (2009). Percepção da imagem e representações sociais do corpo. *Psicologia Teoria e Pesquisa*, 25(2), 229-236.

Tura, L.F.R., (1998). AIDS e estudantes: a estrutura das representações sociais. Em M. Madeira; D. Jodelet, (Orgs.), *AIDS e Representações Sociais*. (pp. 121-154). Natal: UFRN.

Valence, A. & Roussiau, N. (2005). Étude de la transformation de représentations sociales en réseau (idéologie, droits de l'homme et institution). *Cahiers de Psychologie Politique*, 7. Retrieved from: <http://lodel.irevues.inist.fr/cahierspsychologiepolitique/index.php?id=1124> <

Veloz, M. C. T.; Nascimento-Schulze, C. M. & Camargo, B. V. (1999). Representações sociais do envelhecimento. *Psicologia Reflexão e Crítica*, 12 (2), 479-501.

Wagner, W. (1994). Fields of research and socio-genesis of social representations: a discussion of criteria and diagnostics. *Social Science Information*, 33(2), 199-228.

Wolter R.P.; Gurrieri, C. & Sorribas, E. (2009). Empirical illustration of the social thinking hierarchy: a “domino effect”? *Interamerican Journal of Psychology*, 43(1), 1-11.

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