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Places from which We Speak: The Concepts of Consensual and Reified Universes and the Interpretation of the Outcomes Obtained with ALCESTE and IRAMUTEQ

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In the literature on social representations, the concepts of consensual and reified universes have been a source of controversy. In this theoretical-methodological paper, I review these concepts and define them as ways of producing and understanding reality that differ according to the knowledge's source of validation (authorities or lay thinking). The Top-Down Hierarchical Classification (TDHC) provided by the software ALCESTE and IRAMUTEQ has been widely used in studies on social representations. The TDHC allows the investigation of the topologies of texts generating corresponding graphics in the form of dendrograms. I propose an interpretation scheme of the outcomes obtained with ALCESTE and IRAMUTEQ as follows. When an individual or group produces the text, the enunciator alternately adopts socio-subjective positions in the consensual and reified universes. The universes are two radically different socio-subjective ways of dealing with knowledge. Therefore, they activate different vocabulary. The first division of the text performed by the TDHC splits the text into two subsets characterised by the greater possible difference in vocabulary. Hence, it is sensitive for identifying the two socio-subjective positions in the consensual and reified universes. I describe some characteristics of the TDHC and evaluate the correspondence of the mentioned interpretation scheme with empirical studies. In conclusion, I make practical recommendations for the interpretation of outcomes obtained with the software ALCESTE and IRAMUTEQ.

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> *"Man, at least Western man, has the curious privilege of being citizen in two worlds of thinking. Ordinary people enjoy in constant alternation two kinds of intellectual experience: the professional and the casual one, the disciplined and the spontaneous one, each of which has its own logic, limits and attributes"*
> (Moscovici & Hewstone, 1983, p. 101, emphasis added).

In this theoretical-methodological paper, I propose that the concepts of consensual and reified universes advanced by the theory of social representations may be employed to interpret the outcomes obtained with Top-Down Hierarchical Classification (TDHC). The TDHC is one of the textual analyses provided by the software ALCESTE and IRAMUTEQ. This proposition is particularly suitable for psychosocial approaches because it can help researchers identify socio-subjective positions from which individuals and groups speak rather than just themes within a discourse.

I suggest that under certain conditions, the first division that the TDHC finds in the text generates two subsets of classes that reveal the enunciator's socio-subjective positions[1] in the consensual universe (expressed by one of the subsets) and in the reified universe (expressed by the other subset). These different positions are at least partially unconscious to the individual or group who produces the text. This paper aims to establish a connection between a specific algorithm for data analysis and a specific theory in social psychology. It is important to bear in mind that other connections are possible involving other perspectives in the social sciences.

At first, I review the concepts of consensual and reified universes. Then, I describe some characteristics of the software ALCESTE, IRAMUTEQ and the TDHC. I consider some empirical studies that illustrate the proposed interpretation scheme. Finally, I make practical recommendations for the interpretation of the outcomes obtained with the software ALCESTE and IRAMUTEQ.

[1] I do not claim that the TDHC always identifies the mentioned socio-subjective positions. This identification depends on certain characteristics of the research design as I will further discuss.

THE CONCEPTS OF CONSENSUAL AND REIFIED UNIVERSES

The concepts of consensual and reified universes refer to the theory of social representations (Moscovici, 1961, 2000). In everyday life, individuals and groups communicate about relevant topics of the social world and collectively construct social representations, i.e., theories of common sense and the symbolic environment in which they live. They guide their practices based on these interwoven sets of beliefs, emotions, and images (Howarth, 2006; Jodelet, 1989; Moscovici, 1961). Social representations construct social reality through inter-subjective agreements and serve to justify social exclusion, social identity, and power relations (Howarth, 2006).

Moscovici's (1961) pioneering work on the social representations of psychoanalysis focused on the active transformation of a scholarly theory (a scientific theory, one might say, if one considers psychoanalysis to be a science) into common-sense theories. Perhaps because of this early distinction, studies on social representations frequently state that the reified universe corresponds to science whereas the consensual universe corresponds to common sense. This paper challenges these definitions, which seem simplistic or incomplete. The concepts of consensual and reified universes have been sources of controversies and criticism in the literature on social representations, and a number of works discussed their possibilities and limits (Batel & Castro, 2009; Callaghan & Augoustinos, 2013; Foster, 2003; Jesuino, 2008; Purkhardt, 1991, 1993). In this conceptual review, I will specifically engage with the ideas proposed by Purkhardt (1991, 1993).

Purkhardt (1991, 1993) repeatedly refers to the "reified universe of science" and seems to consider that the concept of reified universe corresponds to scientific knowledge and practice. For the author, the concept of reified universe results from a mistake committed by Moscovici: not having completely abandoned a positivist and empiricist epistemological paradigm. Moscovici would have defined the reified universe as a reality independent from history and the social context in which it emerges. Therefore, science would not be a socially constructed type of knowledge, but the definitive way of knowing *the truth* about physical and social phenomena. Purkhardt (1991, 1993) objects to the idea, which she also attributes to Moscovici, that the layperson would always interpret the world through the consensual universe, whereas the scientist would always see it through the reified universe. She states that it is not possible to establish a clear distinction between the two universes and proposes the complete abandon of the concept of reified universe.

In this paper, I offer a different interpretation of Moscovici's concepts and statements. At first, let us consider the following extract:

> I have always been struck by the inventive and creative character of social thought in every realm. [...] our ability to create so many different kinds of representations from the same information on several levels – science, religion, art, common sense – increases the scope of possible combinations, which is both the instrument and the result of this unceasing creativity of social life (Moscovici, 1987, p. 516)

In this extract, Moscovici defines scientific knowledge as representations. It is not 'the truth' revealed by a flawless method, but a product of social creativity. In the same work, he objects to the idea that "science as such is rational and that any intervention of social factors bears the seal of the non-rational" (Moscovici, 1987, p. 524). For Moscovici (1987), social psychology is an "anthropology of modern culture" (p. 514). As such, it must consider scientific knowledge and practice as distinctive cultural features.

Later, Moscovici (1993) wrote, "I think it fitting to postulate first that theories, like beliefs of every kind, are representational. In other words, scientific theories are best defined as representations, and not as systems of axioms and logical sentences" (p. 350), and he added, "inasmuch as they are public, produced and shared in a community, it is more exact to consider them as social representations" (p. 365). Moscovici (1993) theorises about the contextual and socio-cultural production of scientific knowledge. He verifies that there are different ways of expressing scientific knowledge and other types of representations. In order to understand these ways, it is important to consider the concepts of consensual and reified universes. Referring to the passage from collective representations to social representations, the author states:

> For collective, because inculcated by an authority (communality, religious institution, etc.) and almost invariable representations we have substituted social representations: such as were created and communicated by the people, the makers of theories about AIDS, black holes, Marxism, etc.; side by side with those of scientists, doctors, politicians or churchmen, and adjusted to the circumstances (Moscovici, 1988, p. 220)

On the one hand, in consensual universes, laypeople freely express their common-sense theories. They fabricate these theories based on heterogeneous types of reasoning and a kind of trust in their peers, i.e., the acceptance of a common reality. They inhabit social and group

movements and environments in which horizontality and free expression are possible. On the other hand, in reified universes, experts communicate their formalised theories. In this extract, Moscovici suggests that scientists are not the only actors responsible for specialised knowledge and scholarly theories, but also "doctors, politicians or churchmen" (Moscovici, 1988, p. 220).

Bangerter (1995) also mentions different domains of the reified universes, all of which are characterised by formalisation: "Religious orthodoxy, political ideology, 'hard' scientific theory, all of these bodies of knowledge impose an unequivocal understanding of the concepts they contain on their users" (p. 4). In these domains, authorities speak in the name of knowledge to which they submit. Specialised knowledge grants them legitimacy in social and group environments characterised by the asymmetry between experts and laypeople (Moscovici, 2000). The authorities (allegedly) do not speak in the name of their personal opinions but in the name of knowledge *perceived* to be true independently of any personal experiences ("the speaker […] is only the vessel" – Bangerter, 1995, p. 4).

Some examples illustrate these different group and social environments. Moscovici (1987) refers to "the market place, coffee houses, meetings" (p. 516) as examples of the first type of social setting, in which each participant is free to formulate and express their theories about family, politics, religion, health, football. For each one of these subjects, there are examples of social settings in which only an expert can speak or, at least, in which the word of an expert is worth more. It is the case of a lecture about politics or football, a psychological family counselling session, a religious sermon, a medical consultation. In the former, the social settings are (not purely, but mainly) expressions of the consensual universe whereas in the latter they are (not purely, but mainly) expressions of the reified universe.

Therefore, the concepts of consensual and reified universes *simultaneously* refer to *subjective and objective positions*. Regarding the subjective positions, in the consensual universes, individuals feel authorised to speak about and rely upon their beliefs, opinions, and experiences whereas in the reified universes they speak in the name of and submitting to scholarly or specialised knowledge. Concerning the objective positions, objects, spaces and individuals also express these two types of relation to knowledge. In order to verify the differences, it suffices to think about a court of law, a cathedral, or a medical consultation room, with their clearly defined spaces for authorities, and compare these spaces to a cafeteria or a public square, for example. Showing that objective and subjective realms are intertwined is a feature of the *genuinely psychosocial* approach adopted by Moscovici. In his writings, it is clear

that social representations, for example, are phenomena that pertain simultaneously to 'the inside' and to 'the outside' (Moscovici, 2000).

Consequently, the consensual and reified universes are not *the* knowledge (common sense, science), but in fact *two specific and radically different ways of relating to knowledge. They are objective-subjective spaces in which we (individuals in modernity) inhabit and from which we 'speak' ('express ourselves' in a broad sense). They may also be described as two ways of constructing and understanding reality that differ according to the knowledge's source of validation, i.e., authorities or lay thinking. They organise the subjective positions of individuals and groups and the objective positions of contexts, institutions, and societies.*

These definitions are consonant with the distinction between anonymous facts (*faits anonymes*) and nominated facts (*faits nominés*) or phenomena (Kalampalikis, 2003; Moscovici, 1991). Anonymous and nominated facts are expressions of the consensual and reified universes, respectively. The anonymous facts happen in the unnoticed encounters and conversations of people's daily lives. The nominated facts are "étayés par une théorie, conçue par des spécialistes [...]. Ainsi la bureaucratie, la religion, la science, etc. [underpinned by a theory conceived by experts […]. Thereby, bureaucracy, religion, science, etc.]" (Moscovici, 1991, p. 72).

Purkhardt (1991, 1993) states that Moscovici has postulated two completely different universes that are always mutually exclusive. I agree with the first part of this statement but not with the second. The categories of relation to knowledge corresponding to the consensual and reified universes can be completely distinguished in the theoretical domain, and I agree with Moscovici (1987) that they are important and heuristic concepts. However, they are not always mutually exclusive. In subjective-objective realities (as opposed to the "pure theoretical domain"), whichever they are, it is impossible to find the consensual or reified universes in a pure state. As Foster (2003) remarks, cognitive polyphasia, that is, the use of heterogeneous rationalities and sources of knowledge, is ubiquitous in social life.

Moscovici (1988, p. 238) refers to the combination of the two universes regarding common sense and its function of making familiar the unfamiliar, "We must first recognize that there are two universes, two categories, the consensual and the reified. These categories shape our thoughts and views which are then activated so as to familiarize us with the strange" (Moscovici, 1988, p. 238). He also acknowledges the presence of the consensual universe in specialised knowledge: "Nobody's mind is free from the effects of the prior conditioning which is imposed by his [sic] representations, language and culture" (Moscovici, 2000, p. 23).

Moreover, it is evident that scientists do not always inhabit the reified universes: "professional scientists are nearly always amateur scientists outside their specialized fields" (Moscovici & Hewstone, 1983, p. 107). Bangerter (1995) adds, "One could even say that a social psychologist is a layman [sic] in relation to another social psychologist, given a particular problem" (p. 12).

Bangerter (1995) describes functional and structural similarities between the worlds of science and common sense. Based on the author's considerations, one can challenge the complete assimilation of science and common sense respectively to the reified and consensual universes. Science is a specific type of knowledge in a wide and heterogeneous network of knowledge production, constantly influenced by the other types (Bangerter, 1995). This is consistent with the idea that 'in the real world' reified and consensual universes are always intertwined. Therefore, regarding real-life objective-subjective situations, it is necessary to consider *degrees*. For each analysis, an event, an institution, a society, an individual, a group, an interaction, a discourse will present itself or themselves *predominantly but not completely* as an expression of one of the two universes.

Social representations are the reality in which we live. They provide the symbolic environment for our behaviours and construct the so-called *stimuli* to which we react (Moscovici, 2000). Hence, science is constructed in a world of social representations. As any other empirical phenomenon, science is not purely an expression of one of the two universes. The absolute distinction between them is valid only in a strict theoretical domain. I agree with Bangerter (1995) that a social psychology of science can illuminate the many instances in which scientific practices are expressions of the consensual (instead of reified) universe.

The concepts of reified and consensual universes proposed here are consonant with the analysis of the debate about climate change performed by Callaghan and Augoustinos (2013). They show that two competing groups, mainstream climate scientists *versus* climate sceptics, instrumentalised the two universes to create rhetorical devices and defend their points of view. Callaghan and Augoustinos (2013) show that the competing perspectives stressed not only different information *per se*, but mainly different sources of knowledge validation (recognised authorities *versus* lay perceptions and experiences).

Defining the reified universe as a socio-subjective position not solely based on science brings new perspectives on the issues highlighted by Foster (2003). The author focuses on the *representational projects* that different groups mobilise to defend their interests, especially the cases in which organised 'popular groups' succeed in influencing science. As Batel and Castro (2009) show, popular groups may construct their authoritative discourse and may position

themselves in reified universes with notions based, for example, on the legal system. When groups compete for establishing dominant representations, as in any real-life situation, the two universes are always inherently intertwined.

Moscovici (1988) posits the inseparability of the consensual and reified universes in the construction of our symbolic environment, "Both universes act simultaneously to shape our reality. When we speak of the alienation of man, of bureaucratic abuses, we have in mind a reified universe confronting a human being living in the consensual universe" (p. 233). In this extract, the "bureaucratic abuses" exemplify the reified universe. Moscovici adopts a critical tone towards the reified universe and an understanding that it involves power relations. He also expresses this idea when he refers to ideology as an agent of certain transfers from one universe to the other, "we see more clearly the true nature of ideologies, which is to facilitate the transition from the one world to the other, that is, to cast consensual into reified categories and to subordinate the former to the latter" (Moscovici, 2000, p. 36). Batel and Castro (2009) further develop the critical analysis of reified and consensual universes. They conceptualise *reification* and *consensualization* as specific communicative orientations and discursive strategies. In the case of reification, competing groups claim to speak in the name of *the truth* aiming to establish or maintain positions of power (Batel & Castro, 2009).

Moscovici's psychosocial outlook is characteristically anthropological and conceives the knowledge created in the reified universes as constructions of specific cultures, that is, cultural processes that pertain to a socio-historical context. The reified universes are not ahistorical or asocial realities. Moscovici does not identify the knowledge produced in the reified universes with 'the truth'. But this does not prevent him from verifying that, in modern societies, individuals, groups and institutions make that identification and attribute superiority to specialised knowledge. In other words, in modernity, the reified universes do not tell *the truth*, but they are often perceived and felt as doing so.

The concepts of consensual and reified universes are important components of Moscovici's theoretical project, that is, an "anthropology of modern culture" (Moscovici, 1987, p. 514). He states that "Such categories as consensual and reified universes are unique to our culture" (Moscovici, 2000, p. 34). The constitution of modernity involved the displacement of the traditional categories of sacred and profane. Modern societies, groups and individuals construct representations and practices in an 'anthropologised' or anthropocentric general framework, in which the main opposition does not take place between divinity and humans, but between two different types of *human* expression, that is, the two universes.

In modernity, the main question is not 'who is(are) the deity(ies) and who represents divine power?' (although this question remains a feature of our crowd psychology, for example: Moscovici, 1985), but in fact 'who has received society's authorisation to speak?' Scholars, politicians, religious representatives, experts, scientists, technicians, jurists are actors, or functions, who manifest themselves in reified universes. Therefore, it is important to analyse how authoritative knowledge relates to the other type of knowledge based on lay thinking. The "professional" (Moscovici & Hewstone, 1983, p. 101) and "disciplined" (Moscovici & Hewstone, 1983, p. 101) intellectual experience meets and sometimes confronts the "casual [and] spontaneous" one (Moscovici & Hewstone, 1983, p. 101), generating different mixtures and contradictions.

Giddens (1990) shows that modernity predominantly substituted knowledge about natural causes for religious beliefs. Modern explanations of physical and social reality focus on the central role of human material and moral necessities, chance, and natural causes. Human activity is the main force structuring and transforming the perceived and lived world. In "conditions of modernity" (Giddens, 1990, p. 6), individuals establish a continued trust in omnipresent expert systems. "By expert systems I mean systems of technical accomplishment or professional expertise that organise large areas of the material and social environments in which we live today" (Giddens, 1990, p. 27). Modern societies are characterised by a plurality of pretensions to authority and the absence of an ultimate source of authority (Giddens, 1990). The multiple domains of authority constitute reified universes in constant interaction with the consensual universes, involving mutual influence.

Moscovici (1988, 2000) further characterises the consensual and reified universes as follows. In the consensual universes, free communication is a fundamental experience. It allows the exchange of ideas about the relevant issues of daily life and the creation of 'shared decisions' about 'what makes sense' in such a way that tradition is reinforced. Individuals do not search for coherence and logic, but *meaning*. They combine knowledge from different sources, formal concepts, images, vague notions, and traditional beliefs. As the term indicates, these universes rely on consensus. Participants depend upon (and develop) a certain kind of trust that they share a common view and tradition. In the consensual universes, society is perceived with human standards, it possesses finality and meaning. It is the realm of 'us', where we recognise ourselves. Individuals feel authorised to speak in the name of their personal views, experiences, and common-sense theories (Moscovici, 1988, 2000). Therefore, differently from what happens in the reified universes, "no one member is assumed to possess an exclusive

competence, but each can acquire any competence which may be required by the circumstances" (Moscovici, 2000, p. 34).

In the reified universes, knowledge is structured, well-defined. Its objective is consistency and coherence. Objects are reified, 'rigid' in opposition to the 'malleable' aspect that they have in the consensual universes. Reified universes presuppose a hierarchy and the expert's authoritative voice. Communication follows specific rules. Knowledge acquires the status of truths or norms perceived to have certain 'legality'. Procedures and terminologies are also specific. Trust relies on those procedures and terminologies (not on traditions). Society is perceived as a set of well-delimited objects. It is the realm of 'them', where we face impersonal truths and norms. Individuals and groups present themselves in unequal terms, according to different roles and classes. Each context relies on appropriate behaviours, information, and vocabulary (Moscovici, 1988, 2000).

Moscovici (2000, p. 35) states that "It is readily apparent that the sciences are the means by which we understand the reified universe, while social representations deal with the consensual" (Moscovici, 2000, p. 35). This is different from saying that the universes correspond to science and common sense (I hope to have sufficiently insisted on this idea). An aspect of the definitions that I gave above is that the consensual and reified universes are places from which we speak. We express ourselves 'inhabiting' (it is more than a cognitive experience as it also involves emotions, social and material settings) our personal views and lay experiences or 'inhabiting' specialised knowledge. As concepts, the universes are radically distinguishable. However, when producing social reality, social thinking, social practices, they are always combined and simultaneous. Thus, it is important to consider degrees. In conditions of modernity, social and psychosocial settings and phenomena are predominantly, but not completely, expressions of one of the universes or the other.

I agree with Purkhardt's (1991, 1993) conclusions about the epistemology of social psychology. Social psychology should adopt a "social realist perspective in the tradition of G.H. Mead" (Purkhardt, 1993, p. 169) to avoid the fallacies of two extreme positions: positive empiricism (underlying the positivist view of science) and radical constructionism (underlying numerous postmodern approaches). The disagreement with Purkhardt (1991, 1993) expressed in this paper stems from her interpretations of Moscovici's works. I consider Moscovici's theorisation to be fully compatible with the social realist perspective.

"The contrast between the two universes has a psychological impact" (Moscovici, 2000, p. 35), declares Moscovici. I would like to turn now to this psychological impact. I propose that

the concepts of consensual and reified universes provide a framework for the interpretation of the outcomes of a specific method for data analysis, the TDHC. When individuals or groups speak or somehow produce texts, they alternately adopt positions in the consensual and reified universes. These two ways of dealing with knowledge participate in the production of their discourse. Two socio-subjective positions are then combined. I propose that the TDHC provides a tool to dichotomise and analyse them.

ALCESTE, IRAMUTEQ, AND THE TDHC

According to Reinert (2000), the activity of enunciation interweaves the domains of the symbolic, real, and imaginary. Enunciation involves 'awareness' in the sense that the link between each object and language is perceived to be evident. However, language precedes (and participates in the construction of) the enunciator. Hence, much of what happens in enunciation is unconscious (Reinert, 2000). The enunciator unconsciously inhabits lexical 'worlds' that are typical of collective representations, i.e., stable ways in which individuals and groups construct their symbolic reality (Reinert, 1990).

According to Reinert (1990, 2000), it is possible to identify the socio-subjective places from which enunciation occurs. For achieving such a goal, one may interpret the distribution of vocabulary in a text and find out how the various socio-subjective places differ (with the presence of different vocabulary) and resemble each other (with the co-occurrence of words). This is the basis of the ALCESTE method.

ALCESTE (*Analyse Lexicale par Contexte d'un Ensemble de Segments de Texte*) and IRAMUTEQ (*Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*) are pieces of software equipped with textual analysis methods. They allow researchers to combine qualitative and quantitative approaches. ALCESTE (Reinert, 1990) innovated a way of delimiting the unity of analysis, defined as the Elementary Context Unities (ECU), that is, segments of text, instead of words. This ensures that the unity of analysis is not taken in relation to a general meaning (such as the meanings of isolated words in dictionaries) but rather in relation to an individual or collective enunciator and their *context*. As Reinert (1990) states, "En définitive, dans la sémantique de l'énoncé, et contrairement à la sémantique du mot, il y a la marque d'un sujet en tant qu'individu psychique [Ultimately, in the semantics of the statement, and unlike the semantics of the word, there is the mark of a subject as a psychological individual]" (p. 28).

ALCESTE and IRAMUTEQ provide the TDHC for the analysis of the segments of text. The TDHC generates classes of segments of text with a common vocabulary, and whose shared vocabulary is significantly different from those of other classes. The software IRAMUTEQ (Ratinaud, 2009) is free and open source (Camargo & Justo, 2013).

The TDHC may be applied to texts originated from different sources such as documents, books, letters, field notes, focal groups, interviews, answers to questionnaires, and so on. It operates a lemmatisation, reducing words to 'root forms'. Based on an internal dictionary, it identifies 'function words' (*mots outils*), such as prepositions and pronouns, and 'content words' (*mots pleins*), that is, nouns, verbs, adjectives, and adverbs. It assumes that only the content words allow the identification of the socio-subjective places from which one speaks, and considers only this type of word in the main classification procedure (Reinert, 1990).

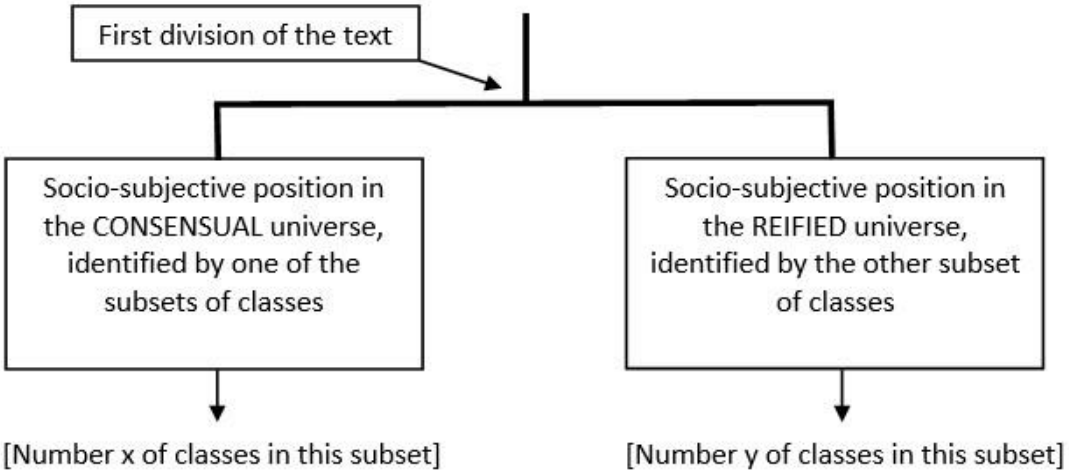
The TDHC divides the text into segments following specific criteria (Reinert, 1990). Then it creates a matrix inserting segments of text into rows and the root forms of content words into columns. In this matrix, the presence and absence of a word in a segment of text are signalled by 1 and 0, respectively. Chi-square values are attributed to the matrix margins. The TDHC uses this matrix to divide the initial set of segments of text (all segments) into two subsets in such a way as to maximise the marginal chi-square values. That is, the TDHC applies the division that maximises the difference in vocabulary between the created subsets and the co-occurrence of vocabulary inside each subset (Lapalut, 1995; Reinert, 1990).

In other words, the TDHC divides the total set of segments of text into two subsets: A and B. The subset A includes segments of text whose vocabulary co-occurs and is to the greatest extent different from the vocabulary of the subset B. Then, it applies the same algorithm to the created subsets. "La procédure s'arrête lorsque le nombre d'itérations demandé est épuisé [The procedure stops when the necessary number of iterations is exhausted]" (Reinert, 1990, p. 37) and a stable set of classes is created, always following the criterion of maximising the marginal chi-square values. Lapalut (1995) and Kronberger and Wagner (2000) provide detailed descriptions of the algorithm. Regarding the first division of the segments of text, Kronberger and Wagner (2000, p. 308) assert that:

> The total set of contextual units in the initial indicator matrix (contextual units by words) constitutes the first class. The aim of the next step is to find a partition of that class into two that maximally separates the resulting classes such that the two classes contain different vocabulary and, in the ideal case, do not contain any overlapping words (p. 308)

This first division of the text is of central importance for the main methodological proposition of this paper, which may be described as follows: When the individual or collective enunciator produces the text, which afterwards may be analysed with the TDHC, the enunciator alternately adopts socio-subjective positions in the consensual and reified universes. These positions are at least partially unconscious. However, they leave a trail that is precisely the vocabulary used for enunciation. Two radically different socio-subjective ways of dealing with knowledge, the consensual and reified universes, activate radically different vocabulary. Hence, the first division performed by the TDHC is sensitive for identifying the two socio-subjective positions. Figure 1 illustrates this interpretation scheme with reference to the upper part of the dendrograms, the graphics that ALCESTE and IRAMUTEQ generate to display the outcomes of the TDHC.

Figure 1. Proposed interpretation scheme of the dendrograms generated with the Top-Down Hierarchical Classification.



The distinction between the consensual and reified universes is ‘strong’ in theoretical terms. In “conditions of modernity” (Giddens, 1990, p. 6), the two universes correspond to the most important difference in the subjective positioning of individuals and groups (Moscovici, 2000). Following the propositions of Reinert (1990, 2000), one may consider that the greater possible difference in subjective positioning (the most radical and pervasive) should generate

the greater possible difference in vocabulary. This is the reason why the two universes should emerge from the *first* division operated by the TDHC.

The proposed interpretation scheme considers a method for data analysis in the framework of a specific theory. This theoretical-technical connection is consistent with the initial aim of the TDHC. "The purpose of Reinert was to use semantics contexts to help psychologists in their analysis and research of models" (Lapalut, 1995, p. 2). Reinert (1990) proposes that the classes generated with the TDHC identify the topology of the analysed text, the 'places' from which one speaks. "The assumption of ALCESTE is that different points of reference produce different ways of talking" (Kronberger & Wagner, 2000, p. 307). The classes are expressions of specific backgrounds of perceptions, cognitions, emotions, and experiences from which objects and their meanings emerge, as well as the activity of enunciation with corresponding specific vocabulary. Reinert (1990) calls the classes "worlds" (p. 32) because this metaphor is suitable to underline their unconscious character. It is possible to say the same about the 'universes'.

Lima (2008) also refers to socio-subjective 'places' characterised by cognitive, affective, and behavioural patterns. These 'places' include specific repertoires of collectively constructed representations, practices, and discourses in which individuals 'inhabit' when they speak – that is, which they remember, in which they imagine themselves, to which they answer, which they rely on, and so forth. The individual speaks from different 'places' and the TDHC follows the trails left by the activity of enunciation, that is, the specific vocabulary (Lima, 2008). This is consistent with a characteristic perspective in social psychology, through which researchers analyse the often unconscious presence of society and culture *in* individuals and groups.

CONSONANCE WITH EMPIRICAL STUDIES

The proposed interpretation scheme is consonant with empirical studies that have employed the TDHC.

Souza (2012) investigated social representations of alcoholism constructed by Primary Health Care professionals. He interviewed 40 professionals who provided care to underprivileged populations living in slums, and applied the TDHC to three different *corpora* generated by the interviews, regarding: (a) the presence of the alcoholic patient in the health centres; (b) the causes of alcoholism; and (c) the treatment of alcoholism. The TDHC helped to demonstrate the presence of the consensual and reified universes in the construction of the

investigated social representations. Even though the professionals were supposed to rely solely upon technical-scientific knowledge to describe alcoholism, they also relied upon their lay experiences and classist stereotypes (personal opinions, ingroup and outgroup stereotypes).

According to Souza (2012), the TDHC differentiated the reified and consensual universes as follows. The professionals defined alcoholism as a disease, but also as a threat associated with the poverty of the slums. They identified the causes of alcoholism in genetic predisposition, the social acceptance of alcohol, and the need to deal with psychological pressures, but also in the poverty and risk of the slums, its multi-problematic families, bars, and strong spirits. They believed that the treatment should be multi-professional, holistic and complex, with medical and psychological approaches, and well-defined responsibilities for each one of the health services, but also that the treatment is dependent on the patient's willpower or the intervention of non-medical agents such as religious organisations or the Alcoholic Anonymous. In each one of the three TDHC outcomes, the distinction 'reified-consensual' was clear (Souza, 2012).

Fonte et al. (2019) investigated representations of well-being among diabetic adolescents. They interviewed 28 adolescents and treated the data with the TDHC. They show that the experience of well-being and the management of the disease include not only the normative and prescribed technical-scientific knowledge highlighted by practitioners and parents but also the characteristics of what adolescents perceive to be 'normal adolescence', their lay experiences, and their emotional relations to adulthood.

The outcomes of the TDHC supported these analyses. The first division of the *corpus* generated two subsets of classes. One of them gathered the beliefs about the specialised knowledge coming from figures of authority, and the other one included the ideas about daily and emotional experiences. The authors named the subsets, respectively, "Normative Universe" (Fonte et al., 2019, p. 8) and "Experiential Universe" (Fonte et al., 2019, p. 8). From the perspective adopted here, it is possible to say that the diabetic adolescents inhabited the reified universe when producing the discourse constituting the normative subset and the consensual universe when producing the experiential accounts.

Falgares, Venza and Guarnaccia (2017) evaluated the results of an experiential training group as a tool for the teaching and learning of psychology. They asked 88 clinical psychology students (gathered into five different groups) to write a text prompted by the expression 'becoming a psychologist' before and after their participation in the training group. Then, they analysed all the 176 texts with the TDHC. The authors also investigated the association of the

intervention phases (pre-training-group and post-training-group) with the classes generated by the TDHC. The first division of the *corpus* produced two subsets of classes with two classes each. One of the subsets included two classes associated only with the post-training-group phases of three different groups of students. The other subset included two classes associated with the pre-training-group phases of all the five groups of students and with the post-training-group phase of only one group of students. That is, except for one association, the TDHC placed, on the one hand, the segments of text associated with the pre-training-group phase and, on the other hand, the segments of text associated with the post-training-group phase.

The authors state that the training group "allowed students to build a more realistic and less stereotypical and idealized vision of their profession" (Falgares et al., 2017, p. 244). Regarding the propositions about the method presented here, it is possible to say that the mentioned training group promoted among the students an understanding of clinical psychology based on specialised technical-scientific knowledge. It provided them with the possibility of speaking about the profession from a 'place of authority', based on their likely identification with the leaders of the groups (professors). Hence, after the experience in the training groups, they mostly relied on a reified universe to write about 'becoming a psychologist' whereas in the pre-training-group phase they mostly relied on their personal experiences (consensual universe).

However, the interpretation scheme presented in this paper does not apply to other kinds of studies. The studies cited so far collected data using interviews (Fonte et al., 2019; Souza, 2012) or written texts (Falgares et al., 2017). These methods for data collection provide the possibility of considerable freedom of expression and enough 'space' for the different positions (reified and consensual). They were investigations of anonymous facts (Moscovici, 1991)[2].

In contrast, one would expect the result to be different if the TDHC is applied to texts whose production is carefully controlled such as scientific articles or guidelines documents. This is the case of the study conducted by Alves, Silva, Menandro and Trindade (2017). The

[2] The interpretation scheme is consonant with the findings of other works. Alves (2016), for example, investigated social representations of violence. She conducted focus groups and analysed the data with the TDHC. Concerning the 'axes' (sets of classes) created by the first division of the corpus, she states, "no Eixo 1 predominam formas de conhecimento oriundas do universo consensual enquanto que no Eixo 2 predominam saberes originários no universo reificado [in Axis 1 the forms of knowledge coming from the consensual universe predominate, whereas in Axis 2 the knowledge originated in the reified universe predominates]" (Alves, 2016, p. 298). In a personal communication during the defence of his Master's dissertation, Gorza (2017) stated that the interpretation scheme could also be applied to his findings.

authors applied the TDHC to a document containing technical guidelines for the assistance of individuals and families in situations of deprivation and violence. The first division of the text generated two sets of classes concerning, on the one hand, technical definitions of violence and violence prevention and, on the other hand, prescriptions to professional practices. In the terminology proposed by Moscovici (1991), the authors applied the TDHC to nominated facts (although they approached anonymous facts with other analytical resources).

Boudesseul (2009) used the TDHC to analyse abstracts submitted to a congress of the *Association Française de Sociologie*. The data's modes of enunciation were therefore controlled by the standards of scientific communication. Moreover, the abstracts encompassed a great diversity of thematic and theoretical orientations. In these conditions, the outcomes of the TDHC showed the main topics covered by a scientific field. Marchand (2013) cites various works that have used the same procedure, allowing sociologists to gain insight into their academic field. Similarly, Smallman (2016) applied the TDHC to the 50 most cited papers (period 1992 to 2010) of the journal *Public Understanding of Science* and presented the findings as a list of topics covered by the papers.

PRACTICAL RECOMMENDATIONS

Some questions and recommendations may be useful to interpret the outcomes generated with the software ALCESTE or IRAMUTEQ (TDHC), following the propositions of this paper.

1) Do the two subsets of classes generated by the first division of the *corpus* represent the enunciators' socio-subjective positions in the consensual and reified universes? In order to identify these positions, it is necessary to verify if the enunciators expressed their lay thinking and experiences with the segments of text gathered in one of the subsets (consensual universe) and if the other subset gathered the enunciators' ideas based on authoritative knowledge (reified universe). The sources of specialised knowledge may be, for example, the media, academic education, public policies, juridical or scientific guidelines. The vocabulary characterising the subset of classes referring to the reified universe typically includes technical words and well-established concepts (references to nominated facts).
2) The following questions may be useful to interpret the subset of classes coming from the consensual universes. What are the practical situations to which the segments of text refer? What daily life experiences do the individuals remember? Which social groups are involved in the construction of the enunciated knowledge and how? Since the

consensual universes refer to ‘us’ (in contrast to ‘them’), what are the implications of the expressed knowledge to social identity? How does this specific subset of classes contribute to characterise the enunciators’ ingroup(s) and outgroup(s)? Which deep-rooted psychosocial phenomena (including stereotypes, values, norms, theories about causality, etc.) do these consensual beliefs reaffirm and reinforce?

3) Some of the questions for interpreting the subset of classes referring to the reified universe may be the following. What are the sources of the scholarly or specialised knowledge to which the enunciators submit and which they tend to consider normative or true, independently of their lay opinions or experiences? What are the possible unusual or non-traditional aspects of the reified knowledge in its way of defining objects and prescribing actions towards them? What specific terminologies do the enunciators use? What are the prescriptions concerning vocabulary, information, communication, and practices?

As noted above, the application of this interpretation scheme depends on the method for data collection. The study must consider *anonymous facts* (Moscovici, 1991). It must allow enough space for the consensual universe, the free expression of participants about their reality, beliefs, and experiences. This is normally the case when researchers adopt data collection procedures such as interviews, focus groups, open questionnaires, participant observation, and action-research designs. These methods are frequently used in investigations of social representations.

The analysed *corpus* must be homogeneous (Camargo & Justo, 2018; Kronberger & Wagner, 2000). If the *corpus* is not homogeneous enough, the TDHC may simply reflect the different factors characterising data collection. For example, if researchers conduct interviews about two very different themes (e.g. education and health) or with very heterogeneous groups (e.g., people from different social classes, age groups, cultural or ethnic backgrounds, etc.), the TDHC might identify the different vocabulary characterising the various themes or groups instead of the places from which individuals and groups speak. In other words, it is important to ensure a certain control of independent variables.

In the case of interviews, for example, Camargo and Justo (2018) recommend the inclusion of 20 to 30 participants, depending on the text length. Interviews should not be too short. Fonte et al. (2019), for example, administered 28 individual interviews, lasting from 20 to 40 minutes. They used an interview guide focusing on well-being and the management of

diabetes, safeguarding the homogeneity of the *corpus*. Souza (2012) conducted shorter interviews (approximately 11 minutes) with 40 health professionals, considering perceptions about alcoholism, its causes and treatment. In order to ensure the homogeneity of the *corpora*, Souza (2012) performed three independent TDHC analyses with these three subthemes (alcoholism/alcoholic patients, causes of alcoholism, its treatment).

FINAL CONSIDERATIONS

The TDHC does not always operate the division into subsets of classes corresponding to the consensual and reified universes. Some characteristics of the analysed text may prevent it. The text may be too heterogeneous, containing topics too different from one another. The source of the text may be two social groups in opposition, for example, each one using their specific vocabulary. It may be that the *corpus* is composed of texts such as scientific articles or policy guidelines whose final form did not allow enough space for the consensual universe.

However, the interpretation scheme presented here may be useful for the analysis of many kinds of data. It presents the advantage of revealing the places from which individuals and groups speak, not just themes within a discourse, as being especially suitable for psychosocial approaches. The scheme is consonant with the recommendations to avoid a 'mechanical' interpretation of the outcomes such as a mere description of the content of the classes (Camargo & Justo, 2013) and to avoid mistaking the TDHC for content analysis (Lima, 2008).

The propositions presented here may be used to identify what kind of specialised or normative knowledge also makes up a discourse one could expect to be only experiential (such as the discourse of the diabetic adolescents interviewed by Fonte et al., 2019), and what kind of experiential knowledge also composes a discourse one could expect to be only specialised (such as the discourse of the health professionals interviewed by Souza, 2012). They may allow interpretations of the proportions of specialised and lay knowledge within a discourse. The proposed analysis may also reveal something about how individuals and groups articulate the consensual and reified universes. The researcher may 'return' to the raw data (segments of text or whole interviews, for example) and identify how the enunciators attribute meanings to words, concepts, or segments of text.

The proposed interpretation scheme relies on induction and deduction. The TDHC is mainly inductive. It generates a 'map' of the text, discovering its different lexical worlds (Reinert, 1990). Then, the researcher may adopt a deductive approach to identify the sets of

classes corresponding to the consensual and reified universes. As is always the case with the deductive approach, the researcher must be careful not to force the data into preconceived categories.

This paper proceeds from the theoretical assumption that in "conditions of modernity" (Giddens, 1990, p. 6) individuals and groups express themselves in the two universes, and that in investigations of anonymous facts (Moscovici, 1991), the TDHC will be able to detect the duality. If this assumption is correct, it is also interesting to consider situations in which the separation into the two universes may not be verified. It is possible to hypothesise that this would happen, for example, in conditions that 'precede', 'escape' or 'subvert' modernity such as the discourse of madness, traditional knowledge, myths, cults, and so on. Further studies could approach this problem, and perhaps reencounter the traditional dichotomy of sacred and profane.

The idea that the two universes should emerge from the first division operated by the TDHC is based on a 'strong' theoretical claim and is a testable hypothesis. Future studies may contribute to its further verification or invalidation. Researchers may be interested in explaining conditions in which the mentioned difference does not emerge at all or emerges in other stages of the TDHC. This could lead to interesting theoretical and methodological debates.

As Glady and Leimdorfer (2015) noted, software packages for textual analyses somehow preconceive the interpretation of their outcomes. In the TDHC, the first division of the text presupposes the identification of two radically different 'factors'. This procedure is suitable for the interpretation of its findings in the framework of a specific theory, as I hope to have shown here. Other theories may also be useful and the TDHC outcomes remain open to the imagination of social scientists. Glady and Leimdorfer (2015) describe a wide range of applications of various algorithms and insist on the necessary combination of structured outcomes and open interpretative efforts.

The interpretation scheme presented here is useful for the analysis of social identity and ideology. The mentioned consonant empirical studies can illustrate possible analyses of social identity. The professionals investigated by Souza (2012) constructed social representations of alcoholism in such a way that contributed to differentiate their ingroup (professionals, middle classes) from an outgroup (patients, working classes), and express negative views towards the outgroup. Fonte et al. (2019) showed that diabetic adolescents used their social representations to differentiate themselves from adults and keep a distance to adulthood. The social identity approach highlights the phenomena of attribution of stereotypes to ingroups and outgroups, and

favouritism towards the ingroups, through the processes of social categorisation and social comparison (Hogg & Abrams, 1998). In the case of the investigation conducted by Falgares et al. (2017), it is possible to consider that a process of *identification* of students with the group leaders (professors) occurred.

Social groups have different world views, seek to influence one another, and make their views prevail in society (Batel & Castro, 2009; Callaghan & Augoustinos, 2013; Foster, 2003; Howarth, 2006). It is possible to investigate how social groups construct stereotypes in the consensual universes about ingroups and outgroups and how they articulate these stereotypes with the 'truths' and norms belonging to the reified universes. Considering matters of social identity, discrimination, ideology (Howarth, 2006), communicative orientation, and discursive strategies (Batel & Castro, 2009) may help to improve the potential of social psychology in general and of the theory of social representations in specific for social critique.

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