

## AN ALTERNATIVE TO MAPPING ORGANIZATIONAL IDENTIFICATION: Q-SORT

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### Abstract

*Our paper proposes an approach to combine aspects from social cognition, cognitive mapping, individual mental representations and a stringent aspect from the practice of organizational studies: organizational identification. We argue that organizational identification links the self-concept to the organization, by means of sharing similar, enduring and central attributes (Dutton et al., 1994, Greenwald et al., 2002). After reviewing the approaches to organizational identification as presented in the literature, as well as the measures customarily used, we give special attention to the most important attempts to operationally define this concept, that stem from social identity theory. We then connect organizational identification to the study methods used in fundamental research for the concept of self, primarily to the use of cognitive maps in representing the self-concept. We hence adopt an operational definition of the term and propose as an alternative method of data collection and data analysis for cognitive mapping: the Q-methodology. We analyze in an empirical study the limits and benefits of Q-methodology in the mapping of organizational identification.*

**Key words:** cognitive mapping, organizational identification, self concept

### Issues of organizational identification

How is organizational identification defined in the field literature? A review of definitions points to the fact that by the same word are named very different realities. The most obvious fact is its superposition with the concept of organizational commitment. For instance, Meyer & Allen (1997) define organizational commitment as an attitude or an orientation that *links the identity of the person to the organization*, a process by which the goals of the organization and those of the individual become congruent (Meyer & Allen, 1997). O'Reilly and Chatman (1986) define commitment as a psychological bond between

the employee and the organization, but differentiate between three forms this bond can take: compliance, identification and internalization. They define identification as the process of *an individual accepting influence from a group (organization) in order to establish and maintain a relationship*. Hence, an individual may respect a group's values without adopting them, as opposed to internalization (when influence is accepted because the induced attitudes/values are congruent with one's own) or compliance (when they are declaratively accepted in order to win a certain benefit) (O'Reilly & Chatman, 1986). Interestingly enough, the scale (12 items) developed to measure these three dimensions turned out to have only two factors: 1) identification & internalization and 2) compliance (Sutton & Harrison, 1993; Martin & Bennett, 1996). In fact, this superposition between identification and internalization is also present in other commitment questionnaires (e.g. Organizational Commitment Scale,

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Balfour & Wechsler, 1996: "What this organization stands for is important to me.").

Furthermore, in building his Organizational Identification Questionnaire, Cheney (1983) defines it as an active process by which individuals link themselves to elements in the social scene. "This link is what many other scholars have termed as organizational commitment" (Downs, 1994).

In one of the most cited articles in the field, Ashforth and Mael (1989) refine the concept of identification, differentiating cognitive, behavioral and emotional aspects related to it and discriminate between identification itself and its antecedents or consequences. Starting from the social identification theory, they define organizational identification as the perception of unity with / belonging to a social aggregate (in this case, an organization). In other words, they define identification as a form of self-categorization. They also postulate four principles of group identification, which clear much of the previous confusions. These principles are (Ashforth & Mael, 1989):

1. Identification is a perceptual-cognitive concept, not necessarily associated with specific behaviors or emotional states.
2. Group identification means experiencing at personal level the group's successes or failures.
3. Identification is different from internalization. Identification means referring to self in terms of a social category, while internalization means incorporating the group's attitudes / values as guiding principles of one's own behavior. Accepting a social category as a definition of self does not imply also accepting those group's values and attitudes. Also, identification is specific to each organization; internalization and commitment might not be, because several organizations may share common goals and values. Commitment might arise because that organization is a vehicle for one's own career goals. This leads to the fact that leaving that organization for another one where these goals can better be fulfilled is possible at all times. Identification with an organization, though, means one cannot leave it without some kind of "psychic loss" (Levinson, 1970, apud Ashforth & Mael, 1989).
4. Group identification is similar to identification with an individual, in the

sense that one defines oneself in terms of that social referent.

As previously mentioned, the authors also propose a number of antecedents that level group (organizational) identification – distinctiveness of the group, the group's prestige, salience of outgroups, factors associated with group formation (personal interaction, similarity, liking, proximity, shared goals or threats, shared history etc.) –, as well as consequences stemming from one's organizational identification – support and commitment towards the organization (particularized according to the elements of identification); cohesion, cooperation, altruism, positive group evaluations; internalization of norms and values, homogeneity in attitudes and behaviors (Ashforth & Mael, 1989).

As a conclusion to the refinements the authors make to the concept and a consequence of the fact they view it in terms of social categorization, they point to the fact that group (organizational) identification is also present in the absence of interpersonal cohesion, similarity or interaction to the other group members.

Dutton, Dukerich & Harquail (1994) define organizational identification as the degree to which a member defines himself or herself by the same attributes that he or she believes defines the organization. Strong organizational identification occurs when (1) one's organizational identification is more salient than alternative identities and (2) his or her self-concept has many of the same characteristics he or she believes define the organization as a social group. An organization's members are said to become attached to their organization when they incorporate the characteristics attributed to the organization to their self-concept. In this perspective, the self-concept refers to "the totality of self-descriptions and self-evaluations subjectively available to an individual" (Hogg & Abrams, 1988, cit. in Ashforth & Mael, 1989).

Dutton and collaborators propose three ways of operationalizing strength of identification: (1) directly assessing it, through scale-based measures; (2) by asking organizational members to evaluate a set of identities and indicate the relative degree to which these identities accurately describe them as individuals, either by ranking each identity or ranking them in hierarchy; (3) directly assessing the level of overlap between the characteristics by which an individual describes him-/herself and the characteristics

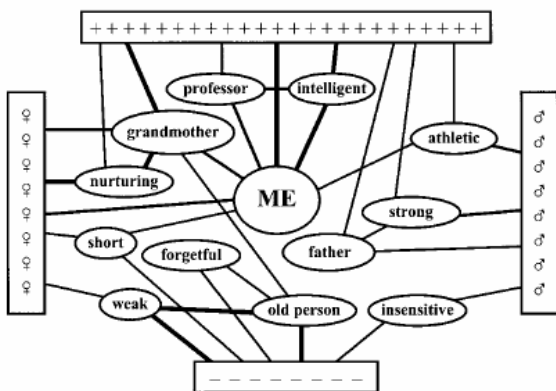
that typify the organization. These are those characteristics that are enduring, central and distinctive to both the individual and the organization (Dutton et al., 1994).

In our paper, we shall use Dutton, Dukerich and Harquail's definition of organizational identification as our work definition. They define organizational identification as a process of self-definition, through the cognitive connection established between the definition of the organization and the definition of self (Dutton et al., 1994).

At this point, we shall review some of the most important contributions to the study of the self concept in fundamental research. We shall look at the implication for research of the definition proposed by these authors and the methods they have accordingly used. Our aim is to adopt a proper method for the study of organizational identification, a method that is both valid and easy applicable in ecological settings.

**The self and the self-concept**

Greenwald defines the self-concept as the association of the concept of self with one or more (nonvalence) attribute concepts (Greenwald et al., 2002). The self can only be defined in relation to the different groups one belongs to. By the representation Greenwald and collaborators propose for the conceptualization of the self, they adhere both to Heider's equilibrium theory and to Tajfel and Turner's social identity theory. The representation proposed is in fact a cognitive map of the self-concept. Such a map is illustrated in figure 1.

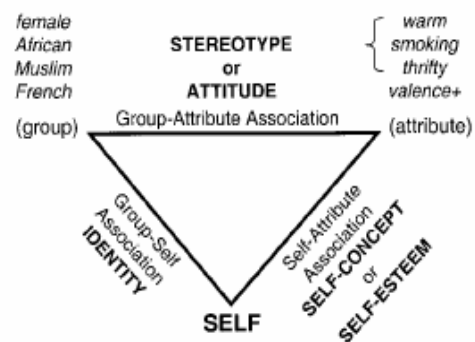


**Figure 1.** A social knowledge structure (Greenwald et al., 2002)

*“This structure includes associations that correspond to social psychological constructs of self-concept, self-esteem, stereotype, and attitude in the psyche of an elderly female academic. Nodes (ovals) represent concepts and links (lines) represent associations. Line thickness represents strength of association. The self-concept includes links of the ME node to concepts that include roles (professor, grandmother) and trait attributes (intelligent, athletic)”* (Greenwald et al, 2002, p. 5).

They further developed this representation of the self to a more theoretical refinement, which adheres to Heider's equilibrium theory and offers a dynamic view of the social concepts comprised (i.e. stereotype, attitude, self-concept and self-esteem and identification). Such a representation is presented in figure 2. They explain this figure as it follows:

*“Each vertex of the triangle represents a concept. A balanced identity design always includes self as one of the concepts (bottom vertex), and it also includes both a social category (group) concept and an attribute concept. The three associations measured in the design are identified on the triangle edges that join the vertices for the two associated concepts. The group–self association corresponds to an identity. The labels for the other two types of associations depend on whether the attribute is valence or not. If the attribute is valence, then the group-attribute association is an attitude and the self-attribute association self-esteem. If the attribute is not, then the group-attribute association is a stereotype and the self-attribute association is an aspect of self-concept”* (Greenwald & al, 2002, p. 9).



**Figure 2.** A representation format for balanced identity designs (Greenwald et al., 2002).

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Getting back to the issue of organizational identification, as connected to the self-concept, there is a necessary point to be made now. As Ellemers and collaborators (2002) argue, one source of confusion in the literature is that the term "social (in this case, organizational) identification" has been used to refer to the content of the identity itself, as well as to indicate the strength of the association with a particular social category. These are essentially different components of the social identity, which although related, may operate relatively independently of each other (Ellemers & al., 2002). In terms of the cognitive map Greenwald proposes, this is the difference between the attributes included, and the distance between "self" (as a node) and these concepts (as nodes in the map).

To conclude these theoretical remarks regarding the study of self, we focus on Greenwald's conceptualization of identity as the link between the self and a social group and of self-concept as the link between self and attributes that belong to that social category. In our case, organizational identity could be conceptualized as a cognitive map comprising the self and those attributes characteristic to the organization, that the individual has encompassed in his self-concept. Such a map would illustrate the attributes more important to the definition of self as situated closer and having stronger ties with the node representing the self.

The problem is that only by drawing the map of organizational identity, we still wouldn't know too much about organizational identification, since we assumed that the latter means using the same attributes to define oneself as they use to define their organization. In order to obtain a cognitive map of organizational identification, we should superpose the map of organizational identity with the one of the organization's image, as suggested by Dutton et al. (1994). At this point, the logical question that arises is "what method would be best suited to collect and aggregate the data to draw this cognitive map?".

### **Cognitive mapping**

In the study of organizational identification, cognitive mapping is first of all a method of researching and constructing the structure defining an individual's self-identification and/or his or her opinion about the characteristics defining the organization. Cognitive mapping has been widely accepted

in current research as a mostly qualitative investigation technique, based on ideographical methods (such as individual in-depth interviews or thought-listing technique) (Daniels, 1999; Cacioppo, Hoppel & Ernst, 1997), sometimes structured by the usage of scaling and small instruments. Such structuring methods may imply the "pile sorting technique" (Trochim, Cook & Setze, 1994), repertory grids (Daniels, 1999) and ratings on Likert scales. The pile sorting technique requires participants to group the statement slips into piles in a way that makes sense to them. The only restrictions in this sorting task are that there cannot be (a) exclusively one-item piles (in a 20-item set, there shouldn't be 20 one-item piles), (b) one pile consisting of all items, or (c) a "miscellaneous" pile (any item thought to be unique should be placed in its own separate pile).

According to Trochim, Cook & Setze (1994), cognitive mapping combines a group process (brainstorming, unstructured sorting, and rating of the brainstormed items) with several multivariate statistical analyses (multidimensional scaling, the PathFinder algorithm or hierarchical cluster analysis) and concludes with a group interpretation of the conceptual maps that result.

Hence, cognitive mapping has also been viewed as a technique for the visualization of structure and connectivity, based upon data collected with other, quantitative and structured methods of investigation. One such method is the visual card sorting, which implies the physical mapping of the given concepts on a sheet of paper, so that physical proximity would reflect similarity and causal determination relations. This method allows the computation of map connectivity and map diversity, hence computing map complexity (Curşeu, 2003). Multi-dimensional scaling and the Pathfinder algorithm have both made a career out of visualising statistical data.

We take this last stance and consider cognitive mapping to be an important visual tool the researcher may use to clarify connections and patterns that one is confronted with the utter impossibility of grasping, when based on purely numeric and statistical information.

Most of the research on cognitive mapping hitherto has defined data collected on matters of organizational identification, both pertaining of the organizational level and of the more individual aspects, as being objective

data. However, even though objective in a sense of „objectively measured”, data collected from individuals about how they view their organization, about how they describe their social group, about how they describe themselves are purely subjective data, in the sense that they cannot be objectively and reliably measured the same one measures the distance between two points in space or the outside temperature. These data are results and products of the mind and should be treated as such and assessed with the help of methodologies that (a) ascertain this epistemological stance and (b) have proven to have both the techniques and the expertise to deal with subjective data. Based on these reasons, we argue that Q-methodology is fit to be a data collection tool for cognitive mapping, because of its epistemological background, its procedure and form of both raw data and final results it provides.

### Q-Methodology

Q methodology circumscribes both a data collection (Q-sorting) and a data analysis technique (Q-factor analysis). The core distinction from classical research methods in social sciences resides in the fact that this method analyses/correlates people instead of variables, thus building typologies (Stephenson, 1953). It resembles cluster analysis, but while the latter is only a mathematical method of data aggregation, Q-methodology is a comprehensive approach, which keeps the researcher in permanent contact with the data. The resulted typologies are hence impregnated with meaning and do not only constitute the best mathematical solution (Iliescu, 2003). This interaction with the data is based on a constructivist assumption lying behind Q-methodology.

Q-methodology is qualitative through its assumptions and the logic of research, and quantitative through the statistical apparatus sustaining data analysis (Q-factor analysis) (Brown, 1996).

“A Q-sort’s results can provide a wealth of rich data and researchers can use this technique to qualitatively discover patterns of behaviors and perceptions of individuals. Next, it is a description of how the results of a Q-sort investigation can be quantitatively analyzed, which allows researchers to compare individuals with each other and identify composites (i.e., typologies) of individuals.” (Iliescu, 2003).

The application of Q-method involves the following steps:

1. Preparing the application: extracting the community’s concourse on the subject of interest, through direct (individual or group interview) or indirect (document analysis) methods, establishing an optimum number of cards to operate with, sampling the statements from the concourse and creating a q-deck, choosing the forced distribution’s shape: the number of points on the scale [-x,+x], the number of cards to be placed on each point of the scale.
2. The application: the respondent is first required to group the cards in three piles: statements of agreement, statements of dissent and of indecision. The respondent is then asked to place all q-cards on the given continuum [-x,+x], following the rules of the forced distribution, so that in the end the cards’ placing will resemble a normal curve (like in fig. 3).

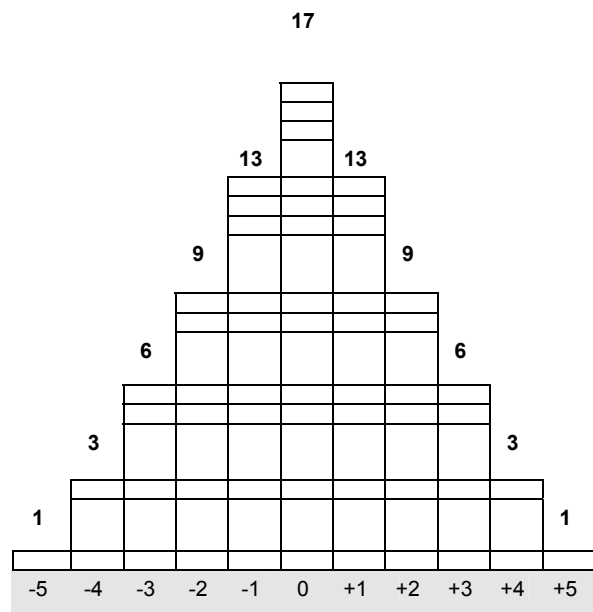


Figure 3. Forced distribution of Q-sorts

3. Data analysis and Q-factors extraction. While R factor analysis (the analysis we commonly know as factor analysis) can be used to find similarities (or shared variance) across test items, in Q-factor analysis each person is treated as an experimental case and represents the factored entity. Thus,

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instead of factoring variables across people, in Q-factor analysis people are correlated across variables (Carr, 1992; Burt, 1972).

### **Subjects and method**

The application we propose is a study of organizational identification in students. We used different samples for the two parts of our study. We first asked 63 students from the same department to make free associations based on the syntagm "student in X (name of the department) at the Y University (the university where they study)". They had this expression written down on a sheet of paper and had 5 minutes to write all the words or expressions that came to their minds. A large number of concepts (over 600) were drawn from their association. Out of these concepts, we kept (1) the ones that appeared most frequently, (2) that were particular only to this category of students and did not apply to all students (e.g. study, parties, exams). (3) We also eliminated synonyms, keeping only one if several appeared. In the end, we decided for a solution of 81 concepts, representing attributes, emotions, behaviors, facts, all related to being a student in X at the Y University.

These concepts were written down on 81 cards, and 23 other students (study years 1 to 4, males and females, aged 19 to 33) had to complete two Q-sorts using them. The given distribution was from -5 to 5, as it follows: 1, 3, 6, 9, 13, 17, 13, 9, 6, 3, 1. They first had to fill it for their department and the second time for themselves as students there. They were given the following instruction: "Please order the 81 cards you were given on a scale from -5 (I don't think this statement/concept is characteristic for my department /myself as a student of this department) to 5 (I think this statement/concept is characteristic for my department /myself as a student of this department) so as to respect the given distribution."

### **Results and discussion**

We analyzed the results obtained from the sorts using Q-factor analysis (the PQ-method program, designed by Peter Schmolck).

For the students' image of the faculty, we first performed a centroid extraction in 7 factors. 20 of the 23 respondents loaded on

the first factor, while none of the rest loaded significantly on any of the others. Based on this interesting result, we proceeded to a centroid two-factor extraction and adopted the resulting two-factor solution as a working one. In this context, the first factor was obviously the most spread one, and we may say, the one representative for the department's organizational culture.

The Self-Identity sorts grouping after the factorial analysis in two distinctive factors shows that we have encountered an unexpected consensus in self-definition and self-perception.

The first factor, containing 16 students is grouped around the conceptual territory of new ideals ( $z=1.541$ ), knowledge (1.525), learning (1.417), development (1.201), work (1.055), high standards (1.024). They seem to be rather neutral towards items like group work (0.177), role models (0.069), uniqueness (-0.016), loyalty (-0.105), and have a strong rejection for items like indifference (-2.397), boredom (-2.234), regrets (-2.196), anger (-2.074), lack of action (-1.974), failures (-1.877).

The second factor, loaded by only 4 students, occupies a self-representational territory based primarily on development (2.076), brand new information (1.847), expertise (1.810), highest standards (1.625), knowledge (1.272). These people are neutral towards concepts like status (0.072), new ideals (0.000), satisfaction (-0.026), prestige (-0.136) and seem to heavily reject identifying themselves based on concepts like lack of action (-2.405), unorganized (-2.136), limits (-1.803), fears (-1.729), regrets (-1.604).

The factors are mostly similar in their rejection patterns, but are quite different in some of those things they adhere and are neutral to - even though one cannot state they were contradictory or positioned competitively one towards the other. There seems however to be a serious increase in efficiency, a down-to-earth taste of realism and a strive for doing better in the second factor, while the first seems to be more like the idealistic, normal, everyday student.

Images of the organization in the representational system of the sample has split, too, in only two factors, the first loading 18 respondents and the second only two. We may conclude there is a more accentuated consensus regarding the description of the organization then it was the case for the self-descriptions.

Descriptions of the organization, based on the item-response pattern of this first factor, convolute around prestige (2.121), renowned (1.717), good teachers (1.664), high standards (1.590), dropping down in intensity towards vision (0.130), ambition (0.122), hopes (0.110), effort (0.025), power (-0.001), pleasure (-0.039), something different (-0.063) and turning to a definite negative view of boredom (-2.060), limitations (-2.001), uncaring (-1.998), regrets (-1.902), routine (-1.713), lack of action (-1.691).

Both pre-sorting and post-sorting interviews are consonant with this pattern of perception regarding the organization: the university is thus seen as being renowned, having high prestige and good teachers. The prestige is apparent both in the academic community, when compared with other universities in the domain of this department, and in student-talk. This prestige is naturally associated with members of the organization, so that professors teaching here are more positively evaluated by the outside world, and students learning here are looked up to by students from other universities. Furthermore, the university enforces high standards on its teachers, its students, the courses, the research programs etc. Few associate the university with lack of action, boredom or routine and, even though there is a widespread belief of students around the country that university life is generally full of limitations, frustrating in the lack of practical experience it provides and thus generating regrets, students in this university don't seem to be consonant with this view.

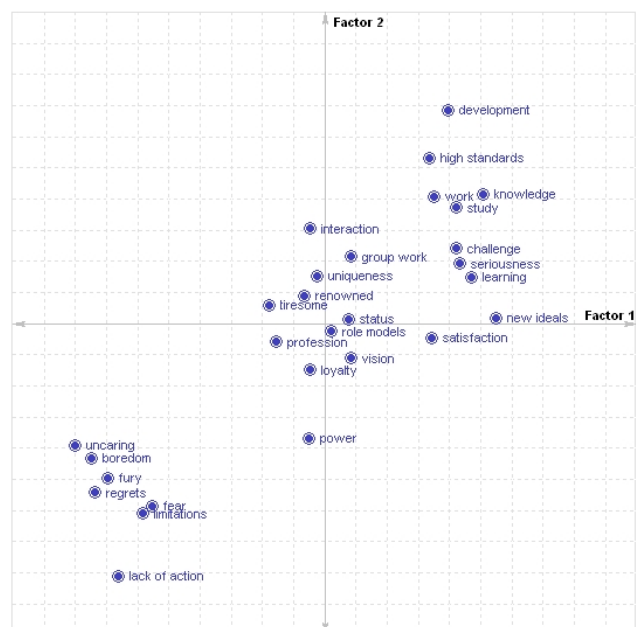
The next step of our procedure was to visualize the maps of identity and of organizational image, according to the factors we obtained. We did this by means of plotting items into a two-factor space, considering the Z-scores of every item on every factor as coordinates. Figure 4 presents this visualization for organizational identity.

As may be observed by visual inspection of the graphic, items are grouped on a path hinting at linear regression and at a high correlation between factor scores. However, there are significant differences in Z-scores for some items, from one factor to the other.

The first factor has significantly larger scores on items like new ideals, satisfaction, learning, seriousness, uncaring and boredom (the last two being negatively loaded). As ascertained in post-sorting interviews, these students view the university as tainted by a

kind of idealistic halo, are highly satisfied with how things evolve, are set on learning and project their idealistic attitude on the current and future behavior of faculty staff. They reject the idea of boredom or uncaring, which is somehow hinted at by those students comprised in the second factor.

The second factor has significantly larger scores on items like development, high standards, interaction, group work, power (negatively loaded), showing thus, consonant with post-sorting interviews, that they perceive the university as encouraging self-development, a high level of interaction among its members, group work and highest standards in scientific output and discouraging power games and dominance struggles.



**Figure 4.** An illustration of main organizational identity attributes, based on the results of Q-factorial analysis

A similar visualising procedure was run for organizational image, but superimposing the two pictures did not result in an intelligible relationship between self-evaluations and organization-evaluations of items. The reason for this could be the fact that, even though both resulting in two factors with the first one more heavily loaded, the two sorts are not similar: people in the first self-identity factor are not always the same as people in the first organizational-perception factor. The factor solutions have been differently rotated for every sample and are actually the expression of connected but quite



positivity of self. So denying negative attributes is one of the first tasks our cognitive systems deal with in the identification process. The attributes most strongly denied are boredom, limitation, regrets and fury for the faculty's image and boredom, regrets, fury and lack of action for identity. The best-contoured attributes for organizational identification are challenge (positive), wasted time and boredom (negative).

It appears that concepts having the best fit between self-image and organizational perception and being thus part of the "identity" (the matching of the above) are challenge, high standards, wasted time (negative) and boredom (negative). Concepts important and salient but not perfectly matched are development, work, hard study, uncaring (negative), limited (negative), discontent (negative). Concepts with a rather low degree of matching are annoying and disorganized (both negative).

In the interpretation of the map, several aspects must be taken into account.

We can first analyze the distance between concepts, as a measure of their similarity in the position they have in one's identity and in one's organizational image map. From this we can tell which are the defining attributes of identification (the closer they are represented, the more defining they are). Another measure of these attribute's centrality or salience are the Z-scores they obtained.

We could, based on the proximity measure, group the items into conceptual territories. As an example, we have a first, positive, conceptual territory where the challenge stemming from high standards can be met by hard study, work and self-development. And of course we could have a second, negative, conceptual territory, where failure is annoying, leads to fear and anger and lack of action turns into routine, regrets, wasted time and compromise.

Second, we can analyze separately concepts of agreement and of disagreement. This is a valuable asset this technique offers for cognitive mapping, since it can represent reality in two dimensions: what we are and what we are not. Generally, cognitive maps reflect content (attributes), not their valences. Nevertheless, our cognitive system seems more prone in processing negative information, as proved in many decisional studies focused on the framing effect (see Curșeu, 2003, for a thorough analysis of the literature).

## Concluding remarks

Starting from a fuzzy state of art in the research of organizational identification on the one hand and on the developments of fundamental research regarding the self, self-concept and identity, our study proposed a novel approach for the study of organizational identification (superposition of cognitive maps of organizational image and identity), as well as a different method for data gathering (Q-sort) and data analysis (Q factorial analysis). The advantages of the methodology we proposed lie in high ecological validity (participants reflect their own world in generating the items), ease of use in practice, but most important, in the representational realities this kind of map covers, offering information not only about content and structure, but about concept-valence as well.

## Rezumat

*Lucrarea de față pornește de la perspective ale cogniției sociale, hărților cognitive și teoriei identității sociale în abordarea unei realități organizaționale: identificarea organizațională. Aceasta din urmă desemnează legătura dintre conceptul de sine și organizație, prin împărțirea unor atribute centrale, stabile și similare între cele două (Dutton et al., 1994, Greenwald et al., 2002). După trecerea în revistă a abordărilor identificării organizaționale din literatura de specialitate, precum și a măsurătorilor ei consacrate, ne centram asupra operaționalizării acestui concept, în termenii teoriei identității sociale. De la identificarea organizațională trecem apoi la metodele de studiu a conceptului de sine, așa cum apar ele în cercetarea fundamentală, în speță de utilizarea hărților cognitive ca metodă de reprezentare a conceptului de sine. Pornind de la o definiție operațională a termenului, propunem o metodă alternativă de colectare și prelucrare a datelor pentru construirea hărților cognitive, și anume metodologia Q. Într-un studiu empiric, verificăm limitele și avantajele metodologiei Q în cartarea identificării cognitive.*

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