"Views of Context". An instrument for the analysis of the cultural milieu. A first validation study

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The View of Context (VOC) is a survey instrument designed to detect the content of generalized affect-laden meanings embedded within large-scale cultural milieus. Generalized affect-laden meanings work as basic embodied system of assumptions channelling the way of feeling, thinking, making decision. The paper outlines the theoretical and methodological framework of VOC Semiotic Cultural Psychology - and reports a first study of validation, aimed at analysing the VOC's construct validity. The study tests 5 hypotheses, each of them focused on a characteristic of the generalized affect-laden meanings that the instrument is designed to map: their a-semantic (HP1) and affective (HP2) valence; the regulative function (HP3) they exercise on

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the sensemaking; the assumption that these meanings are transversal to different domains of experience (HP4); the assumption that there is a plurality of these meanings embedded in a certain cultural milieu (HP5). In order to test these hypotheses, a combination of a multidimensional procedure of data analysis and a Path Modeling has been applied on a survey responses obtained from a UK representative sample (N=765). Results are consistent with hypotheses, in that providing evidence of the VOC's construct validity.
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keywords: VOC, symbolic universes, affective sense making, cultural milieu, PLS-PM, high-order construct model.

1 Introduction

The past three decades have shown a growing interest in culture and the relationship between culture, behaviour and cognition. More and more scholars have highlighted how, in order to understand psychological and socio-political phenomena, one has to take into account the cultural system such phenomena are embedded in (e.g. Aronoff and Kubik, 2012; Harrison and Huntington, 2000; Jessop, 2012; Magioglou, 2014; Salvatore et al., 2009; Shweder, 1991; Verweij, 1995; Group, 2014; for comprehensive reviews, see Matsumoto, 2001; Valsiner, 2012).

Generalized affect-laden meanings and sensemaking

The concept of culture is highly polysemic - more than 300 definitions of it were counted in literature (Baldwin et al., 2006). Therefore, in order to investigate the relation between culture, behaviour and cognition, it is needed to specify preliminarily what notion of culture frames the analysis.

Cultural Psychology - in particular the semiotic approach to it (Valsiner, 2007, 2009; Valsiner and Salvatore, 2014); see also (Salvatore, 2012, 2016b; Valsiner et al., 2016; Zittoun, 2006; Salvatore, in press) - has developed a view of culture as a process intertwined with feeling and thinking. According to semiotic cultural theory, mental processes (feeling, thinking, decision making) have to be viewed as ongoing dynamics of sensemaking, namely as the activity of interpretation of the world through which the human being makes the experience meaningful. Moreover, the semiotic cultural psychology highlights that sensemaking is channeled by generalized meanings that work as basic embodied system of assumptions e.g. "the world is a jungle where the only chance of survival is to surrender to those who have power"; or "the world is under the attack of a persecutory stranger". These embodied assumptions are embedded in the socio-cultural environment and channel lower generalized meanings i.e. specific concepts and opinions concerning facts and objects of the social and physical world. In so doing, the generalized meanings shape the way of feeling, thinking, making decision namely, the experience of both the outer (i.e. the social and physical space) and inner world (i.e. one's body and feelings).

Semiotic cultural psychology underlines four main characteristics of the generalized meanings.

1. *Affective, a-semantic valence.* A generalized meaning consists of a network of less generalized meanings that are linked in accordance to their affective valence, regardless of their semantic relationship. This means that two meanings having no semantic similarity can be merged as consequence of their similar affective valence (e.g. as consequence of the fact that are both associated to the generalized meaning of pleasantness); an example of that process of sensemaking is provided by the subsumption of immigrants and criminals, which is the consequence of the fact that the two independent semantic categories are merged in the affective class of persecutory otherness (for a similar view, see Niedenthal et al., 1999). From a complementary standpoint, two meanings being semantically similar may be kept separate, due to the different affective valence attributed to each of them for instance, take the case of how differently the same illegal act is considered if it is performed by a member of the in-group or outgroup. We use the term "a-semantic" in order to highlight that the generalized affect-laden meanings are the expression of a level of sensemaking working in accordance to a different but not fully alternative - logic than the rational one, namely, the logic of the emotional, affect-laden daily thinking (for a discussion of this point and on how it reflects the role played by unconscious in thinking see Salvatore and Freda, 2011; Tonti and Salvatore, 2015).

2. *Higher-order function.* The generalized meaning plays a higher-order, regulative function on sensemaking. As said above, it works as an embodied system of assumptions that channels how the less generalized meanings are used in, in so doing the way of feeling, thinking and acting. Incidentally, it should be noted that such a higher-order function does not imply a top-down view of causality; rather, it is carried out in terms of constraints put on the variability of the sensemaker's interpretative activity (Salvatore and Freda, 2011; Salvatore, 2016a).

3. *Holistic valence.* A generalized meaning refers and exercises its regulative function over the sensemaker's field of experience as a whole, rather than over only single parts of it (i.e. specific events and objects). This means that it works as the universe of sense individuals are completely embedded within. Accordingly, Salvatore et al. (submitted) use the term symbolic universe to denote them.

4. *Pluralism.* The cultural milieu is pluralistic. Indeed, the cultural milieu of a social group is made up of a plurality of generalized affect-laden meanings, each of them constituting a peculiar interpretation of the cultural milieu. Thus, the fact that the members of a social group share the same cultural milieu does not entail that they feel, think and act in the same way rather, it means that the variability in their feelings, thoughts and acts is due to the plurality of the basic assumptions allowed by that cultural milieu (Salvatore and Venuleo, 2013; Salvatore, 2016a; Salvatore, in press).

Evidence of the role of the generalized affect-laden meaningstitle

Several studies from different domains of the psychological sciences have provided evidence as to the generalized affect-laden meanings and the role they play in sensemaking. The vast literature on semantic differential (Osgood et al., 1957) has showed how people tend to represent objects in accordance to latent generalized dimensions (i.e. evaluation, power and activity) that are higher-order with respect to and therefore independent from - the semantic content of specific objects (e.g. the functional properties characterizing objects as "Japanese food" or "Juventus football team").

Moreover, these higher-order dimensions are more or less the same in spite of what objects have been investigated, where and when. Authors have underlined the affective nature of these generalized dimensions, due to their generalized, pre-semantic as well as conative and oppositional (i.e. good-bad; weak-powerful; active-passive) characteristics.

Turvey et al. (1969) found that the prime effect works also when prime and target are not associated because of their semantic linkage but because of the same affective valence. In so doing they showed how people think in accordance to affective, a-semantic linkages among objects. To come to more recent studies, Venuleo et al. (2015) showed that differences at the level of generalized meanings (in the terminology adopted by these authors: subjective cultures) discriminates between pathological and non-pathological gamblers. In another study, Venuleo and colleagues (2016) showed how subjective cultures were able to discriminate the freshmen students that would have drop out an academic program after two years.

Tonti and Salvatore (2015) highlighted a relation between the level of affective activation of the sensemaker and her/his tendency to carry out evaluations of socially relevant objects (e.g. immigrant, future) in terms of homogeneous (despite the lack of semantic linkage among them), extreme judgment (e.g. "very much" or "not at all"). Finally, it is worth referring to a series of studies (Nitti et al., 2010; Salvatore et al., 2010; Gennaro et al., 2017) that have showed that good outcomes in psychotherapies can be modelled in terms of a U-shape dynamics of the generalized meanings exchanged between patient and therapist (for a review of these studies, see Salvatore, 2016a).

The large-scale analysis of the cultural milieu

Current approaches to large-scale cultural analysis were not designed specifically for mapping the content of generalized affect-laden meanings. Following Kashima (2014), one can cluster the majority of current approaches in two main classes: analyses based on archival data (e.g. texts from mass media – Michel and colleagues (2011) introduced the term culturomics for denoting this kind of approaches) – and survey questionnaires. On the one hand, archival data allow to collect longitudinal, large scale information on the cultural milieu; yet, these information provides cues of the cultural milieu, but does not to map directly its content.

For instance, Twenge and colleagues (2013) mapped the evolution of the individualism in US over about half century (1960-2008) through the analysis of the frequency of words concerning such a dimension of meaning (e.g. I, me, my, unique). On the other hand,

survey questionnaires (e.g. World Value Survey [WWS], Eurobarometer) detect the content of the cultural milieu directly (i.e. people's opinions, attitudes and beliefs), but the focus of these instruments is usually not about generalized meaning; instead they typically focus on the way people represent discrete elements of experience (e.g. the trust in institutions). This means that these surveys can provide no more than indirect cues of the generalized affect-laden meanings at the best.

From a complementary standpoint, one can note that qualitative, hermeneutic approaches can provide an alternative solution for the detection of the content of generalized affect-laden meanings and the analysis of their role in sensemaking (e.g. Salvatore, 2014; Salvatore et al., 2013, 2014; Sammut et al., 2012). However, whereas this kind of approaches allows a deep comprehension of people's systems of meanings (also at generalized level, when this is the aim of the analysis), it is unable to and actually it is not designed to - provide a comprehensive map of the cultural milieu of a broad social group or its evolution over time.

View of Context (VOC). An instrument for mapping the generalized affect-laden meanings

The View of Context (VOC) survey instrument candidates to provide a corrective for this lack of methods. It was designed specifically to detect the content of generalized affect-laden meanings embedded within a large-scale cultural milieu. The methodological rationale framing the VOC can be synthetized in the following points.

1. Generalized, a-semantic affect-laden meaning is embodied; therefore, it is not observable directly. It can be mapped only abductively, namely by detecting its effect, that is how it channels the sensemaker's interpretation of the experience.

2. Each item of the questionnaire provides the respondent with an object of experience triggering her/his interpretation (e.g., items can ask the respondent to connote a certain object, to assume a position with respect to an affect-laden statement, and so forth; see below, section Instrument).

3. Due to its (1) a-semantic, (2) higher-order, and (3) holistic valence (see above section: Generalized affect-laden meanings and sensemaking), one can expect that: (I) the generalized affect-laden meaning consists of a pattern of less generalized meanings e.g. opinions, evaluations, level of agreement with statements associated with each other in spite of the lack of reciprocal semantic similarity; (II) that such a pattern exerts an effect on sensemaker' interpretations (i.e. the way of answering to the questionnaire's items); and (III) that such an effect works transversally over the variety of domains of experience (e.g. the conception of wellbeing, the experience of the place where they live, the trustworthiness of institutions, the vision of own country's future). (expectations I, II and III draw from, respectively, the generalized meaning's characteristics 1, 2, and 3).

4. Accordingly, any generalized meaning can be detected through a strategy of pattern recognition namely by means of an analysis aimed at identifying a set of co-

occurring responses whose association lends itself to be interpreted meaningfully as the marker of the a-semantic and holistic valence of an underpinning generalized meaning (Salvatore et al., 2017; Salvatore and Venuleo, 2013; see below, Data Analysis).

2 Aims and hypotheses

Previous studies provided some evidence of the psychometric properties of the instrument, which showed a satisfactory level of inner consistency (Chronbach's alpha =.74, cf. Venuleo et al., 2016) as well as good construct (Mannarini et al., 2012) and criterion validity (Venuleo et al., 2015). Yet, these findings have to be considered preliminary, due to the fact that they were obtained from specific sample (students, gamblers) and they concern previous versions of the instrument. Indeed, compared to previous versions, VOC is shorter and more consistent with the a-semantic and affective holistic valences of the generalized meanings. Moreover, whereas the previous questionnaires were in Italian (the language context they were applied), VOC has been built in English. A more systematic program of psychometric validation of VOC is therefore required. This study intends to contribute to this scope with a first analysis of its inner consistency and construct validity. More specifically, the study is aimed at testing if the respondent's systems of meanings detected by the VOC have the characteristics (Affective and a-semantic valence, High-order function, Holistic valence, Pluralism) that the semiotic cultural psychology assumes to be peculiar of the generalized meanings embedded in the socio-cultural environment and channelling the sensemaking (see Introduction). Should this be so, the VOC would show to be an instrument enabling the large-scale analysis of the cultural milieu of a given society in terms of the mapping of the generalized, affect-laden content. Accordingly, the study intends to test the following 5 complementary hypotheses, which are derived from the semiotic cultural psychology's view of the characteristics of the generalized meanings and the role they play in sensemaking.

1. The VOC procedure of pattern recognition is able to identify co-occurring responses that have no semantic linkages among them; therefore, such a co-occurrence is not explained or justifiable in terms of intra-class semantic similarity (HP1).

2. Rather, each pattern of co-occurring responses is characterized by the same affective valence; therefore, it can be interpreted meaningfully because of the intra-class affective similarity of the co-occurring items (HP2).

3. The pattern of co-occurring responses exercises a regulative function on the respondent's way of reacting to items (i.e. on the less generalized meanings the items concerns with) (HP3).

4. Such an effect is transversal: it spreads over items whose content concerns with different domains of reference (HP4).

5. The VOC procedure of pattern recognition identifies more than one sets of co-occurring responses, each of them characterized by a peculiar affective meaning (HP5)

As one can see, hypotheses 1-2 concern characteristic A (a-semantic and affective valence) of the generalized affect-laden meanings; hypotheses 3, 4, and 5 concern their characteristic B (super-order), C (holistic valence), and D (pluralism), respectively.

3 Method

In this section we will outline the strategy of analysis used for subjecting the hypotheses HP1-HP5 to empirical test.

Preliminarily, it is worth highlighting that due to the specificity of the VOC questionnaire, the test of its construct validity requires to adopt a quite peculiar methodological strategy, rather different from the standard procedure of validation.

More specifically, two are the facets of the VOC questionnaire that have relevant methodological implications. First, it has to be noted that the VOC questionnaire adopts an explorative approach. Whereas several instruments are based on pre-determined constructs and aimed at measuring their incidence within the population (e.g. the Portrait Value Questionnaire 21 [Schwartz, 2003] provides scores for 4 scales, each of them concerning with a second-order value, being the combination of a set of more specific values: "Self-Transcendence"; "Self-enhancement"; "Openness to change" and "Conservatism"), the VOC has not an a priori repertoire of generalized meanings; rather, it is aimed at searching for the generalized meanings as they are within the cultural milieu under analysis.

Second, the generalized meanings are assumed to have a-semantic and affect-laden content. Due to these two characteristics, the construct validity may not be a matter of consistency between the semantic content of the dimensions detected by the instrument and the expected constructs. Rather, the VOC's construct validity requires to be analysed in terms of the instrument's capability of detecting meanings that prove to have the qualities i.e. a-semantic and affective valence, high-order function, holistic valence and plural (see above, section Generalized affect-laden meanings and sensemaking) that, according to the theory, are specific of the generalized meanings embedded within the cultural milieu.

To this end, a combination of a multidimensional procedure of data analysis, a quali-quantitative item analysis, and a Path Modeling was applied on a survey responses obtained from a UK representative sample. More specifically, first, the multidimensional analysis was used for identifying the meanings mapped by the VOC. In so doing it was possible to test hypotheses that these meanings have a-semantic (HP1) and affective valence (HP2), as well as that they are a plurality (HP5). Second, the Path Modelling was carried out, with the aim of testing if a generalized meaning - modelled as second order latent variable- did play a super-order function (HP3) on a plurality of lower order meanings, each of them corresponding to a domain of reference and modelled as a first

order latent variable (HP4). To this end, preliminarily to the Path Modelling, the quali-quantitative content analysis of the VOC was performed, in order to group the VOC items by reason of their domains of reference. Additionally, two further instruments were introduced in the Path Modelling, in order to add two independent domains of reference. In what follows details as to sample, instruments and data analysis are provided.

3.1 Sample

The study is based on a stratified random sample of UK population (N=765). The stratification criteria were gender, age, education and region (i.e. NUTS1 geographical units). Participants were involved in the survey in 2016. 50,1% was female; the average age resulted 44.98 (ds=16,187). Table 1 reports the distribution of the sample over levels of education. The questionnaire was applied through an on-line platform accessible from the official site of the Re.Cri.Re project (www.recrire.eu).

Table 1: Sample's Level of education

	F	%	Valid %
< 5 years	21	2.7	3.0
6-9 years	63	8.2	8.9
10-13 years	225	29.4	31.8
14-17 years	241	31.5	34.0
> 17 years	158	20.7	22.3
Total	708	92.5	100.0
Missing	57	7.5	
Total	765	100.0	

3.2 Instruments

The study is based on VOC questionnaire and two additional scales Brief Sense of Community Scale, and Multidimensional Scale of Perceived Social Support, the latter used for testing HP3 (high-order function) and HP4 (holistic valence).

The VOC questionnaire has been developed through numerous preliminary context-specific analyses performed over the last two decades. First versions of the questionnaire and of its rationale have been developed by Carli and Paniccia (1999b) in the context of the cultural analysis of organizations. Following studies expanded the domains of application school (Carli and Paniccia, 2001; Guidi and Salvatore, 2013); higher education (Venuleo et al., 2016); health (Venezia, 2016); local community (Mannarini et al., 2012); local development (Carli and Pagano, 2008); the psychologist as professional (Carli and

Salvatore, 2001; Carli et al., 2004); urban mobility (Carli and Paniccia, 1999a); risks in the workplace (Carli et al., 2013); gambling (Venuleo et al., 2016).

VOC is composed of 68 items, each of them asking the respondent to evaluate/position one's self with respect to an aspect/object/quality of the social and personal experience. More particularly, the questionnaire is composed of two parts. The first part concerns views/evaluations of aspects of the place where the respondent lives (e.g. the reliability of agencies and services; quality of life in the coming years). The second part concerns views/evaluation of aspects concerning the broader social context and life in general (e.g. system of values; people's capacity for change; what constitutes success in life; what behaviour depends on).

Taken as a whole, the items concern 5 main domains of meaning: Universalism (e.g. Level of disagreement/agreement with the statement "Immigrants are a source of cultural enrichment"), Trust (e.g. Level of reliability of Health Care Service); Fatalism/Agency (e.g. Level of [dis]agreement with the statement: "Trying hard is useless because you cannot affect what will be"), Values (e.g. "In your opinion, to succeed in life, how important is: Have few scruples"), Primary Bond (e.g. Level of agreement with the statement: "These days a person doesn't really know whom he can count on").

For the purpose of analysis, the questionnaire can be integrated with a set of indicators aimed at collecting information on the respondents' background (e.g. socio-demographic characteristics; civil status; size of the nuclear family; place of birth and current location; self-evaluation of current health; involvement in volunteer community activities). However, these variables are not used for the detection of the generalized affect-laden meanings.

In accordance with the framework specified above, questionnaire items have been designed to trigger the activation of generalized affect-laden meanings that then channel respondents' interpreting the objects of the micro- and macro-social environment (e.g. evaluation of the place where the person lives; level of trustworthiness of social structures). To this end, the survey items have 4 characteristics that enable the detection of generalized affect-laden meanings. First, items are spread over a plurality of levels and objects of experience (e.g. institutions; quality of life; sense of empowerment; future; rules; interpersonal bonds); in so doing they allow us to detect the connections between elements of different domain of experience, which are considered the expression of the holistic valence of the generalized affect-laden meanings. Second, most of the items are formulated with generic reference points (e.g. your future; your life). This is because the less specifically the object is defined, the greater the probability that it will work as a projective stimulus triggering affective modality of interpretation.

Third, items are designed to go beyond the mere description of states of things. Rather, items are invitations to assume a position with respect to pressing issues, such as identity-sensitive matters, which are open to contrasting ideological and value-laden therefore affect-laden - options. Fourth, items are associated with response modes that force the respondent to further take a stance with respect to contrasting positions. More particularly, items present two types of response mode. Some items ask to be answered in terms of a four-point Likert scale without intermediate alternatives. Other items ask respondent to choose one (or more) among a set of contrasting alternatives. Both

the absence of intermediate alternative and the request to choose among contrasting alternatives provides the function of forcing' the responses towards oppositional modes of response (Salvatore et al, 2017; Salvatore and Venuleo, 2013).

It is worth highlight a core specificity of how items are viewed within the VOC framework, because of the fact that it has a relevant implication for the procedure of analysis. In fact, by reason of their face validity, most VOC items are proposed in terms of Likert scale (e.g. "strongly disagree", "quite disagree", "quite agree", "strongly agree"); yet, the VOC does not assume that points of the Likert scales are equidistant and, above all, associated with each other linearly.

Indeed, due to the VOC's aim - the detection of generalized affect-laden meanings - any modality is viewed as an alleged way of marking a specific affective meaning/positioning. As such, differences among modalities cannot be considered to be similar among them e.g. the distance between "strongly disagree" and "quite disagree" has to be considered as a potential marker of the difference between two psychologically even very different affective meanings (e.g. refuse vs critical engagement); Therefore, the distance among them cannot be assumed to be the same as the distance between "quite disagree" and "quite agree". To use an analogy, this is the same to say that the distance between "to love her/him just a bit" and to hate her/him just a bit" cannot be assumed the same as the distance between "to love her/him strongly" and "to love her/him just a bit".

More in general, in accordance with the VOC rationale i.e. the modalities are indicative of peculiar affective positions the relation among them cannot be assumed to consists of difference of degrees - or however only of this kind of difference; rather, they are considered as (at least potentially) differences of states. For instance, to evaluate "fully unreliable" an institution is not just the half of considering it as "quite unreliable". In the former case, the respondent is assumed to be expressing a refuse, an act of deep distancing from the object; whereas in the latter case it is possible she is evaluating its performance; if it were so, the former modality would map the respondent's affective position (refuse), whereas in the latter case it would map the performance of the object. And this would mean that the modalities would have different contents and therefore they would not be associated linearly. Incidentally, the non-linearity among categories was shown by several studies based on preliminary version of VOC.

For instance, Venuleo et al. (2016) found that the first factorial dimension extracted by their dataset differentiated a set of extreme responses from a set of intermediate responses, regardless their content i.e. "strongly disagree" and "strongly agree" modalities proved to be associated with one polarity, whereas intermediate modalities were associated with the other polarity (this dimension proved to play a major role in differentiating drop-out students from not drop-out students).

The non-linear relation among modalities of the same scale is consistent with the a-semantic, affective level of meaning the VOC questionnaire is designed to detect. Accordingly, VOC adopts a multidimensional procedure of analysis (Multiple Correspondence Analysis, see below) that, differently from the factorial analysis, assumes the modalities as independent with each other. In so doing, it leaves open the room to the event that the modalities can be associated with each other nonlinearly, as result of their being the markers of different affective states. Needless to say the fact that MCA considers

each modality as independent reduces data's level of information, given that it means to get rid to the interval/order-level of the scale. Yet just in so doing, the MCA enables to analyse potential relations among modalities that go beyond their being expression of different degree of the same dimension (for a detailed discussion on this point, see Escofier and Pagès (2008), Pagès (2016) and Blasius and Thiessen (2001). For instance, Venuleo et al. (2016) found that the first factorial dimension extracted by their dataset differentiated a set of extreme responses from a set of intermediate responses, regardless their content i.e. "strongly disagree" and "strongly agree" modalities proved to be associated with one polarity, whereas intermediate modalities were associated with the other polarity (this dimension proved to play a major role in differentiating drop-out students from not drop-out students).

The MCA identifies the main factorial dimensions that account for variability in response patterns in the VOC. Each dimension detects a profile of co-occurring responses - i.e. the tendency to respond with the modality m to the item A, the modality n to the item B, the modality u to the item C and so forth. Insofar as the co-occurring responses (m, n, u..) have no reciprocal semantic linkage, they can be interpreted as the marker of a generalized affect-laden meaning.

The Multiple Correspondence Analysis is applied to the sample's whole response matrix i.e. the matrix whose ij-th cell holds the response of the i-th respondent to the j-th item. It is worth highlighting that the matrix so defined where all items were inserted regardless their semantic content - is consistent with the assumption of the a-semantic and holistic valence of the dimensions of meaning that are expected to be obtained by such a procedure of analysis.

Two other scales were used for further defining lower level constructs. Each was associated with a certain domain of reference that have been inserted in the causal model (cf. below, Data Analysis, step 3) aimed at testing the hypotheses that the generalized meanings have effect on lower level meaning (HP3) concerning a plurality of domains of reference (HP4):

1. The *Multidimensional Scale of Perceived Social Support* (MSPSS; Prezza and Principato, 2002; Zimet et al., 1988) is a measure designed to assess the perception of social support. Social support has received great attention in the context of health, where robust relationships were found between social and emotional support from others and health (Reblin and Uchino, 2008), stress and coping research (Cohen and Wills, 1985), and recently also in the socio-political sphere to explain activists' retention (Mannarini and Talò, 2011). MPSS is a 12-item scale, which gives an overall measure of social support as well as tapping into the structure of that support (family, friends and a significant other). Overall perceived social support scale and its subscales showed good reliability (Zimet et al. (1988) found that the Cronbach's alpha for the overall MSPSS was .88). For our purpose we used a 8-item version including only items referred to family and friends.

2. The *Brief Sense of Community Scale* (BSCS, Peterson et al., 2008) is designed to measure the feelings of being part of a meaningful and supportive community worth

of investment. Main correlates of sense of community are a variety of participatory behaviours (Talò et al., 2014), individual and social well-being (Mak et al., 2009; Obst and Stafurik, 2010), life satisfaction (Hombrados-Mendieta et al., 2013) and quality of life (Gattino et al., 2013; Hombrados Mendieta et al., 2009). BSCS, composed of 8 items, measures one second-order factor (overall sense of community) and four first-order factors. First-order factors correspond to the four components posited by McMillan and Chavis (1986) theoretical model: the sense of emotional connection to the community members (shared emotional connection), feelings of belonging (membership), perceptions of being fulfilled in one's needs (need fulfillment), and the belief of being able to influence the community and to be influenced by it (mutual influence). The overall BSCS scale and its subscales showed good reliability and were found to be correlated with community participation, psychological empowerment, mental health, and depression (Peterson et al. (2008) found that the Cronbach's alpha for the overall BSCS was .92).

As one can see, these two scales refer to different domains: the BSCS measures one's experience as member of a social-communitarian network (henceforth: Community); the MSPSS measures the experience of primary bonds with close and significant others (relatives, close friends; henceforth: Primary Bond). Moreover, one can see how these domains, though interrelated, are separate. Indeed, as to the comparison between Community and Primary Bond, though both refer to the relational experience, they concern two different dimensions of the social experience - the whole social group as an entity in itself versus the engagement and interaction with specific close persons the respondent shares a relevant amount of time.

3.3 Data analysis

In order to enable hypotheses to be tested, the following procedure of data analysis was carried out. Preliminarily, the VOC items' main domains of reference were identified through content analysis Then, the VOC's alleged generalized meanings were detected by means of the pattern recognition procedure, based on Multiple Correspondence Analysis. Finally, the causative relationship between the alleged generalized affect-laden meanings and the domains were esteemed by means of the PLS Path Modelling.

3.3.1 Step 1. Multiple Correspondence Analysis

In order to test the hypotheses concerning the a-semantic, affect-laden valence and plurality of the meanings detected by VOC (HP1 and HP2 and HP5), the multidimensional procedure of data analysis (Multiple Correspondence Analysis, MCA) suggested by the VOC rationale was applied. It has to be noted that the adoption of an explorative technique as MCA, rather than the standard confirmatory approach, is due to the specificity of the VOC instrument into account (see section Instruments). Indeed, the MCA is the procedure that the VOC rationale established to be used for analysing the response dataset in order to assume the independency among modalities. Thus, the adoption of

the MCA in the frame of the validation study is the way of focusing the study on the actual output of the VOC.

3.3.2 Step 2. VOC items' content analysis

This step was aimed at identifying the main domains VOC items are concerned with. The domains of reference so identified were then used as first-order latent variables in the Path Model built in the following step of analysis (see below, Step 3).

To this end, the following procedure was adopted. First, a procedure of consensual agreement among some of the authors (EC, VF, PG, SS) was carried out, aimed at identifying the main object/domain of reference that the content of each VOC item is concerned with. After the judges rated items independently, they identify and reassess items with divergent ratings/assigned domain. This first steps led to select a subset of items for which judges agreed the domain of reference each of them refer to. More particularly, three domains of references were identified: *i)* Territorial and macro social-context (henceforth: Context); *ii)* Sense of Agency (henceforth: Agency); *iii)* Meaning of success in one's life (henceforth: Success).

Second, the reliability of the content of items in accordance to these three domains of reference made by the first group of judges was confirmed by 5 independent and blind judges. To this end, independent and blind judges were provided with the subset of VOC items obtained from the previous step and asked to identify the main domain of reference of each of the items, where they chose among the three domains of reference emerged from the previous step. Only items for which at least 4 out 5 independent judges confirmed the evaluations of the first judges were kept for the analysis. Table 2 reports the 3 domains of references identified and the VOC items associated with them (the whole questionnaire is reported in Annex 1).

3.3.3 Step 3. PLS-PM modeling

Partial Least Squares Path Modeling (PLS-PM) with higher-order constructs was implemented in order to estimate the higher-order (i.e. HP 3) and holistic relationships between the generalized affect-laden meanings and the VOC items as well as the other scales (i.e. HP 4). The PLS-PM was chosen because it is the most suitable tool for the investigation of relations with a high level of abstraction (Nitti and Ciavolino, 2014, Ciavolino, 2012). Indeed, the specificity of PLS-PM is its flexibility, robustness and fewer demands concerning distributional assumptions and requirements for identification (Ciavolino and Al-Nasser, 2009; Lohmöller, 1989; Sarnacchiaro and D'Ambra, 2012; Ciavolino et al., 2015; Ciavolino and Nitti, 2013).

More specifically, PLS-PM is a non-parametric approach. Thus, thanks to it, we obtained two main advantages with respect to other SEM approach. First, we made this stage of analysis consistent with the previous one, based on MCA, which is a non-parametric technique too. Second, it is worth noting that PLS-PM is considered a soft modeling approach where no strong assumptions are required (with respect to the distributions, the sample size and the measurement scale). More specifically, the advantages

Table 2: VOC items domains of reference used in PLS-PM

VOC items	Main domain of reference
RELIABILITY-Public transport	
RELIABILITY-Health care services	
RELIABILITY-Police	
RELIABILITY-Schools	Context
RELIABILITY-Public Administration	
RELIABILITY-Companies	
HOW YOU WILL LIVE IN THE PLACE YOU LIVE IN NEXT 5 Ys	
AGREEMENT-Those who succeed in the life has luck on their side	
AGREEMENT-Trying hard is useless, because you cannot affect what will be	
AGREEMENT-My life is controlled by accidental happenings	Agency
AGREEMENT-My life is chiefly controlled by powerful others	
AGREEMENT-It is not possible at all to make any provision	
TO SUCCEED IN LIFE- Understanding the world	
TO SUCCEED IN LIFE- Acquiring knowledge	
TO SUCCEED IN LIFE- Adjusting to the main trends	
TO SUCCEED IN LIFE- Forming alliances with stronger people	Success
TO SUCCEED IN LIFE- Having a few scruples	
TO SUCCEED IN LIFE- Having a few scruples	
TO SUCCEED IN LIFE- Sharing	

of this non-parametric approach can be synthesized as follows. PLS-PM:

1. does not suffer from indeterminacy problems as SEM based on ML estimators;

2. does not assume normality of data - in our case this is a relevant aspect, due to the scales used, which are not considered coming from any probability distribution;

3. even if it does not require it, in the case of large size sample it provides consistent estimations;

4. it works well in case of multicollinearity, that is very common in case of variables underlying same concepts (latent variables).

The PLS-PM can be thought of as the analysis of two conceptually different models: *1) A structural (or inner) model* that specifies the causal relationships among Latent Variables (LVs), as posited by a given theory; *2) A measurement (or outer) model* that specifies the relationship of the Manifest Variables (MVs) with their (alleged) underlying LVs.

The current study adopts a development of the method designed for taking into account hierarchical patterns of latent variables, namely the interaction between higher and lower constructs - the so-called Hierarchical Component Model or Repeated Indicators Approach (RIA, Lohmöller, 1989). In the RIA, the manifest indicators, each measuring

rst-order LV, are simply repeated in order to represent the higher-order construct. Because of its simplicity, this approach is the most used by researchers who want to model higher-order constructs with PLS (Nitti and Ciavolino, 2014).

In the current study, each domain of reference represents one first-order Latent Variable; the alleged generalized affect-laden meaning represents the second-order Latent Variable. More specifically, the model considered 5 domains as first-order Latent Variables:

- 3 VOC items' domains of reference identified in the context of step 2 of analysisi.e. i) Context, ii) Agency; iii) Success;

- 2 additional domains of references, each of them corresponding to one of the scales used in the study: iv) Community Linkage, v) Primary Bond,

The latter two domains of references (i.e. domains iv-v) were added in order to extend the test of Hypotheses 3 (higher-order function) and 4 (holistic valence) beyond the boundary of the VOC items. Adding these two domains eliminates the possibility that findings could be interpreted as a methodological artefact derived from the inner organization of the questionnaire and/or the procedure of repeated indicators used in the context of the PLS.

Indeed, the estimation of the second-order Latent Variables uses all and only VOC items as Manifest Variables; the items of the other two scales [(iv) Sense of Community, (v) Scale of Perceived Social Support] were used as Manifest Variables for modelling only the corresponding first-order Latent Variable (i.e. Community and Primary Bond). This means that these Manifest Variables were not used in the measurement of the second-order Latent Variable.

Two further specifications are worth discussion

First, the PLS-PM is based on a subset of the VOC items (i.e. the one listed in Table 3). Indeed, we excluded from the analysis the items lacking a clear domain of reference as well as items having a dichotic structure (i.e. yes/no); the latter were removed because they do not fit the computational requirements of PLS modelling.

Second, despite the alleged plurality of generalized affect-laden meaning (cf. HP5), the PLS-PM took one second-order Latent Variable into account only. This is because this is the most consistent solution with respect to the computational constraints involved in the use of the Repeated Indicator Approach (RIA). According to this approach, the Manifest Variables are distinguished because of their semantic content at the level of measurement of the first-order Latent Variable, whereas they are considered together and without pre-hoc distinction at the repeated level of the measurement of the higher level; consequently, a single, global second-order construct comes to be measured.

Needless to say, this constraint means that the second-order Latent Variable esteemed by the PLS-PM and the factorial dimensions extracted from the Multiple Correspondence Analysis cannot be compared. Accordingly, we used the PLS-PM for testing only the
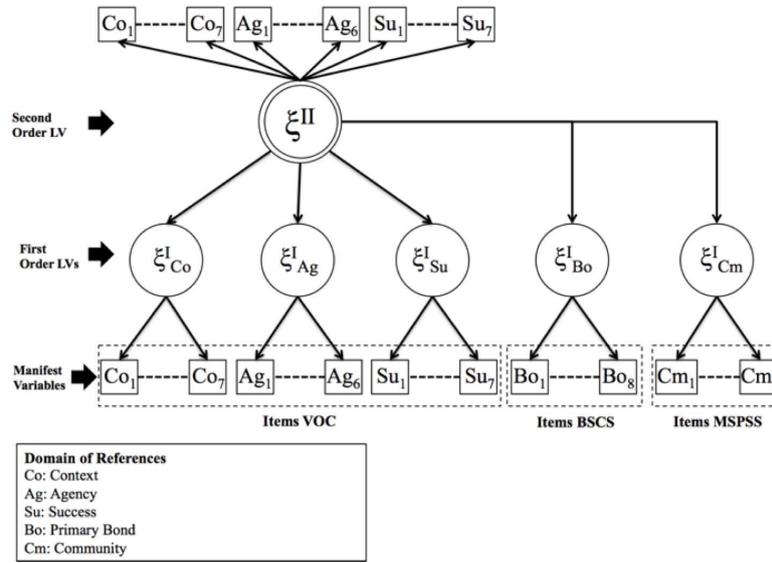
Figure 1: The structural higher-order path model

Hypotheses 3 and 4, that are independent from the content and the number of the second-order constructs; instead, they focus on the structural relation between meanings with lower and higher levels of generalization.

According to the theoretical model, the LVs ξ_1^I (Context), ξ_2^I (Agency), ξ_3^I, (Success), ξ_4^I (Community), ξ_5^I (Primary Bond) were considered as first order constructs. This assumption of independence was made because these constructs concern separate objects/domains of references. Consequently, in the first-order model, no causative relationships among the constructs were assumed, which limited the analysis to a descriptive calculation of the correlation (Pearson's coefficient) among them. The second-order construct (ξ^{II}) introduced is a dimension underlying the VOC first-order Latent Variables s, (ξ_1^I - ξ_3^I) and linked (in a "reflective" way, see appendix) with all five fist-order Latent Variables. Composite reliability (Chin, 1998) was used to assess the internal consistency of each block of MVs (it should be ¿ .70). Regarding the inner model, the coefficient of determination (R-square) of each dependent LV gives the local fit of the model. Goodness of Fit (GoF) was taken as a goodness of fit index of the overall model3. Furthermore, for assessing the significance of path coefficients, t-values have been computed by bootstrapping (200 samples; t-values > 1.96 significant at the .01 level).

4 Results

4.1 Step 1. Multiple Correspondence Analysis

Table 3a-c reports the 3 main factorial dimensions extracted by the Multiple Correspondence Analysis, showing the only the first five negative and positive coordinates (for all the items, with coordinates≥2, see Annex 2). These factorial dimensions correspond to

41.13% of the whole inertia (respectively 17.87%, 14.9% 8.35%; The inertia associated with each factor was calculated in accordance to the Benzecr's simplified formula of revaluation $[(\lambda^* = \lambda^2)$ - where λ stands for the factorial dimension's eigenvalue and λ^* is the re-evaluated eigenvalue].

Table 3: VOC items domains of reference used in PLS-PM

(a) VOC items domains of reference used in PLS-PM

Id	Items	Modalities	Coordinates
F1.1	AGREEM.-My life is determined by my own actions	quite agree	-4.9999
F1.2	AGREEM.-Nowadays a person has to live pretty much for today	quite agree	-4.8693
F1.3	AGREEM.-There's little use in writing to public officials	quite agree	-4.8586
F1.4	AGREEM.-Sometimes to break the rules to help one's loved	quite agree	-4.8247
F1.5	RELIABILITY-Police	quite	-4.4571
	CENTRAL ZONE		
F1.76	AGREEM.-My life is determined by my own actions	strongly agree	4.5849
F1.77	RELIABILITY-Schools	not at all	4.6264
F1.78	AGREEM.-My life is controlled by accidental happenings	strongly disagree	4.6724
F1.79	AGREEM.-It is useless to bustle. since you cannot affect	strongly disagree	4.7327
F1.80	AGREEM.- The lot of the average man is getting worse	strongly disagree	4.8250

(b) VOC items domains of reference used in PLS-PM

Id	Items	Modalities	Coordinates
F2.1	RELIABILITY-Schools	not at all	-5.1219
F2.2	AGREEM.-It's hardly fair to bring children into the world	strongly agree	-4.7858
F2.3	RELIABILITY-Health care services	quite	-4.6853
F2.4	RELIABILITY-Health care services	not at all	-4.6163
F2.5	TO SUCCEED IN LIFE-Sharing	not at all	-4.3059
	CENTRAL ZONE		
F2.66	RELIABILITY-Police	very	4.8395
F2.67	RELIABILITY-Schools	very	5.1894
F2.68	RELIABILITY-Public Administration	very	6.2237
F2.69	RELIABILITY-Companies	very	6.2726
F2.70	RELIABILITY-Health care services	very	7.1483

(c) VOC items domains of reference used in PLS-PM

Id	Items	Modalities	Coordinates
F3.1	AGREEM.-Nowadays a person has to live pretty much for today	quite disagree	-5.4627
F3.2	HOW YOU WILL LIVE IN THE PLACE YOU LIVE IN NEXT 5 Ys	neither worse nor be	-4.9617
F3.3	AGREEM.-My life is chiefly controlled by powerful others	quite disagree	-4.7646
F3.4	AGREEM.-It is not possible at all to make any provision	strongly disagree	-3.3711
F3.5	WELLBEING IS-Health	Yes	-2.9589
	CENTRAL ZONE		
F3.50	AGREEM.-It is useless to bustle. since you cannot affect	quite agree	4.8102
F3.51	AGREEM.-My life is controlled by accidental happenings	strongly agree	5.4002
F3.52	TO SUCCEED IN LIFE-Forming alliances with stronger people	very	5.9755
F3.53	AGREEM.-The lot of the average man is getting worse	strongly agree	6.0665
F3.54	AGREEM.-My life is chiefly controlled by powerful others	strongly agree	6.1631

4.2 Step 2. PLS Path Modeling

In what follows the main outputs of the PLS-PM are reported. First, the measurement model is presented, then the structural model.

Measurement models

As preliminary analysis, the inner consistency of the constructs was evaluated. Table 5 reports the alpha coefficients so obtained. Coefficients vary from 0.696 (Success) to 0.955 (Primary Bond), showing how both first-order Latent Variables and second-order Latent Variable have at least an acceptable inner consistency.

Table 5: Alpha coefficients of first-order and second-order Latent Variables

	MVs	C. alpha	DG. rho	eig. 1st	eig. 2nd
LV1	19	0.740	0.766	3.570	2.789
Context	7	0.774	0.839	3.058	0.923
Agency	5	0.749	0.833	2.511	0.810
Success	7	0.696	0.792	2.512	1.382
Primary Bond	8	0.955	0.962	6.110	0.412
Community	8	0.918	0.933	5.124	0.888

The weights of the first-order Latent Variable measurement can be viewed as the estimate of the contribution of the Manifest Variable to the measurement of the Latent Variable. For all 5 first-order Latent Variables, the Manifest Variables show weights being not below 0.5, all are within the bootstrap confidence intervals (95%), therefore they can be considered statistically significant. Moreover, it is worth noting that in all cases the original weights values are closely matched with those obtained from the bootstrap procedure, which shows that the estimates are stable over the dataset (cf. Table A, Annex 3). As to the measurement of the second-order Latent Variable, one can observe that all Manifest Variables in analysis showed significant weights, ranging from 0.176 (AGREEMENT-Trying hard is useless, because you cannot affect what will be) to 0.612 (RELIABILITY-Public Administration) (cf. Table B, Annex 3).

Table 6 reports the Pearson's coefficients of correlation between the first-order Latent Variables. The second-order Latent Variable correlates highly and significantly with all first-order Latent Variables from $r = .794$ (with Context) to $r = -328$ (with Primary Bond). Also 8 out 10 correlations between first-order Latent Variables are significant, yet only in 2 cases (Context vs Community and Bond vs Community) r is over .300.

Finally, table 7 reports the Pearson's coefficients of correlation between the second order Latent Variable and the three factorial dimensions obtained by the MCA performed at the first step.

Table 6: Pearson's coefficients of correlation between first Latent Variables

	Agency	Success	Primary Bond	Community
Context	0.007	0.258**	0.283**	0.524**
Agency		0.145**	-0.044	0.073*
Success			0.299**	0.233**
Primary Bond				0.336**

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 7: Pearson's coefficients of correlation between second-order Latent Variable and MCA factorial dimensions

	MCA FACTOR 1	MCA FACTOR 2	MCA FACTOR 3
Second order Latent Variable	0.423**	0.789**	0.384**

** Correlation is significant at the 0.01 level (2-tailed).

Structural model

Reliable and valid outer model estimations permit an evaluation of the inner path model estimates. The essential criteria for this assessment are the coefficient of determination (R^2) of Latent Variables and the path coefficients. In order to determine the R^2 values' confidence intervals a bootstrap procedure was used (Tenenhaus and Vinzi, 2005). Falk and Miller (1992) recommended the R2 for variable's variance explained by the independent variables has to be greater than 0.10. An R^2 greater than 0.10 ensures that the variance explained by the endogenous variables has practical as well as statistical significance.

As to the 5 first-order Latent Variables, the observed R^2 value were found to be 0.631; 0.141; 0.515; 0.108; and 0.244, respectively for Context, Agency, Success, Primary Bond, and Community (cf. Table 8). Thus, for all first-order Latent Variables the original value is quite higher than the recommended value (0.10) with the exception of Primary Bond, whose R^2 is however above the threshold. Moreover, in all cases the original values can be seen as reliable because the results are close to those obtained from bootstrapping the confidence intervals.

The path coefficient estimates the effect of the second-order Latent Variable on the first-order Latent Variables. Due to the fact that the path coefficient is standardized, it can be interpreted as if were an r coefficient. Boot strapping was also use to determine the path coefficients' confidence intervals in this instance (Tenenhaus and Vinzi, 2005).

Table 9 reports the path coefficients estimating the causative linkages between the second-order Latent Variables and the first-order Latent Variables. Original coefficients

Table 8: R^2 of the first-order Latent Variable

	Original	Mean.Boot	Std.Error	perc.025	perc.975
Context	0.631	0.631	0.032	0.562	0.689
Agency	0.141	0.149	0.043	0.067	0.24
Success	0.515	0.514	0.041	0.432	0.597
Primary Bond	0.108	0.109	0.023	0.065	0.148
Community	0.244	0.247	0.032	0.179	0.309

are very close to those obtained from the bootstrapping procedure. The size of the path coefficients is rather high in the case of Context (0.794) and Success (0.718); however, also the other path coefficients (Community [0.493], Agency [0.375] and Primary Bond [0.328]) are quite strong; all of them fall within the confidence intervals.

Table 9: Path coefficients of the inner model

Second Order LV → First Order LV	Original	Mean.Boot	Std.Error	perc.025	perc.975
LV2 → Context	0.794	0.794	0.02	0.75	0.83
LV2 → Agency	0.375	0.377	0.083	0.256	0.489
LV2 → Success	0.718	0.716	0.029	0.657	0.773
LV2 → Primary Bond	0.328	0.328	0.035	0.255	0.385
LV2 → Community	0.493	0.496	0.033	0.423	0.556

5 Discussion

Step 1. The Multiple Correspondence Analysis

Preliminarily, it is worth noting that the cumulative inertia explained by the three factorial dimensions extracted by the Multiple Correspondence Analysis is notably high (41.13%). This datum suggests that these three dimensions are able to map in a synthetic way a large part of the variability underling the sample's responses.

And this is consistent with the VOC theoretical assumption of the relevant role played by embodied generalized meanings underling the way of answering to the questionnaire as well as the methodological assumption that such dimensions have to be detected by means of an abductive process based on a procedure of pattern recognition (see section VOC rationale). The analysis of the items associated with the three factorial dimensions leads to the following interpretations of the latter:

- *Factorial dimension 1*: MODE OF EXPERIENCE (moderation vs. reactivity).

One polarity of this dimension is characterized by intermediate response modalities. Responses grouped on the polarity can even have the opposite content and/or valence [F1.20; F1.21; F1.25; F1.26] [here and henceforth alphanumeric strings refers to the table 3a-c items]. Accordingly, one is led to interpret this polarity as the marker of a mode of responding, therefore of perceiving experience, characterized by an attitude of moderation, reflected in the tendency to modulate judgments and positions toward objects. The other polarity is associated with response modalities adopting extreme choices. Also in this case the content of the aggregate response is not consistent [F1.58; F1.76; F1.60; F1.75], in some cases is even contradictory [F1.40; F1.52; F1.43]. Accordingly, this polarity can be interpreted in terms of the extremism of the response modality, which seems to reflect a reactive attitude towards experience, regardless of its positive or negative quality (for a similar pattern of responses and similar way of interpreting them, see Venuleo et al., 2016). The label attributed to the factorial dimension reflects such a reading of it.

- *Factorial dimension 2*: CONNOTATION OF THE WORLD (foe vs. friend). This factorial dimension is characterized by the opposition between two generalized ways of connoting the world as a whole. On the one hand, a fully negative connotation qualifying the world as unfair, meaningless, unreliable - life is getting worse [F2.21], no chance to think of the future [F2.29] the latter is expected to go far worse [F2.17]; no chance to cope with problems [F2.14]; agencies and services are highly unreliable [F2.2; F2.4; F2.7; F2.11; however, F2.3]; people are unreliable too [F2.18]; rules do not count [F2.12]. On the other hand, a fully positive connotation qualifying the world as a fine, trustworthy, affordable object to engage with - Trust in the future [F2.47; F2.53; F2.58]; there is room for pursuing one's projects [F2.43]; Issues can be faced [F2.4; F2.42]; people [F2.56], Agencies [F2.64; F2.66; F2.67; F2.68; F2.69; F2.70] and rules [F2.55] are resources on which to rely. This enables to have an open attitude towards one's agency [F2.41, F2.46; F.2.52] as well as towards otherness [F2.50]. Accordingly, we interpret this factorial dimension as a the marker of a basic connotation of the world in terms of the opposition foe/friend.

- *Factorial dimension 3*: LOCUS OF CONTROL (agency vs. agencies). On a polarity of this factorial dimensions one finds response modalities valorising civic values and commitment on social life [F3.10; F3.16] as well as rejection of power [F3.3], conformism [F3.13] and opportunism [F3.20]. On the opposite polarity one finds response modalities that foreground lack of agency [F3.38], fatalism [F3.49], acceptance of given circumstances [F3.54], together with the confidence with the fact that things will get better [F3.35; F3.36], evidently as a result of the quality of the context and rules, which one has to follow and to entrust of [F3.34]. In sum, the polarities characterizing this factorial dimension lead it to be interpreted as the marker of a meaning consisting of the opposition between two views of where the control is lied as depending on one's agency and commitment versus depending on the supporting capacity of the system/context (institutions, agencies).

Take as a whole, the output of the Multiple Correspondence Analysis results to be

consistent with Hypotheses 1, Hypotheses 2 and Hypothesis 5. First, the factorial dimensions obtained by the Multiple Correspondence Analysis are composed by patterns of items whose combination is not justified by a strictly semantic standpoint (which confirms Hypothesis 1). On the other hand, this does not mean that the factorial dimensions are void of meaning rather, their meaning is emotional in character, namely reflecting the intra-class affective similarity within each profile of responses (as expected by Hypothesis 2). In the case of the first factorial dimension, each polarity of the first dimension comprises responses that are contradictory with each other in their semantic content, yet are similar in their intensity (intermediate vs extreme).

In the case of the second factorial dimension, responses are similar in regard to basic affective connotation negative (world as foe) vs positive (world as friend); the sharing of such a connotation links responses whose co-occurrence finds no semantic justification e.g. the fact that all agencies (public administration, school, health services) are considered reliable (or not reliable) makes it difficult to consider these to reflect an analytic, rational-based judgment. In the same vein, there is no semantic linkage between for instance - this global trust in agencies, trustworthiness in people, way of seeing immigrants.

Again, it is interesting to note how the set of responses concerning having success in life are distributed on both polarities homogeneously with only one exception (item F2.34 "To succeed in life: Acquiring knowledge" "quite") negative modalities that indicate inability to have success (i.e. modalities: not at all, not very) are all on the polarity foe, whereas positive modalities (i.e. quite, very) are all on the polarity friend. Thus, the two profiles of responses do not seem to concern the functional evaluation of the way of having success; rather, they seem to express the basic feeling of being or not being able to deal with life, namely to be in relation with a world providing such a chance or not.

The third factorial dimension shows a similar pattern; indeed, also in this case one can see how there is no necessary semantic linkage between responses associated with the same polarity e.g. to conceive the wellbeing as having good health and to disagree with the statements as "Nowadays a person has to live pretty much for today" and "my life is chiefly controlled by powerful others" as well as with the trust on people (cf. F3.6 and F3.7); similarly, there is no semantic similarity between the view of one's life as chiefly controlled by powerful others (F3.54), the idea that the lot of average man is getting worse (F3.53) and the idea that people are unable to change, just to take few examples. On the other hand, also in the case of the third factorial dimension, the lack of semantic linkage does not mean no linkage; indeed, on both polarities responses seem to be the expression of a similar basic feeling the trust in one's agency and the sense of being dependent on the context, respectively.

Finally, the output of the Multiple Correspondence Analysis more particularly the fact that each of the three main factorial dimensions is associated with a relevant proportion of inertia (41.3%) and that the factorial dimensions have specific content, being different with each other - is consistent with the Hypothesis 5, namely with the expectation that the system of generalized meaning that VOC is able to map is plural.

Step 2. Partial Least Squares Path Modeling

Several important findings come from the the PLS-PM analysis. First, the parameters associated with the measurement model inner consistency (cf. Table A, Annex 3) and weights coefficients (cf. Table B, Annex 3) - confirm that the first-order Latent Variable defined in terms of the items' domain of reference were detected in a reliable way. This confirmed the qualitative interpretation of the domain of references obtained by the content analysis performed by raters. The same can be said for the second-order Latent Variable.

Second, in the strong majority of cases, the relation among the first-order constructs (Context, Agency, Success, Primary Bond and Community), shows no or very weak relationships among the domains. Indeed, only in 2 out 10 cases the correlation are higher than r=.300 (cf. Table 5; the fact that some low correlations are significant likely reflects the high power of the test, due to the large sample size). At a first glance, these data could seem critical for the reliability of the PLS-Path Modelling, that assumes that first-latent variables are correlated with each other for the existence of the second-order variable. On the other hand, it has been noted that the measurement model comprises only 3 first order constructs (Context, Agency, Success) and that one of them (Success) correlates with both the others. This pattern indicates that there is a ground for the second order constructs, though not very strong, given the multidimensionality of data.

Third, the model of measurement of the second-order Latent Variable confirms the MCA output, and in so doing provides further evidence to support Hypotheses 1 and 2 indeed, all items introduced in the model of measurement contribute to the measurement of the second-order Latent Variable, regardless their semantic and functional content (cf. Table 6). Accordingly, one can consider this second order Latent Variable to be the marker of a generalized affect-laden meaning.

This conclusion is supported by correlations between the second-order Latent Variable and the three factorial dimensions extracted by the Multiple Correspondence Analysis all three correlations are high, with that concerning the second factorial dimension being very high ($r = .789$; cf. Table 8). According to its measurement, the second-order Latent Variable can be viewed as concerning the basic positive view of the world (as showed by the items 1-7) involving, on the one hand, the trust in one's capacity of having success in life (cf. items 13-19) as well as the trust and dependency on attitude to assume a position of dependency on the context/own community (items 8-12).

From a complementary standpoint, the high correlation between the second order factor and the MCA factor 2 provides a further, relevant evidence in support of the reliability of the former. Finally, and mainly, the structural model resulted is consistent with expectation reported in Hypotheses 3 and 4. Indeed, both the global goodness of the model (R^2; cf. Table 9) and the second-order Latent Variable's path coefficients (cf. Table 10) show the latter plays a causative role - marked or even highly marked (as in the case of Context and Success, that show path coefficients higher than .700) - with respect to the first-order Latent Variables (hypothesis 3 regulative function of the generalized affect-laden meaning).

From a complementary standpoint, such regulative function spreads over all first-

order constructs, being transversal to their domains of reference, as expected by the Hypothesis 4 (holist valence). The latter result is even more intriguing in light of the weak correlations among the first-order constructs (see above and table 5) - thus, if one reads these two results together, they suggest that even if the first-order constructs trend to be independent or weakly related - with each other, however they reflect the homogenizing action of a singular second-order latent variable.

6 Conclusion

This paper has reported findings of the validation study of the VOC questionnaire. VOC is a tool designed for mapping the latent generalized affect-laden meaning assumed by Semiotic Cultural Psychology to ground the way people feel, think and act.

The study addressed the construct validity of the instrument, namely the consistency between its output and the theoretical framework it is based on. More particularly, the current study focused on the fundamental assumption according to which the profiles of responses to the VOC questionnaire as they are modelled by means of a procedure of multidimensional analysis are the marker of latent dimensions of meanings of generalized, affect-laden nature. In order to test such an assumption empirically, it was translated in 5 operative hypotheses: the VOC questionnaire should detect asemantic (HP1) and affective (HP2) content of the meaning, and this meaning should play a regulative function over less generalized meanings (HP3) concerning the whole field of experience (HP4). Finally, according to the theory, it has been hypothesized that the level of meaning the VOC questionnaire is concerned with is composed of a plurality of dimensions (HP5).

In order to test these hypotheses, a strategy of analysis combining a multidimensional procedure and PLS-PM has been carried out on a stratified UK sample. The first procedure showed that the profiles of responses to the VOC items exhibit characteristics consistent with Hypotheses 1, 2 and 5, namely they can be viewed as asemantic, affective forms of meaning as well as the latter's plural nature. The PLS-PM demonstrated that these generalized, affect-laden dimensions of meaning effect less generalized meanings (HP3) in a transversal way, namely regardless the referential content of the latter (HP4).

In sum, taken as a whole, empirical findings have provided support for the VOC construct validity. As a valid instrument, VOC can provide a contribution both to the understanding of the cultural dynamics characterizing specific human groups - e.g. Salvatore et al. (submitted) used it for analysing the cultural milieus of 4 European countries- and to the empirical test of cultural psychology theory. More specifically, VOC questionnaire can contribute to deepen the comprehension of the interplay between persons and social environment along with diverse levels of increasing complexity, e.g. the primary bonds, communitarian networks and enlarged social context. Likewise several contextual theories, the paper posits that the experience of the socio-cultural world is significant to the individual mental processes. More importantly, it broadly accounts, both theoretically and empirically, for the way cultures orient such an experience not only in terms of the description of byproducts of the mental processes (e.g., opinions,

attitudes, and thoughts, etc.) but above all in terms of the analysis of the mediation of the affect-laden meanings that channel such processes. As a consequence, the VOC questionnaire opens up routes for further development in interconnection with several contextual theories such as, social representations theory (Bauer and Gaskell, 2008; see also Salvatore and Venuleo, 2013); cultural-historical activity theory (Cole et al., 1997), delta theory (Tharp, 2011), community psychology (Mannarini et al., 2017; Townley et al., 2011).

There are three main limitations to these findings. First, the PLS-PM used for testing hypothesis 3 and 4 used only a subset of VOC items, namely the items for which it was possible to identify their referential content reliably (by means of a procedure of inter-rater agreement). Second, the first-order constructs defined on the basis of the items' referential content resulted only in some cases fully independent with each other rather, in most cases they were somehow associated with each other. As consequence of that, the fact that the second-order generalized meaning measured by the PLS-PM showed a causative linkage on items, regardless the latter's referential content cannot be considered a definitive evidence, because it leaves open the alternative interpretation that this transversal effect could be somehow due to the similarity of the referential content rather than to the overarching effect of the affect-laden meaning. Finally, the analysis focused on the English version of the instrument, and while this is not a limit in itself, the VOC questionnaire is designed for allowing large-scale, cross-linguistic cultural analyses, and future work should focus on cross-linguistic validation.

Acknowledgement

Annexes

All the annexes are reported as supplementary files at the following EJASA web link: http://siba-ese.unile.it/index.php/ejasa/rt/suppFiles/18160/15516

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