WESTFÄLISCHE WILHELMS-UNIVERSITÄT MÜNSTER

Common structures of motives and values:

towards a taxonomic integration of two psychological constructs

Wolfgang Bilsky

1999

Korrespondenzadresse:
Wolfgang Bilsky, Differentielle Psychologie und Persönlichkeitspsychologie, Psychologisches Institut IV der Westfälischen Wilhelms-Universität Münster, Fliednerstr. 21, D-48149 Münster, Tel. 0251 / 83-34198; Fax. 0251 / 83-31343; e-mail: bilsky@psy.uni-muenster.de.

Common structures of motives and values:
towards a taxonomic integration of two psychological constructs[1]

Abstract

There has been a considerable lack of taxonomic clarity in motivational research until today. Stressing the conceptual similarities of motives and values, an attempt is made to outline a general and parsimonious taxonomy for classifying motives by borrowing from Schwartz' (1992) values theory. First, a definition of motives is provided in the form of a so-called mapping sentence. This type of definition builds on Guttman's facet approach (cf. Borg & Shye, 1995) and lends itself to the specification and testing of hypotheses on the structure of motives. The tenability of these hypotheses is then investigated in a second step by analysing six multitrait-multimethod matrices of motives from five different studies, using nonmetric multidimensional scaling procedures. Besides the distinction of stable motivational domains, the impact of assessment procedures on the differentiation of motives in terms of the often used implicit-explicit discrimination (McClelland, 1985) is of focal interest in these analyses. All in all, the results speak for the usefulness of the structural approach chosen. Implications of these findings are discussed with respect to future research.

Lack of taxonomic reasoning in motivational research

About a decade ago, Heckhausen (1989) argued that there had not been a satisfying solution for classifying motives in the past. As to my knowledge, this critique applies even today. At least to some degree, this lack of taxonomic clarity in motivational research may be attributable to the increasing specialisation and the ever growing literature within psychology. This development prevents researchers from taking note of scientific progress in domains which often only slightly deviate from their own focal interests. Thus, while Heckhausen (1989) has been referring to some early efforts of systematically categorising fundamental value orientations in anthropology, this line of reasoning has been without consequences for motivational research until today.

Aside from this insufficient coordination of research efforts, the lack of substantial correlations between different indicators claiming to cover the same motivational domain has caused additional irritation in the past. Thus, correlations between fantasy-based indicators of motivation (e.g., TAT) and self-report measures have consistently been low. Consequently, there has been a long debate on whether or not it is necessary to distinguish different kinds of motives, i.e., implicit from explicit motives, depending on the type of assessment instrument used. McClelland and his colleagues, for instance, contend that projective measures primarily cover affective aspects of the respective motivational domain while self-reports apply to the assessment of cognitive aspects only. In order not to confound both types they propose to refer to the first one as need indicators and to the second as value indicators (e.g., McClelland, 1985; McClelland, Koestner & Weinberger, 1989; Weinberger & McClelland, 1990).

Independently of this debate, however, the advocates of both fantasy-based and self-report measures use similar labels for the motivational phenomena under study. Furthermore, these labels overlap to a great extent with those used in values research (e.g., Rokeach, 1973; Schwartz, 1992). The striking semantic similarities in naming variables give rise to the

---

suspicion that this overlap cannot be reduced to the researchers' negligence or inability of labelling unequivocally the scientific constructs under consideration. Instead, they suggest some <u>systematic correspondence</u> between the respective constructs that needs further empirical and conceptual clarification.

Starting from these considerations, an attempt is made in this paper to outline a general and parsimonious taxonomy for classifying motives. This is accomplished by borrowing from <u>the theory on the structure of values</u> as developed and continuously refined by Schwartz during the past decade (Schwartz & Bilsky, 1987, 1990; Schwartz, 1992; Schwartz & Sagiv, 1995) and from <u>facet theory</u> specified by Louis Guttman (cf. Borg & Shye, 1995; Guttman & Greenbaum, 1998). Starting from the definition of values used by Schwartz and Bilsky (1987) in their early studies on the cross-cultural stability of values structure, the focal position of the motivational facet in defining values is emphasised. Next, the later on refined theory of Schwartz (1992) on the <u>structure of values</u> is sketched out. This revised conceptual approach lends itself to the specification of hypotheses on the structure of motives which are summarised in one comprehensive <u>mapping sentence</u>. The tenability of this formal definition is then investigated by (re-) analysing several multitrait-multimethod (MTMM) matrices of motive and value indicators. Finally, the implications of these analyses for the hypothesised taxonomy of motives are discussed.

Definition and structure of values

Starting from previous research on human values, Schwartz and Bilsky (1987) integrated central components commonly used in defining values into one comprehensive <u>mapping sentence</u>. Mapping sentences are applied in facet theory to define the phenomenon under study in a formal and unequivocal way. This is achieved by explicitly distinguishing conceptually relevant aspects of the phenomenon and by specifying their mutual interrelation (Levy, 1985; Borg & Shye, 1995). This formal definition is then used as a <u>structural hypothesis</u> that guides empirical analyses of data. Figure 1 gives the faceted definition used by Schwartz and Bilsky (1987). As can be seen, <u>motivational</u> aspects are of central importance to this definition.

Goal

A value is an individual's concept of a transsituational (terminal) goal that expresses
(instrumental)

Motivational Domain

Interests (enjoyment)
(individualistic) (achievement)
(collectivist) interests concerned with a motivational domain (self-direction) and
(both) (maturity)
(prosocial)
(security)
(restrictive conformity)

Range
(very important)
=> evaluated on a range of importance from (to) as a guiding principle in his/her life.
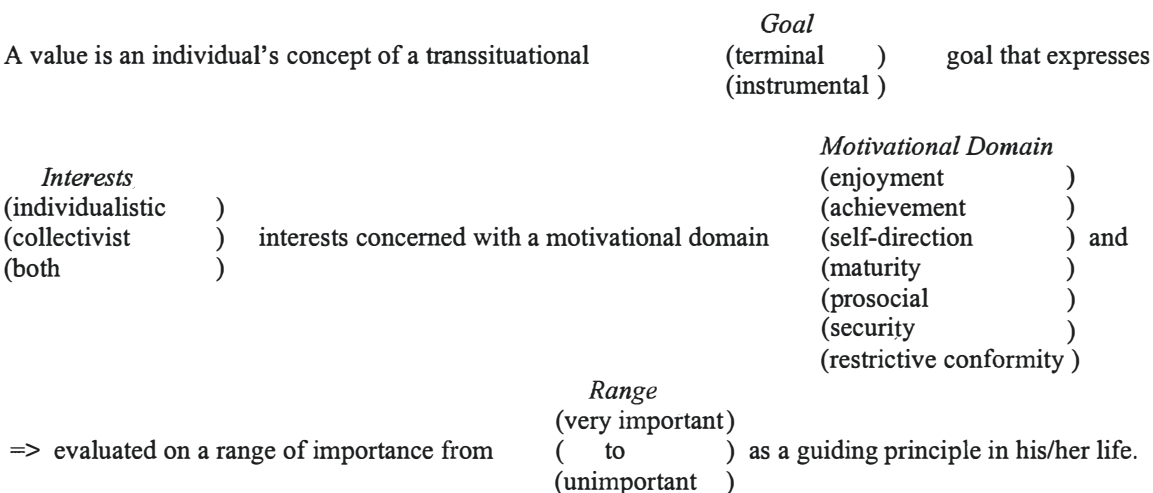(unimportant)

<u>Figure 1.</u>   Mapping sentence on the structure of human values (cf. Schwartz & Bilsky, 1987, p. 553).

Unlike many other approaches that rely on (confirmatory) factor analysis, the facet approach falls back on <u>nonmetric multidimensional scaling procedures</u> when investigating data struc-

tures (cf. Borg & Groenen, 1997). Using this type of procedures, cross-cultural analyses of value data from seven countries mainly confirmed the structural predictions made by the mapping sentence (Schwartz & Bilsky, 1987, 1990).

As outlined elsewhere, Schwartz and Bilsky (1987, p. 560) assumed from the beginning that the motivational domain specified in this definition needs completion by some additional elements. However, all of these initial analyses were based on data gathered with the Rokeach Value Survey (Rokeach, 1973). This instrument does not cover any motivational aspects beyond those specified in the above mapping sentence. Therefore, the necessity of taking additional motivational elements into consideration could not be tested empirically.

In the period following, Schwartz (1992) revised and amplified his values theory in the light of the aforementioned empirical findings and further conceptual analyses. In addition to its focus on motivational aspects, his refined model stresses another aspect of values structure - the fact that compatibilities and incompatibilities between value domains can be summarised by two essentially orthogonal dimensions. These dimensions were called 'openness to change vs. conservation' and 'self-enhancement vs. self-transcendence' as depicted in figure 2.
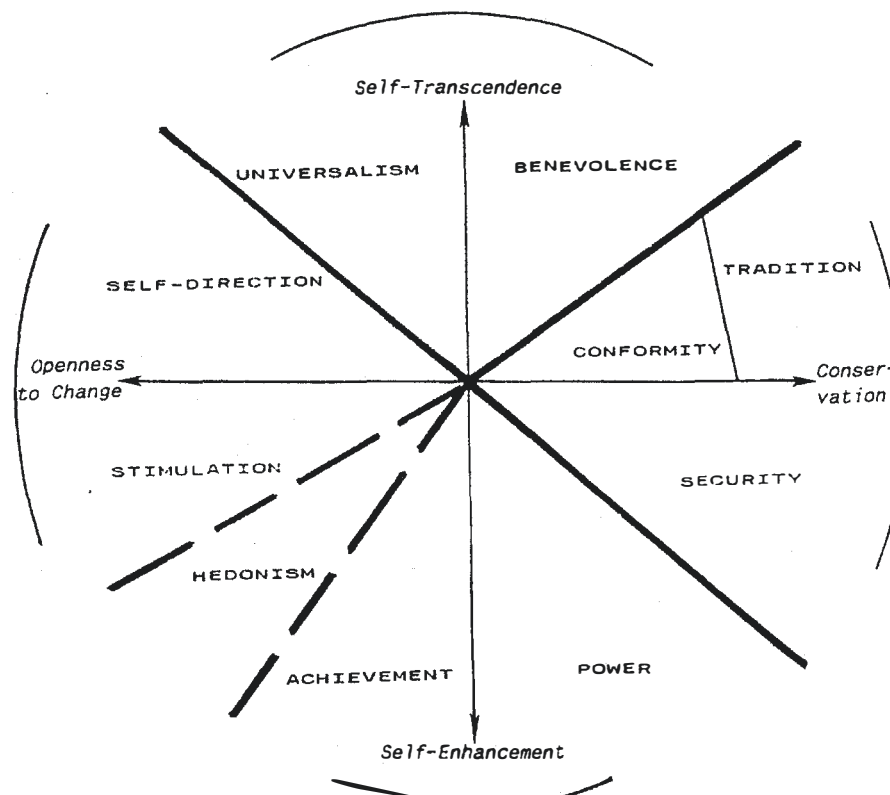

Figure 2.   Schwartz'revised model of values structure (cf. Bilsky & Schwartz, 1994, p. 168).

Since then, the Schwartz approach has been tested in some 80 countries, using data from about 200 different samples[2]. On the whole, analyses revealed both stable patterns of values structure and cultural specifics (cf. Schwartz & Sagiv, 1995). In addition to these results, systematic relations could be identified between values structure and conventional personality variables in a German study (Bilsky & Schwartz, 1994). Most interestingly, this latter study

---

[2] Personal communication, January 16, 1998

revealed some clear parallels between Schwartz basic value dimensions and Eysenck's (1954) political dimensions, i.e., 'radicalism vs. conservatism' and 'tough- vs. tendermindedness'.

Hypothesising a general structure of motives

The presumed motive-value relationship

When comparing the elements of the motivational domain as specified in the values theory (Schwartz & Bilsky, 1987; Schwartz, 1992) and constructs investigated in motivational research (Heckhausen, 1989), semantic overlap hits in the eye. Consequently, the question suggests itself whether the very structures found in values research might serve as a taxonomic frame for classifying motives. To put it positively, it is hypothesised that the same kind of structures found in values research shows up when analysing indicators of different motives. This assumption applies independently of the type of indicators used, i.e., affective or cognitive. The rationale of this hypothesis is that structure arises from the simultaneous inspection of all (dis-) similarities (e.g., correlations) between indicators of different motivational domains. Thus, it is the overall pattern of contingencies and not the single bivariate correlation which is of analytic interest here. Since McClelland postulates that the number of motives of the need type is smaller than that of the value type (e.g., Weinberger & McClelland, 1990), however, testing structural hypotheses should refer to the two basic dimensions identified by Schwartz (1992) and not to special categories of motivational content. While the overall pattern of motivational structure is expected to arise independently of the type of measurement, however, it should be possible to separate implicit from explicit measures in structural analyses, too.

A mapping sentence of motives

To put these hypotheses in terms of facet theory, three distinct facets are supposed to define a multidimensional space of motive structure: In accordance with the Schwartz model of values structure (1992), the content of every motive can be specified by means of two facets that represent the two basic dimensions distinguished by Schwartz. These facets are labelled 'openness to change' and 'focus of concern'; they range from change/openness to stability/constriction and from self-enhancing to self-transcendent, respectively. Quite parallel to the interrelation of values, the position of every single motive in the resulting two-dimensional structure is based on its compatibilities and incompatibilities with all other motives. It is defined by the Cartesian product of the elements of the two facets, i.e., by the joint position on the two underlying dimensions.

It should be noted that using two facets for specifying motivational content of indicators is equivalent to using one single facet in which the motivational domains, i.e. the elements of the facet, are listed explicitly, and spatial compatibilities and incompatibilities between these elements are specified by additional hypotheses; the latter approach was chosen in our early research on values structure (cf., Schwartz & Bilsky, 1987). In either case, expectations about the expected structure are the same.

With regard to assessment, it is assumed that the degree to which a subject is aware of the respective aim of measurement varies on a bipolar (continuous) dimension or facet. The poles of this facet are labelled 'implicit' and 'explicit' as in motivational research, thus indicating both the type of measurement (projective vs. self-report) and the extent to which measurement is accessible to conscious control.

These facets can now be integrated into one single mapping sentence that defines the multi-dimensional structure within which every motive can be located (figure 3). This mapping sentence serves as a structural hypothesis with respect to the <u>interrelation between different motives</u>.
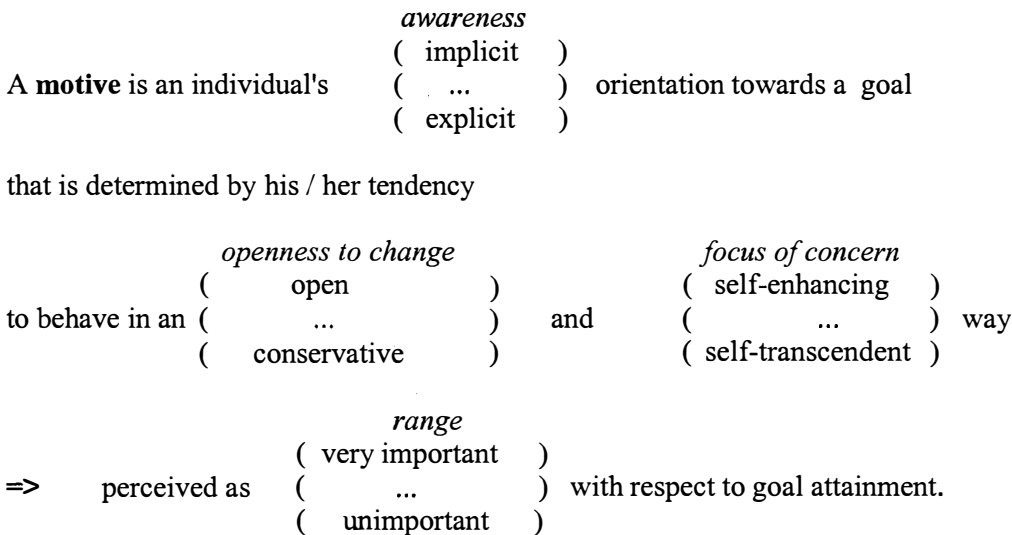
awareness

A **motive** is an individual's (implicit) orientation towards a goal
(...)
(explicit)

that is determined by his / her tendency

openness to change		*focus of concern*
(open)		(self-enhancing)
to behave in an (...)	and	(...) way
(conservative)		(self-transcendent)

range

(very important)
=> perceived as (...) with respect to goal attainment.
(unimportant)

<u>Figure 3.</u>   Mapping sentence on the structure of motives.

Structural hypotheses and partitioning of space

The validity of our structural hypothesis can be tested by analysing proximities of motivational indicators in multidimensional space. These proximities depict interrelations between all indicators at a time as summarised in a matrix of similarities (e.g., correlations). An adequate approach for conducting this type of data analysis is so-called '<u>Similarity Structure Analysis</u>' (SSA; cf. Borg & Lingoes, 1987).

Referring to our own research on values structure, indicators of <u>different motives</u> are supposed to split up into <u>wedgelike regions</u> on a two-dimensional projection according to their similarities. Here, similarity means correspondence with respect to the two basic dimensions of motivational content as depicted in figure 2 of the values structure. In other words, motives that are similar with respect to both 'openness to change' and 'focus of concern' are expected to appear in close spatial proximity and should show up in the same spatial region therefore. In contrast, motives that differ with respect to both dimensions should spread apart on the same projection of similarities. It should be noted that wedgelike regions normally result from one '<u>polar facet</u>' (cf., Levy, 1985); in the above mapping sentence this facet has been substituted by the Cartesian product of the elements of two one-dimensional ordered facets representing the two basic dimensions of the revised Schwartz model, i.e., motivational content.

As regards the implicit-explicit distinction which is reflected in different types of assessment, there are two possibilities for partitioning motivational indicators according to a third facet, labelled '<u>awareness</u>' in the mapping sentence: Provided that a two-dimensional representation of similarities is sufficient for partitioning data both with respect to content and assessment, this 'awareness' facet should play a '<u>modulating</u>' role. This means that assessment techniques ranging from implicit (projective techniques) to explicit (self-ratings) should form ordered partitions that resemble a set of concentric bands, superimposed on the polar (wedgelike)

partitioning of motivational content. The resulting configuration of overlapping wedgelike and concentric partitions with one common centre (like a dart board) is known as a 'radex' in literature (cf. Borg & Shye, 1995, p. 131).

In a three-dimensional projection of facets, however, awareness should play an 'axial' role so that the overall partitioning of space takes the form of a 'cylindrex' as shown in figure 4 (for detailed information about partitioning in multidimensional space, see Levy, 1985; Borg & Shye, 1995).
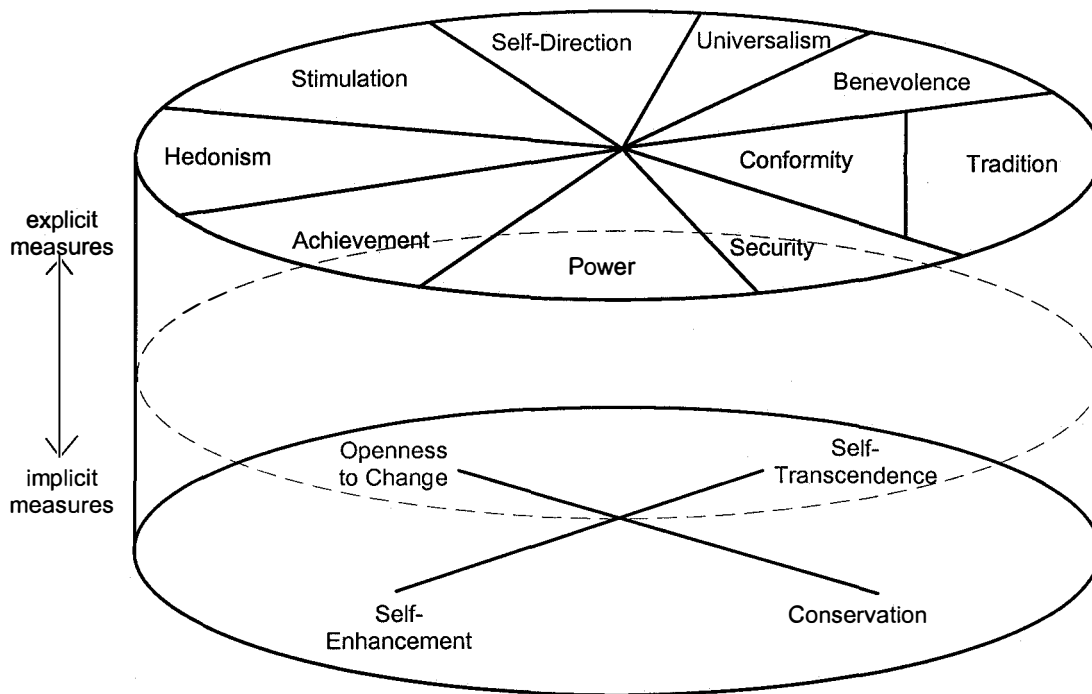

Figure 4. Cylindrex with the wedgelike (polar) partitioning of motivational content and the ordered (axial) partitioning of assessment instruments, showing up on two different two-dimensional projections.

Structural analyses of multitrait-multimethod matrices

Six data sets have been (re-) analysed in order to test the hypothesised structure of motives (cf. Bilsky, 1997a,b, 1998). Results of these analyses are reported according to three different aspects focused upon.

Inherent basic dimensions: The German Personality Research Form (PRF)

When analysing and discussing the convergent and discriminant validity of the German Personality Research Form (PRF), Stumpf, Angleitner, Wieck, Jackson and Beloch-Till (1985), among other things, referred to two MTMM-Matrices; each of them contains intercorrelations of 14 PRF-scores, self- and peer-ratings, respectively. Since the PRF covers a wide range of motivational constructs, these matrices were reanalysed by means of nonmetric Similarity Structure Analysis (SSA; Bilsky, 1997a) in order to see whether the basic value dimensions postulated by Schwartz (1992) apply to the structural description of motivational data, too. The SSA of the first of these matrices ($\underline{N}$ = 215; Stumpf et al., 1985, p. 55) is sketched out below.

A priori to SSA, however, the 14 PRF motives (e.g., achievement, affiliation, etc.) and the 10 value domains of the Schwartz model were matched according to their verbal descriptors. Matching was accomplished independently by Schwartz[3] and the author. The joint results of this attempt are summarised in table 1 (as can be seen, no clear counterparts of 'social recognition' and 'succorance' could be identified within values). Special attention should be paid to the resulting assignment of motives to basic (value) dimensions (according to figure 2, above); this assignment specifies the regional hypotheses to be tested by SSA. No hypotheses were formulated with respect to the partitioning of the methods used (i.e., PRF, self- and peer-ratings) because all of them are close to the explicit-pole of the awareness (measurement) facet.

Table 1

A priori matching of motives (PRF), values and basic value dimensions according to the verbal descriptors of the respective constructs

motive	value domain	value dimension
achievement: AC	achievement, power	self-enhancement
affiliation: AF	benevolence	self-transcendence
aggression: AG	power; benevolence(-), conformity (-)	self-enhancement
dominance: DO	power	self-enhancement
endurance: EN	achievement	self-enhancement
exhibition: EX	stimulation; tradition (-)	openness to change
harmavoidance: HA	security, tradition; stimulation (-)	conservation
impulsivity: IM	stimulation; conformity, tradition (-)	openness to change
nurturance: NU	benevolence; power (-)	self-transcendence
order: OR	security; stimulation (-)	conservation
play: PL	hedonism, stimulation	openness to change
social recognition: SO	(?) conformity, achievement	(?) conservation, self-enhancement
succorance: SU	(?) security, conformity, tradition	(?) conservation
understanding: UN	self-direction; tradition (-)	openness to change

---

[3] Personal communication, autumn 1996

A two-dimensional ordinal SSA of the 3 x 14 indicators of motives (computed by means of SYSTAT for Windows 5.0) yielded a coefficient of alienation $\underline{K}$ = .21 (cf. Borg & Shye, 1995, p. 129). Figure 5 shows the two-dimensional projection of all 42 variables and their wedgelike separation according to the regional hypotheses.
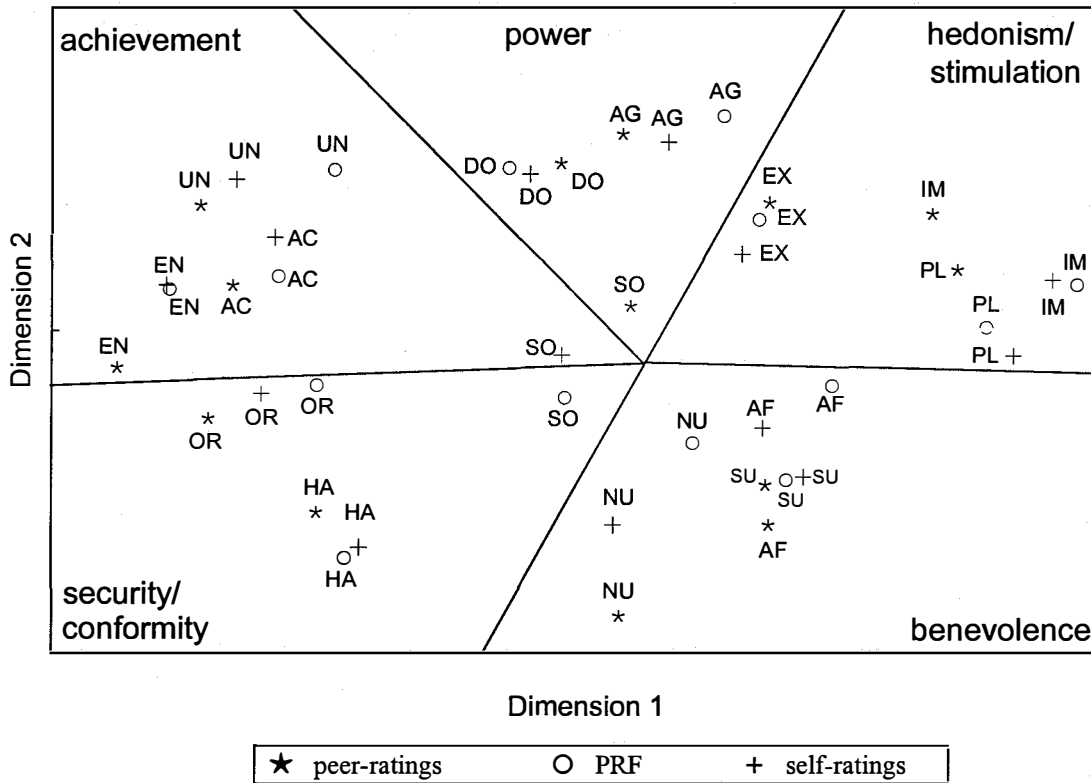

Figure 5. Two-dimensional ordinal SSA of 14 motives (PRF; cf. Stumpf et al., 1985, p. 59).

As can be seen, five (complex) motivational regions emerged. Their positions fit quite well into the configuration predicted from the basic dimensions. Thus, achievement and power (i.e., self-enhancement) are opposed to benevolence (self-transcendence), and hedonism/stimulation (openness to change) show up opposite to security/conformity (conservation), as expected. Only 'understanding' (which was expected to be an indicator of 'openness to change') results as a misfit; consequently, its meaning needs reconsideration if this 'misplacement' showed up in further analyses again.

One additional aspect of these results should be emphasised: Contrary to the often deplored 'unrelatedness' of motivational indicators, all variables which are supposed to represent the same motive (e.g., dominance) are in fact located in close proximity in this plot. This is true because SSA represents the pattern of <u>all</u> intercorrelations between variables <u>at the same time</u>.

A two-dimensional SSA of the <u>second</u> MTMM-matrix from the Stumpf et al. study (1985, p. 59) revealed essentially the same partitioning of motives (cf. Bilsky, 1998, for detailed information). Thus, the results from both studies clearly support the hypothesis that structural interrelations between motives can be represented by the same two basic dimensions that were supposed and found to be characteristic of the values structure in a multitude of cross-cultural studies (cf. Schwartz & Sagiv, 1995).

Implicit and explicit motives

As mentioned in the introduction, there has been a long debate on whether it is necessary or not to distinguish explicit from implicit motives. This question is closely linked to the type of measurement (i.e., paper-and-pencil, self-ratings, etc., as opposed to projective techniques) applied in motivational research. The next three reanalyses of MTMM matrices are devoted to this problem.

Langens (1996) collected data of the three motives <u>achievement, power</u> and <u>affiliation</u>, from a sample of 72 students of Boston University. Each motive was measured by three assessment techniques: Murray's Thematic Apperception Test (TAT), Emmons' Personal Strivings Questionnaire, and McClelland's Personal Values Questionnaire (PVQ). The intercorrelations of these 3 (motives) x 3 (instruments) indicators were documented in a multitrait-multimethod matrix (Langens, 1996, p. 65).

This MTMM matrix was reanalysed by submitting the intercorrelations to ordinal SSA. The coefficient of alienation of a two-dimensional solution was $\underline{K}$ = .12. This solution allowed the simultaneous partitioning of motives and instruments by a <u>radex</u> as depicted in figure 6.
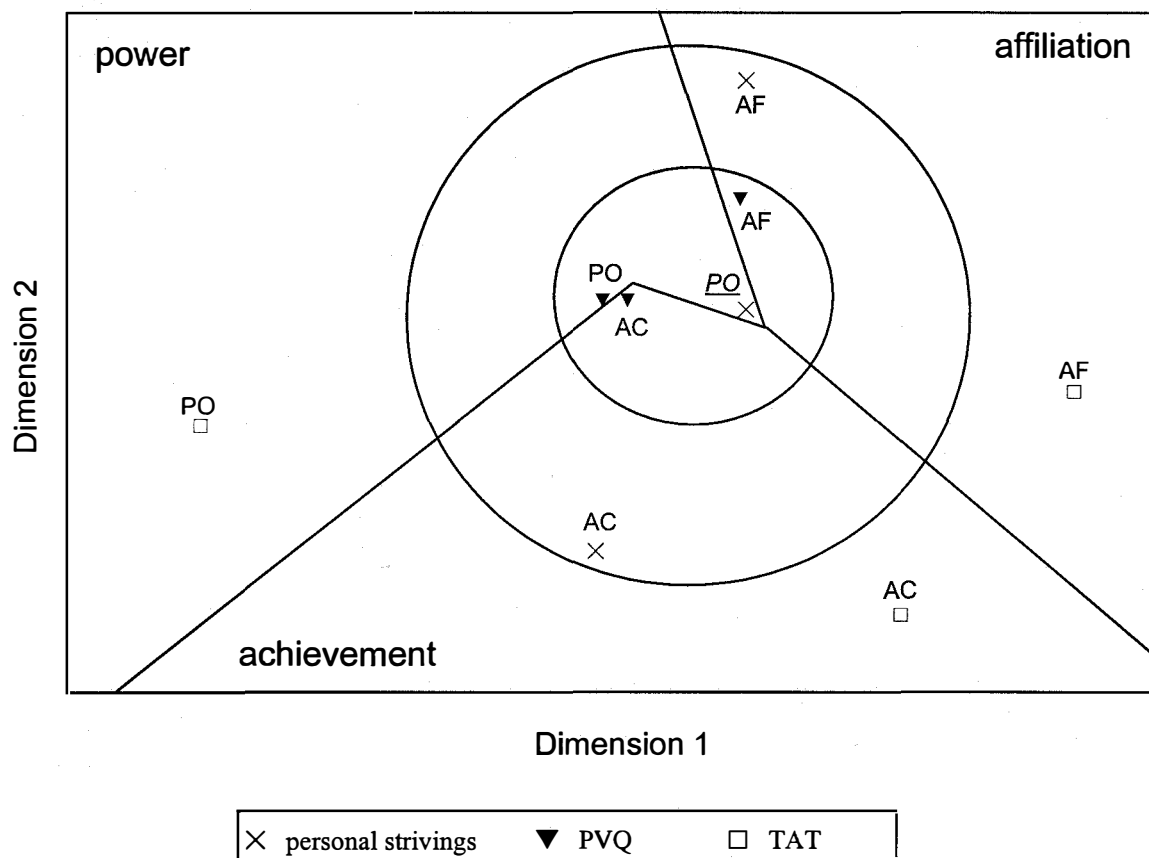

Figure 6. Two-dimensional ordinal SSA of Langens' (1996) MTMM matrix; radex-structure, partitioning data according to three motives and three instruments.

As can be seen, the three <u>motives</u> are perfectly separated in a wedgelike manner. Furthermore, the <u>assessment instruments</u> are ordered in such a way that explicit measures (i.e., PVQ) are located towards the centre of the plot while implicit measures (TAT) are close to the periphery, with Personal Strivings in between. However, this radex structure contains one misplacement: Power (PO: in italics and underlined) as measured by the Personal Strivings Questionnaire should not be located in the inner circle but in the band around it, together with the other indicators of the Personal Strivings Questionnaire. This misplacement can only be avoided by analysing the data in two consecutive steps. In this case, the three instruments could be perfectly separated too, by choosing a modular split (i.e., by concentric circles) with the PVQ-indicators in the centre, all strivings in the band around, and the TAT-scores outside. With respect to parsimony, however, the radex seems to be the adequate solution for splitting the motivation and awareness facets in this study. This choice was validated by reanalysing data from two other studies.

Emmons and McAdams (1991) investigated the relationship between personal strivings, motive dispositions and personality needs in one comprehensive study. Altogether, 72 students from Michigan State University (42 female, 30 male) served as subjects. Along with several other variables, the following indicators of motives were used: <u>achievement, affiliation, intimacy,</u> and <u>power</u> as assessed by Emmons' (1986) personal strivings; achievement, affiliation, <u>dominance,</u> and <u>nurturance</u> scores from the Jackson Personality Research Form (PRF); achievement, intimacy, and power measures, based on data from a TAT-like procedure.

The MTMM-matrix underlying the present analysis was synthesised from the respective submatrices documented in the Emmons and McAdams paper (1991, pp. 650-651: tables 2-4). Coefficients were reanalysed in the same way as before. A two-dimensional nonmetric MDS (SSA) yielded a coefficient of alienation $\underline{K}$ = .19. The partitioning of the scatterplot is shown in figure 7. Obviously, a perfect split of data was possible, separating both motives and assessment procedures in the form of a radex. Here again, motives show a polar structure (distinguishing between affiliation, intimacy, nurturance, achievement, and power/dominance) while assessment procedures (TAT, PRF, and strivings) are split in a modular way.
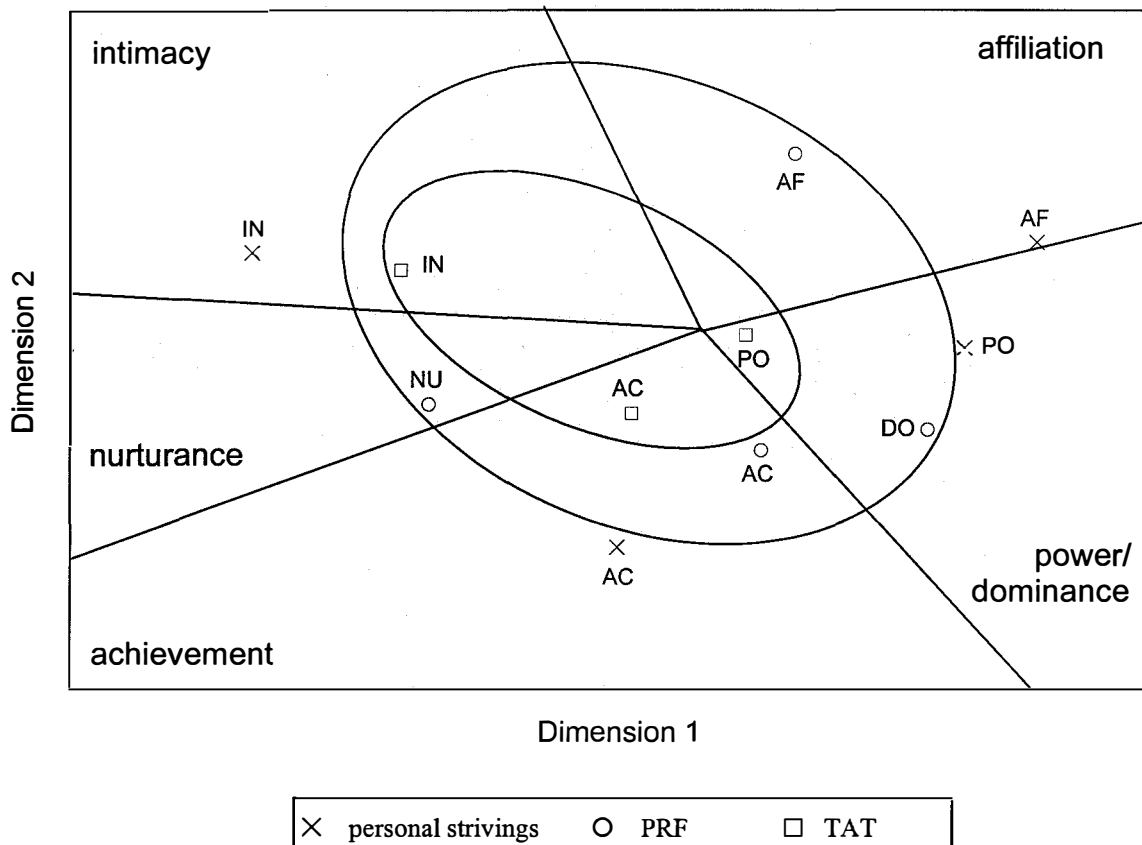
Figure 7. Two-dimensional ordinal SSA of the Emmons and McAdams (1991) MTMM matrix; radex-structure, partitioning data according to five motives and three instruments.

The third study which was reanalysed was conducted by King (1995); she was interested in comparing explicit and implicit motives, too. A total of 101 subjects, 73 female and 28 male, completed six different instruments, each of them measuring three motives, namely achievement, affiliation, and power. According to King, these instruments can be ordered along a continuum, ranging from implicit to explicit, forming the following order: TAT, autobiographic memories, ideographic wishes, personal strivings, PRF, and self-ratings. Since two indicators for affiliation were computed, both from the Personal Striving Assessment Packet (PSAP; Emmons, 1986) and from the PRF (Jackson, 1974), intercorrelations between 20 indicators of three motives were summarised in one MTMM-matrix (cf. King, 1995, p. 998). Again, a nonmetric MDS (SSA) was run with these data, resulting in a coefficient of alienation $\underline{K}$ = .30 for a two-dimensional solution (figure 8).

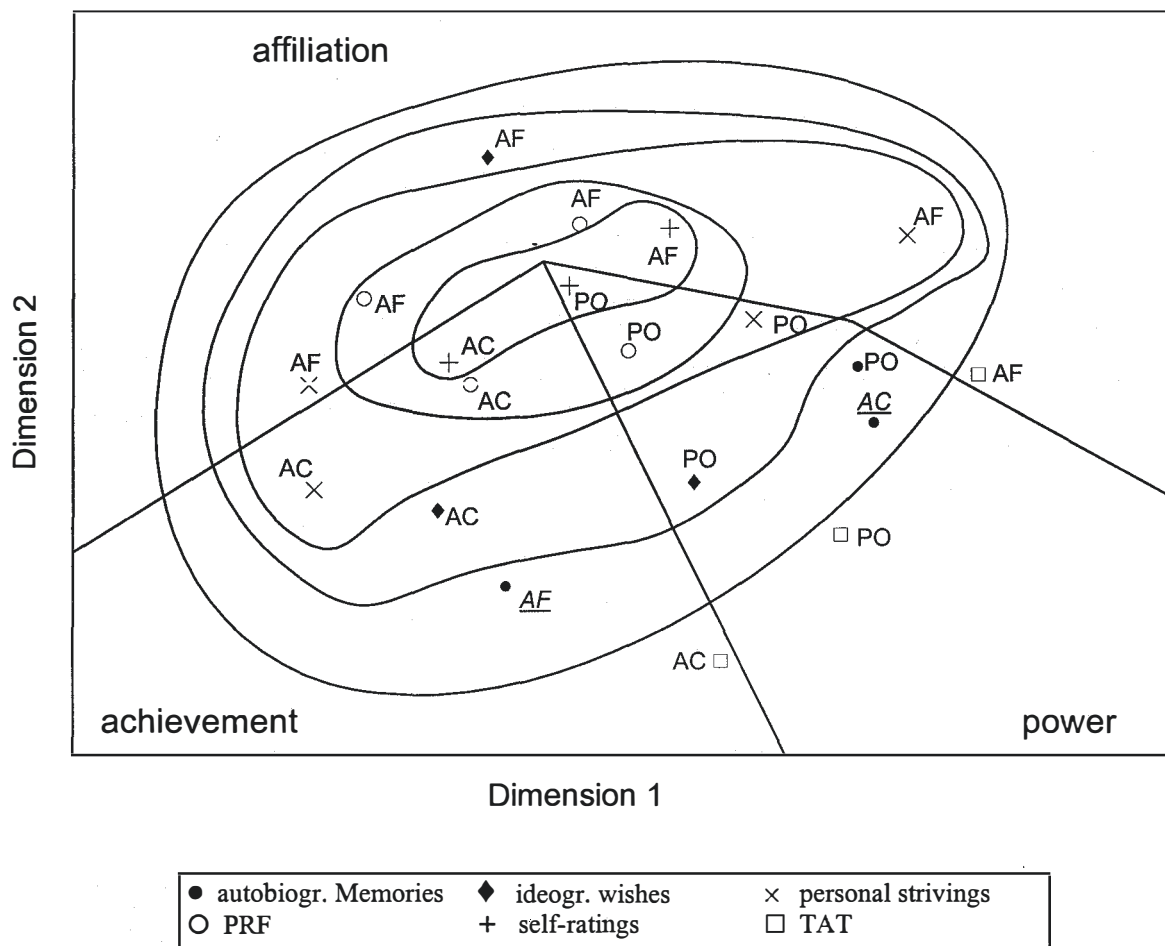| ● autobiogr. Memories | ◆ ideogr. wishes | ✕ personal strivings |
| O PRF | + self-ratings | □ TAT |

Figure 8.   Two-dimensional ordinal SSA of King's (1995) MTMM matrix; radex-structure, partitioning data according to three motives and six instruments.

As in the previous analyses, a radex structure emerged, separating motives (polar split) and assessment procedures (modular split). In spite of the complexity of this analysis, only two misplacements were observed (italics and underlined). Both of them relate to autobiographic memories, i.e., to a category of indicators that is less frequently used for measuring motives. As regards assessment, it should be noted that separation of indicators is not only perfect but also follows the predicted order from explicit measures in the centre of the plot to implicit indicators in the periphery.

A joint analysis of values and motives

While the analyses presented thus far look quite promising as to the applicability of the Schwartz model to the structural analysis of motives, evidence is only indirect. The usefulness of this approach would appear even more convincing if it proved helpful in partitioning values and motives in a joint analysis, too. Therefore, a new study was designed in which indicators of values and motives were collected from the same sample.

In spring 1997, 331 subjects from Münster completed a questionnaire consisting of two modules. One of them was a shortened version of the Schwartz-Value-Survey (SVS); the 44 items of this version had proved to be cross-culturally stable indicators of the respective value domains in a multitude of studies (cf. Schwartz & Sagiv, 1995). The other module consisted of the following scales from the German PRF (Stumpf et al., 1985): harmavoidance, play,

affiliation, and achievement. These scales were selected because they seemed to optimally fit the four poles of the basic value dimensions in the Schwartz model. In order to avoid effects of sequence, one half of the subjects answered the SVS-items first, the other half the PRF-items. Contrary to the usual procedure of data analysis in cross-cultural studies on values, Similarity Structure Analyses were run with scale scores of values instead of individual items; these scores were averaged aggregates of all items belonging to the respective value domain.

In a first step, value scores were analysed alone by means of ordinal SSA. The purpose of this analysis was to check whether the values do indeed spread in the way predicted by the model. As shown in figure 9, the expected structure of values could be reproduced perfectly by the data (coefficient of alienation $\underline{K}$ = .12).
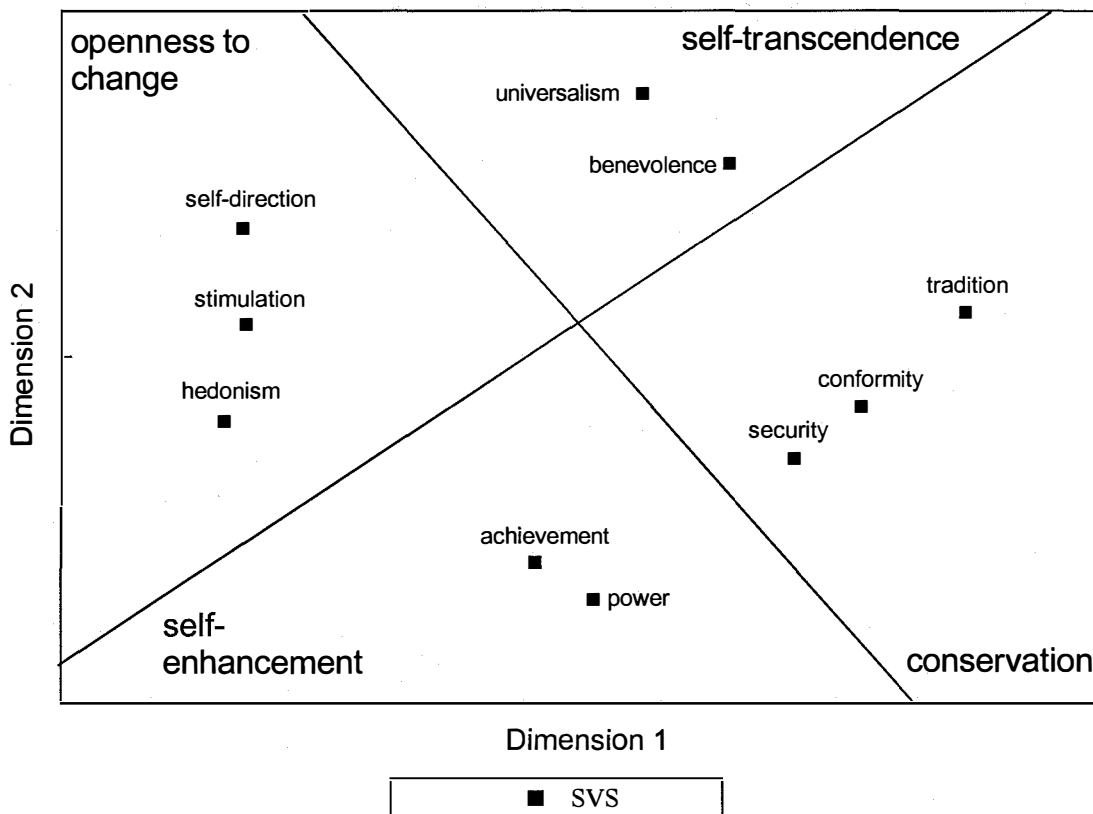

Figure 9. Two-dimensional SSA of ten value indicators calculated from 44 SVS-items that proved to be culturally stable indicators of the respective value domains (cf. Schwartz & Sagiv, 1995).

In a second step, indicators of values and motives were submitted to a joint SSA. The two-dimensional solution ($\underline{K}$ = .21) in figure 10 reveals the predicted radex of values and motives. As expected, all motives emerge in the correct sectors of the plot: affiliation in self-transcendence, achievement in self-enhancement, play in openness to change, and harmavoidance in conservation. In addition to this perfect match of motives and values, indicators could be split unambiguously according to the measurement applied. Thus, all SVS-scores are close to the centre and separated from the PRF-variables by a circular line. Obviously, the assessment facet plays a modulating role.
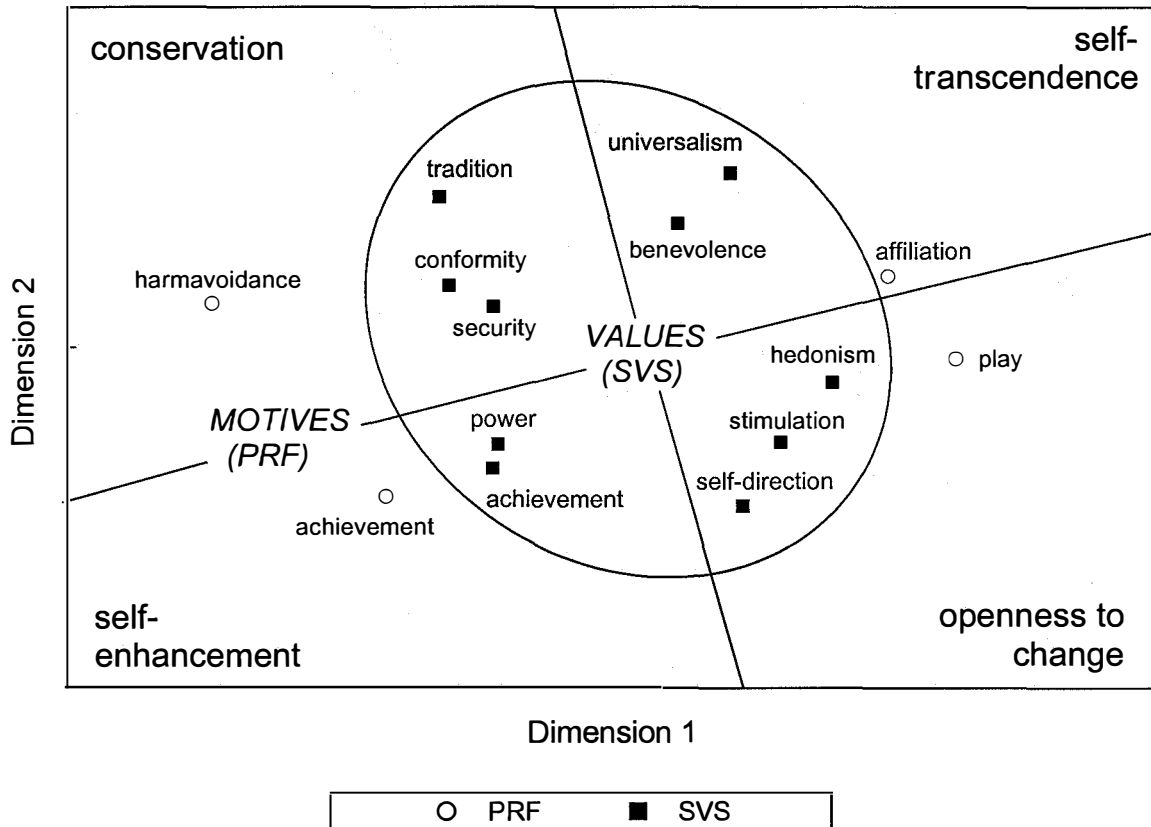
Figure 10. Two-dimensional SSA of ten SVS-value indicators and four PRF motives.

Apart from these clear-cut outcomes, one peculiarity of this last plot needs mentioning, however: Other than in figure 9, self-direction and hedonism changed their places in this joint projection of values and motives. Since all bivariate correlations are taken into account simultaneously in an SSA, the structure of values has obviously been affected by the introduction of the four motives. This means that the correspondence of motives and the basic value dimensions is good but not perfect. However, this is only a minor deviation which does not threaten our central assumption of one common structure of values and motives.

Discussion and conclusions

Both, the reanalyses of the multitrait-multimethod matrices of motives and the joint analysis of motives and values suggest that there exists considerable conceptual overlap between these two types of psychological constructs. Three results seem to be of major interest. First and contrary to many former findings, the above analyses revealed that there is a correspondence between different indicators of the same motive - independently of the measurement applied. This correspondence showed up in form of wedgelike partitions of motives in all of our analyses. Second, the structural relationship between motives can be described by the same two basic dimensions underlying the Schwartz model of values structure (Schwartz, 1992). Of course, this finding is not only of taxonomic interest. Instead, it should also prove helpful in predicting correlations of motives with other variables (covariates). This is true because the circular ordering of motives and values does not only reflect categorical distinctions but results from the mutual compatibilities and incompatibilities between the respective constructs. Thus, in his studies, Schwartz could demonstrate that correlations with external variables follow a sinusoid pattern as values move around the circular structure (e.g., Schwartz & Huismans, 1995). Consequently, correlations between adjacent motives and a third variable should be more similar than correlations between such a variable and motives

that are located farther apart in terms of the underlying basic dimensions. Third, our analyses suggest that there is no categorical but a gradual distinction between values and motives. This gradual distinction seems to be rooted in different levels of awareness. They are specified by the respective facet in the above mapping sentence and mirrored in assessment procedures that can be ordered on a continuum from explicit to implicit.

The systematic relations between motives that are at least partly independent of the measurement applied has probably been concealed in past research by a number of unfavourable factors: (1) an inadequate focus on simple bivariate correlations instead of correlational patterns, (2) a neglect of taxonomic reasoning in motivational research, and (3) a categorical instead of a dimensional differentiation of explicit and implicit measures of motivation. In fact, there is a fourth, methodological factor which may have contributed to this development: Conventional factor analysis, as applied to a considerable extent in past research, normally aims at the identification of simple structure. When dealing with complex items, however, this approach may run into serious problems and result in methodological artefacts. Similarity Structure Analysis and related procedures, on the other hand, are well suited for handling multifaceted types of research problems.

As regards the organisation of motives in multidimensional space, so far a two-dimensional radex turned out to be a sufficiently differentiated model for describing our data. However, this does not necessarily disvalidate a three-dimensional model. The radex structure found may, in fact, be but a two-dimensional projection of a 'special form' of a cylindrex, namely a 'cone' (looked on from above). This type of representation was, for example, also found in Levy and Guttman's research on adjustive behaviour and well-being (cf. Levy & Guttman, 1989). Further analyses are needed to decide whether the more parsimonious two-dimensional model suffices for describing the motives-values relationship.

Independently of whether a radex or a conical structure is the most adequate model for representing motives in multidimensional space - both raise a question as to the role of the modular facet in partitioning motives. Until today, most (Langens, 1996, King, 1995, as well as our own joint analysis of values and motives) though not all of our analyses (Emmons & McAdams, 1991) suggest that explicit indicators emerge in the centre of the modular structure while the implicit tend to the periphery of the plots. This ordering of assessment instruments on a continuum from self-report measures to projective techniques does certainly reflect more than a methodological distinction. From literature we know, for instance, that correlates of implicit and explicit motives (values) partly differ (e.g. Weinberger & McClelland, 1990). This fact cannot be explained by the present model. It might be speculated that the amount of awareness that is characteristic of the type of assessment applied moderates the relation both, among values and motives and between values/motives and external (third) variables (e.g. social desirability). However, additional research is needed to arrive at a sound interpretation and understanding of this complex problem.

In view of the questions left unanswered, the aim of this paper should be stressed once again. Here, the focus was on identifying conceptual similarities between two constructs - motives and values - that have been investigated in different branches of psychological research until today. This was realised by falling back on Schwartz' (1992) theory on the structure of values as one common frame of reference. Of course, this is not to deny that there are good reasons for investigating conceptual differences of motives and values as well. However, the identification of conceptual overlap seems necessary with respect to a better integration of past findings from motivational, social, and personality psychology and an economical and parsimonious planning of future research.

In the long term, other findings and scientific developments in psychology have to be (re-) considered as well when continuing with this type of structural research on motives. It is not by chance that, during the past years, the 'interpersonal circumplex' (Wiggins, 1979; Plutchik & Conte, 1997) has considerably gained in importance in taxonomical studies on personality and emotions. As motivational psychologists share many research issues and problems with their colleagues from personality and differential psychology, it will be worth keeping an eye on this discussion from their perspective.

One final caveat should be mentioned. Taxonomies, even when successfully applied in broad areas of scientific research, have to be scrutinised with respect to redundancy and overlap on a more general level, too. Thus, Eysenck's (1954) political and Schwartz' (1992) value dimensions, and those opening up the interpersonal circumplex (Foa, 1961; Wiggins, 1979), represent taxonomies that seem to share some common meaning. To put it in terms of Osgood, Suci and Tannenbaum (1957), they can possibly be compared and partly integrated with reference to the well known 'EPA-structure' of meaning, i.e., with reference to the dimensions evaluation, activity and potency. At present, this is but speculation. However, considering the growing literature and professional specialisation in psychology, integration on different levels of abstractness is a must if we do not want to get lost in a heap of piecemeal research that prevents an effective and fruitful intra-psychological dialogue.

References

Bilsky, W. (1997a). *Vergleichende Strukturanalysen von Motiven und Werten [Comparative structural analyses of motives and values]*, Münster, Berichte aus dem Psychologischen Institut IV.

Bilsky, W. (1997b). *Strukturelle Beziehungen zwischen Motiven und Werten: Weitere Hinweise auf die Tragfähigkeit eines integrativen Modells [Structural relations between motives and values: further evidence for the workability of one integrative model]*, Münster, Berichte aus dem Psychologischen Institut IV.

Bilsky, W. (1998). *Values and motives,* Münster, Berichte aus dem Psychologischen Institut IV.

Bilsky, W. and Schwartz, S. H. (1994). Values and personality. *European Journal of Personality*, 8: 163-181.

Borg, I. and Groenen, P. (1997). *Modern multidimensional scaling*, Berlin, Springer.

Borg, I. and Lingoes, J. (1987). *Multidimensional similarity structure analysis,* New York, Springer.

Borg, I. and Shye, S. (1995). *Facet theory: form and content*, Newbury Park, CA, Sage.

Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology*, 51: 1058-1068.

Emmons, R. A. and McAdams, D. P. (1991). Personal strivings and motive dispositions: exploring the links. *Personality and Social Psychology Bulletin*, 17: 648-654.

Eysenck, H. J. (1954). *The psychology of politics,* London, Routledge.

Foa, U. G. (1961). Convergences in the analysis of the structure of interpersonal behavior. *Psychological Review*, 68: 341-353.

Guttman, R. and Greenbaum, C. W. (1998). Facet theory: its development and current status. *European Psychologist*, 3: 13-36.

Heckhausen, H. (1989). *Motivation und Handeln [Motivation and action],* Berlin, Springer.

Jackson, D. N. (1974*). Manual for the Personality Research Form*, Goshen, Research Psychologists Press.

King, L. A. (1995). Wishes, motives, goals, and personal memories: relations of measures of human motivation. *Journal of Personality*, 63: 985-1007.

Langens, T. (1996). *Eine Untersuchung zur Auswirkung von Inkongruenzen zwischen impliziten Motiven und expliziten Motivationen auf verschiedene Dimensionen des emotionalen Wohlbefindens [An investigation into the impact of non-congruence between implicit and explicit motivation on different dimensions of emotional well-being],* Unveröffentlichte Diplomarbeit im Fachbereich Erziehungswissenschaften, Bergische Universität - Gesamthochschule Wuppertal.

Levy, S. (1985). Lawful roles of facets in social theories. In: Canter, D. (Ed), *Facet theory,* New York, Springer, pp. 59-96.

Levy, S. and Guttman, L. (1989). The conical structure of adjustive behavior. *Social Indicators Research*, 21: 455-479.

McClelland, D. C. (1985). *Human motivation,* Glenview, IL, Scott.

McClelland, D. C., Koestner, R. and Weinberger, J. (1989). How do self-attributed and implicit motives differ?, *Psychological Review*, 96: 690-702.

Osgood, C. E., Suci, G. J. and Tannenbbaum, P. H. (1957). *The measurement of meaning,* Urbana, IL, Univ. of Illinois Press.

Plutchik, R. and Conte, H. R. (1997). *Circumplex models of personality and emotions,* Washington, American Psychological Association.

Rokeach, M. (1973). *The nature of human values,* New York, The Free Press.

Schwartz, S. H. (1992). Universals in the content and structure of values: theoretical advances and empirical tests in 20 countries. In: Zanna, M. (Ed), *Advances in Experimental Social Psychology*, Vol. 25, New York, Academic Press, pp. 1-65.

Schwartz, S. H. and Bilsky, W. (1987). Toward a universal psychological structure of human values. *Journal of Personality and Social Psychology,* 53: 550-562.

Schwartz, S. H. and Bilsky, W. (1990). Toward a theory of the universal content and structure of values: extensions and cross-cultural replications. *Journal of Personality and Social Psychology,* 58: 878-891.

Schwartz, S. H. and Huismans, S. (1995). Value priorities and religiosity in four western religions. *Social Psychology Quarterly,* 58: 88-107.

Schwartz, S. H. and Sagiv, L. (1995). Identifying culture-specifics in the content and structure of values. *Journal of Cross-Cultural Psychology,* 26: 92-116.

Stumpf, H., Angleitner, A., Wieck, T., Jackson, D. N. and Beloch-Till, H. (1985). *Deutsche Personality Research Form (PRF). Handanweisung,* Göttingen, Hogrefe.

Weinberger, J. and McClelland, D. C. (1990). Cognitive versus traditional motivational models: irreconcilable or complementary? In: Higgins, E. T. and Sorrentino, R. M. (Eds), *Handbook of motivation and cognition,* Vol. 2, New York, Guilford, pp. 562-597.

Wiggins, J. S. (1979). A psychological taxonomy of trait-descriptive terms: the interpersonal domain. *Journal of Personality and Social Psychology,* 37: 395-412.

Berichte aus dem Psychologischen Institut IV

Aus der Arbeitseinheit "Differentielle Psychologie und Persönlichkeitspsychologie" sind bisher erschienen:

1/1994   WENTURA, D.: Gibt es ein "affektives Priming" im semantischen Gedächtnis?

2/1995   BILSKY, W.: Die Bedeutung von Furcht vor Kriminalität in Ost und West (unter diesem Titel in Monatsschrift für Kriminologie und Strafrechtsreform, 1996, 79, 357-372).

3/1996   BILSKY, W.: Ethnizität, Konflikt und Recht. Probleme von Assessment und Begutachtung in Strafverfahren mit Beteiligten ausländischer Herkunft. Antrag auf Sachbeihilfe bei der Volkswagenstiftung.

4/1996   BILSKY, W., BORG, I. & WETZELS, P.: La Exploración de Tácticas para la Resolución de Conflictos en Relaciones Íntimas: Reanálisis de un Instrumento de Investigación.

5/1997   BILSKY, W. & HOSSER, D.: Soziale Unterstützung und Einsamkeit: Zur Beziehung zweier verwandter Konstrukte.

6/1997   BILSKY, W.: Vergleichende Strukturanalysen von Motiven und Werten.

7/1997   BILSKY, W.: Miedo al Delito, Victimizacion criminal, y la Relacion Miedo-Victimizacion: Algunos Problemas conceptuales y metodologicos.

8/1997   WENTURA, D.: The "meddling-in" of affective imformation: Evidence for negative priming and implicit judgement tendencies in the affective priming paradigm.

9/1997   BILSKY, W.: Strukturelle Beziehungen zwischen Motiven und Werten: Weitere Hinweise auf die Tragfähigkeit eines integrativen Modells.

10/1997   BILSKY, W.: Ethnizität, Konflikt und Recht. Bericht über ein von der Volkswagenstiftung im Schwerpunkt "Recht und Verhalten" gefördertes interdisziplinäres Symposium in der Werner-Reimers-Stiftung, Bad Homburg, vom 6.-8. Februar 1997.

11/1998   BILSKY, W.: Values and Motives. Paper presented at the International Research Workshop „Values: Psychological Structure, Behavioral Outcomes, and Inter-Generational Transmission". Maale-Hachamisha, Israel, January 12-16th, 1998.

12/1998   BILSKY, W. & PETERS, M.: Estructura de los valores y la religiosidad. Una investigación comparada realizada en México.

13/1998   WENTURA, D.: Die Veränderung kognitiver Strukturen: Mikroprozessuale Aspekte der Bewältigung.

14/1998   WENTURA, D. & GREVE, W.: Adaptation und Stabilisierung selbstbezogener Kognitionen. Antrag auf Gewährung einer Sachbeihilfe an die Deutsche Forschungsgemeinschaft im Schwerpunktprogramm „Informationsverarbeitung im sozialen Kontext"

15/1998   WENTURA, D. & NÜSING, J.: Situationsmodelle in der Textverarbeitung: Evidenz für die automatische Aktivierung emotional-entlastender Informationen.

16/1999   WENTURA, D.:Putting pieces together - or: Is there any relationship between „affective priming" sensu Fazio et al. and „affective priming" sensu Murphy and Zajonc.

17/1999   BILSKY, W. & JEHN, K. A.: Reconsiderations of value structures bades on cross-cultural research: implications for organizational culture and conflict. Paper presented at the Twelfth Conference of the International Association for Conflict Management, June 20 - June 23, 1999, San Sebastián-Donostia, Spain.

18/1999   BILSKY, W. & RAHIM, M. A.: Mapping conflict styles - a facet approach. Paper presented at the Twelfth Conference of the International Association for Conflict Management, June 20 - June 23, 1999, San Sebastián-Donostia, Spain.

19/1999   BILSKY, W.: Common structures of motives and values: towards a taxonomic integration of two psychological constructs.