

Volume 12, Number 11

Submitted: December 22, 2006

First Revision: June 18, 2007

Accepted: July 1, 2007

Published: July 2, 2007

METAPHORS AS SYMBOLIC ENVIRONMENT OF THE SELF: HOW SELF-KNOWLEDGE IS EXPRESSED VERBALLY

Karin S. Moser
University of Zurich
Switzerland

ABSTRACT

In current social psychology, the self is conceptualized as a “set of beliefs” (Baumeister, 1998). As there is no direct way to observe the self, a large part of self-knowledge remains tacit. Researchers mostly analyze “traces of the self” represented in language, for example as metaphors. It is argued that language can be conceptualized as symbolic environment individuals are socialized into much like the physical and social environment. In two studies ($N_1=12$, $N_2=63$), patterns of metaphors of the self were analyzed and related to self-concept aspects and the big five dimensions of personality. Theoretical and methodological implications for self-concept research are discussed.

INTRODUCTION

Social psychological research on the self in the past twenty-five years can be characterized by an increasing awareness of social, cultural, and environmental factors important in the development and maintenance of the self (Csikszentmihalyi & Rochberg-Halton, 1981; Proshansky, 1978; Wicklund & Gollwitzer, 1982; Hormuth, 1990). While behaviorists treated the self merely as a black box that merited no further consideration, the “cognitive turn” of the 1960s brought the self back into the focus of main-stream research. The realization that information processing and cognitive representations play an important role in understanding human behavior called to attention that the self is a construct that can be described as a set of beliefs about the self (Baumeister, 1998; Markus & Zajonc, 1985; Markus & Sentis, 1982; Markus & Wurf, 1987; Rosenberg & Kaplan, 1982; Snygg & Combs, 1949). This paradigm shift not only changed the topics of research in social psychology; the new research on the self-concept was in a sense also a movement back to the roots of social psychology at the end of the nineteenth century and the first half of the twentieth century (Cooley, 1902; James, 1890; Mead, 1934, Kuhn & McPartland, 1954).

It lies in the very characteristic of the self that it has to be assessed indirectly, either by observing interactions with others and with the physical environment or by studying beliefs about the self as a result of self-reflection. As there is no direct way to observe the self, a large part of self-knowledge remains tacit (Baumeister, 1998). This is true regardless of whether the self is studied in a “realistic” environment or experimentally, whether the self is assessed by standardized self-concept scales, by self-descriptive statements such as the twenty statements test (Kuhn & McPartland, 1954), or by open-ended questions in interviews. In all cases, knowledge about the self is at least to some extent mediated by language. Self-knowledge is expressed – not exclusively but mostly – in language. What researchers obtain and analyze as data are mostly “traces of the self” represented in language. Because of the great importance of language for self-knowledge, it is argued in this paper that language should be conceptualized as a symbolic environment of the self and studied accordingly (Moser, 2003). Analogous to the physical and social environment, language is a symbolic environment individuals are socialized into, with rules and artifacts representing social and cultural beliefs about the world. So-called conventional metaphors for instance, as one example of linguistic artifacts, are typical for a specific culture and time period and are influenced by cultural, social, political and technological changes. It seems therefore very likely that language is not merely a “neutral” instrument of self-expression, but that the cultural and social belief system inherent in language is likely to influence individual language use and beliefs about the self. In this paper, it will therefore be argued that the relation between language and self-knowledge should be of great interest to social psychologists as it will help to understand the interaction of private self-knowledge and socially and culturally constructed self-knowledge. It will also be argued that to study language as a symbolic environment of the self, metaphors are an adequate methodology in self-concept research.

Language and the Self in Social Psychology

The relation of language and self has been studied extensively in psychology, mainly in developmental studies of self and identity, where language acquisition is seen as one of the main socialization agents and as indispensable for the development of a sense of self (Stern, 1985). Only by learning to name things – physical self-attributes as well as inner states and feelings – a sense of self can evolve, and the experience of privacy of self-experiences leads to the development of the private self (Singer & Kolligian, 1987). In social psychology, studies on social identity formation (Deaux, 1996), and group identity investigated the role of language (Giles, 1978; Giles, Bourhis, & Taylor, 1977), which was also the subject of controversial discussions (Edwards & Potter, 1992; Liebkind, 1992). A number of ecological studies based on Mead's theory of symbolic interactionism (1934) studied the meaning of things and places for the self (Csikszentmihalyi & Rochberg-Halton, 1989; Dittmar, 1992). In the process of symbolization, physical objects and the physical environment were assumed to take on importance for the self through processes of communication and the attribution of personal meaning to things and places. Representation and communication of self-knowledge were indeed recognized as central link between environment and self. Empirical evidence of the importance of self-related language for self-knowledge was also shown in a study on attribution processes (Fiedler, Semin, Finkenauer, & Berkel, 1995). Constructivist research in social psychology used narrative approaches to the self to study how story structure, self-actualization, and self-presentation interact, and how they related to life stories in therapeutic settings and clinical case studies (Gergen & Gergen, 1988; Kerby, 1991; McAdams, 2001; White & Epston, 1990). Although the importance of language has gained wider recognition in social psychological self-concept research (Franzoi, 1996; Kihlstrom & Klein, 1994; Markus, Kitayama, & Heiman, 1996), it is still a rather neglected subject.

Organization of Self-Knowledge

Current self research in social psychology sees the self as a construct best described as a set of beliefs about the self (Baumeister, 1998). Instead of conceptualizing the self-concept as an entity, today's view of the self sees it as an aggregate of self-schemata rather than a single conception of self (Markus, 1982). Current literature in social psychology uses the terms self-concept and self-knowledge synonymously and includes in self-knowledge all beliefs about the self, whether they might be true or false. It is believed that only part of the full self-knowledge is present in self-awareness at any given time. Different terms have been proposed for the present part of self-knowledge, such as the phenomenal self (Jones & Gerard, 1967), the spontaneous self-concept (McGuire et al., 1978), and more recently, the working self-concept (Markus & Kunda, 1986) or the actual self (Higgins, 1987). The difference between a working self-concept and the full self-knowledge also means that different and even inconsistent beliefs about the self can coexist. Only the working self-concept is thought to have to be internally consistent, otherwise views about the self could be widely discrepant or even contradictory. The organization of self-knowledge into different self-schemata is thought to be quite loose, as theorized in self-discrepancy theory and evidenced in several studies (Higgins, 1987; Higgins, van Hook & Dorfman, 1988) and to differ in complexity (Linville, 1987). In his self-discrepancy theory, Higgins (1987) postulates that the self-concept contains two more self-representations or self-schemata besides the actual self: the ideal self and the ought self. While the actual self refers to the currently activated and salient aspects of self, the ideal self represents the hopes, wishes and goals of a person from the perspective of how this person would ideally see him- or herself. In

contrast, the ought self represents all the responsibilities, tasks and norms a person feels obligated to fulfill. Earlier conceptions of self have distinguished between material, social and spiritual self (James, 1892), the diffuse, private, public and collective self (Greenwald & Pratkanis, 1984) and the different types of self-presentations postulated by Goffman (1959), Tedeschi (1986) and Schlenker (1980). Markus & Nurius (1986) have also proposed possible selves as central motivational structures of the self-concept. The different aspects of the self-concept have been shown to have a strong motivational impact on people's behavior and attitudes, as people try to avoid negative self-perceptions and strive for a positive self-concept.

Metaphorical Representation of Self-Knowledge

Metaphors are powerful cognitive tools to relate abstract and complex self-knowledge to concrete experiences, thereby enabling self-reflection and communication of the inner self. Metaphors are assumed not only to have representational functions, but to provide also the basis for understanding, decision-making, and action (Dutke, 1994; Vosniadou & Ortony, 1989, Ortony, 1993). As shown in the experiments of Gentner and Gentner (1983), for example, if people understand the functioning of an electric light switch in terms of an analogy to the water cycle, they see electrical current as functionally equivalent to water pressure, the battery as a water tank, and the light switch as a kind of valve that is used to interrupt the flow of water. This metaphorical model of electricity enables them to understand the abstract phenomenon of "electric current". It also provides a useful basis for problem solving, such as for repairing a non-functioning light switch. Although the water metaphor is not correct in technical terms, the functional analogy of electric current and water cycle is sufficient for a "naïve" understanding of the abstract concept of electricity and for everyday problem-solving skills.

The same basic mechanisms of analogy work in the case of other abstract concepts such as the self. If for example, self-knowledge is expressed as being "*on a path*", the metaphor model of the path provides strategies as well as insights into how the self works and how important self-relevant goals, such as professional success or satisfactory personal relationships, might be achieved. Using the path analogy, success can be conceptualized as a matter of "*choosing the right path*", and of "*taking a stepwise approach to the goal*", and so on (Moser, 2003) [1]. Certain forms of psychotherapy make use of these properties of metaphors, analyzing habitual metaphors and helping their clients to develop alternative metaphorical models to help them understand important experiences and map their life stories (Buchholz, 1996; Combs & Freedman, 1990; Lankton & Lankton, 1991). Metaphors are also central in capturing and conveying emotions, thus helping to reflect and communicate affective dimensions of the self-concept (Ortony & Fainsilber, 1989).

In social psychology, metaphors have been used to study group interaction and processes, such as knowledge transfer and the building of joint mental models and transactive memory systems in teams (Klimoski & Mohammed, 1994; Hill & Levenhagen, 1995; Moser, 2004). In an experimental study by Ottati et al. (1999), it was shown that metaphors influence information processing of self-relevant information: If the metaphors used to convey a message were seen as self-descriptive, people considered these messages as more important and paid more attention even if the content of the message itself was negative. For instance, persons who perceived sports as being an important part of their self-concept were paying more attention to messages formulated in sport metaphors. The experiments not only showed the persuasive power of metaphors, but also the important link between metaphors and self-knowledge. The findings are

also consistent with further studies showing that the use of metaphors facilitates negotiation (Loewenstein et al., 1999; Thompson et al., 2000). Metaphors have also been applied to study inter-group relations in social and organisational psychology, especially in the case of organisational change, where metaphors can be used to explicate different perspectives and help to manage processes of social categorization of in- and out-group relationships (Tsoukas, 1991; Bouwen, 1998; Palmer & Dunford, 1996; Putnam, Phillips & Chapman, 1996).

One famous approach in social psychology using metaphors is Goffman's theory of the presentation of self in everyday life (Goffman, 1959). In his dramaturgical approach, Goffman actually uses one of the central functions of metaphors described above to explain how people interact and present their identities to others. He uses the metaphor source domain "THEATRE" to reduce complexity and make processes of identity presentation and interaction understandable. In the theatrical metaphor, the self becomes an actor on stage, with a public and the goal to convey a certain image and role to that public. In this dramaturgical perspective, all aspects of the metaphor source domain "THEATRE" can now be used to further differentiate individual self-presentation and interactions between people by referring to both the structural aspects and processes related to theatre, such as front stage, back stage, role playing, setting, personal front with appearance and manners, and so on to understand the mechanisms and motivations of impression management. In fact, not only Goffman's theory of impression management uses a central metaphor to convey its content to the reader. Scientific theory generally uses metaphorical representations to make abstract ideas feasible, and scientific debates can be described in terms of competing metaphors about how to best capture the meaning of a theory (Ricoeur, 1986). This process can be best observed in the case of paradigm shifts, as described by Thomas Kuhn (1962) in his work on the structure of scientific revolutions, which usually involve a shift in central metaphors and in the specific language considered adequate (Gentner & Grudin, 1985; Gigerenzer, 1991).

In cognitive linguistics and cognitive psychology, a metaphor is defined as an analogy (Anderson, 1996; Lakoff, 1987, 1993; Lakoff & Johnson, 1980; Langacker, 1987). A metaphor consists of the projection of one schema (the source domain of the metaphor) onto another schema (the target domain of the metaphor). The schema of the metaphor source domain always includes structural and procedural aspects. For example, "PATH" has a typical topology consisting of a limited number of slots, such as a starting point, a final point, and a direction. In addition to these structural properties, the process associated with the path schema is that of time passing as one moves along the path. This topology of the path schema is then used to structure a target domain, for example "SUCCESS". Self-knowledge about being successful (the target domain) is now metaphorically mapped in terms of the path schema. This may involve the path schema becoming further differentiated into career steps, parallel paths, obstacles, and detours, with matching metaphorical expressions such as "*achieving distant goals*", "*heading in the right direction*", "*moving on*", "*getting back on track*", and the like. Differentiation of the metaphorical mapping process depends on the complexity of the self-knowledge in one specific domain, such as "SUCCESS". The more complex and the richer the experience with a certain topic is, the higher the differentiation and complexity of metaphors will be. Complexity of metaphorical mapping is directly related to expertise and thus to the underlying self-concept domain as has been shown in the case of medical expertise (Liebert, 1995).

Complex and abstract topics such as the self have to be expressed metaphorically in order to make sense and to be communicated to others. But metaphors are much more than just being instrumental in reducing complexity and communicating inner states and abstract ideas. Conventional metaphors are the linguistic expression of culturally and socially accepted concepts in society, and implicitly convey what is thought to be appropriate and how to go about things, for instance when one wants to be successful. Metaphors are acquired by the individual as part of general language acquisition, thereby learning implicitly important social and cultural rules (Smith, 1991; Traugott, 1985). The underlying implicit cultural concepts are the reason why, when learning a foreign language, understanding and using the right metaphors is one of the most difficult steps in foreign language mastery. The use of conventional metaphors, such as those in the examples above, is thus inevitable in both everyday and professional language and the reason why metaphors are such interesting linguistic artifacts to study the symbolic environment of the self. Conventional metaphors are also indicative of processes of social change in a society, as new metaphors emerge and older metaphors are considered old-fashioned and forgotten (Liebert, 1993). New metaphors are often triggered by new technologies, such as the introduction of cars (“*step on the break*”) or personal computers (“*reformat my relationship*”) to large parts of the public and are then conventionalized. Conventional metaphors may also be typical for certain generations, as studies on teenager talk have shown, or social groups, such as immigrants (Ballarini, 1988; Coupland & Coupland, 1995). Several studies suggested that conventional metaphors are used automatically and subconsciously, unless special training brings them to the attention of the speaker (Allbritton, 1995; Debatin, Jackson, & Steuer, 1997; Gentner, 1989; Gentner & Wolff, 2000; Gibbs, 1992; Glucksberg, 1989). In contrast, new metaphors are created specifically and consciously to emphasize or clarify a message and catch the attention of the receiver of a message. While new metaphors are widely and effectively used in advertising, politics and literature, and are an important aspect of creative writing, new metaphors are rarely found in everyday language. Everyday language is generally dominated by conventional metaphors, which are often not recognized as metaphors anymore and thus give us access to unconscious and automated processes and implicit self and world knowledge.

The research presented here aims to look at conventional metaphors of the self as a symbolic environment. It is hypothesized that talking about oneself and the different aspects of self-schemata will a) require the use of metaphors, and b) follow conventional metaphor use by drawing metaphors from a limited pool of widely spread conventional metaphor source domains. This is of great interest to social psychologists researching the self, because if the hypotheses above find empirical support, looking at metaphors of the self is one way of looking at the interaction between social and cultural concepts and self-knowledge at a micro-level. It would also mean that the notion of “authenticity” of self-knowledge would have to be discussed critically from both a methodological and theoretical point of view. This is of special importance for research on the self as it relies to a large extent on verbal data.

METHOD - STUDY 1

It was the aim of study 1 to determine whether metaphors were used when talking about the self, and if so, to describe the metaphor source domains that were identified and to arrive at an empirically sound categorical system of metaphor source domains.

Sample

12 graduate students of different Swiss universities were selected for an explorative interview study with an in-depth inductive analysis of metaphors and metaphor source domains. The participants averaged 25 years of age, had different study majors and were at the point of graduating from university within the next months. Five students were female, seven male.

Procedure and Materials

The interview questions referred to the upcoming transition from university to work, and asked students to talk about their current self-perception, their hopes and fears, in the past and for the future, with regard to success and personal relationships, in both their professional and private lives (see appendix for interview schedule). Success and personal relationships were both highly self-relevant topics for the students interviewed; both topics invited self-reflection and evoked self-relevant talk. The semi-structured form of the interviews allowed to cover different self-concept aspects systematically, evoking narrations about the actual, ideal, ought, negative, and social self, and self-change by asking for positive and negative experiences, the current situation, wishes for the future and anticipated changes at the up-coming transition from university. The use of any metaphors in the standardized interview questions by the interviewer was carefully avoided and the interviewer was instructed to ask clarifying questions only in the participants own wording to avoid the induction of metaphors by the interviewer. Interviewer metaphor use was checked as part of the metaphor analysis described below.

Data Analysis - Study 1

All interviews were transcribed, and the entire text corpus was analyzed in a 3-step procedure, identifying metaphors, self-concept aspects and patterns of co-occurrences of metaphors and self-concept aspects.

Metaphor Analysis

All metaphorical expressions were identified in the entire text corpus. A first tentative list of possible metaphor source domains was provided by extensive linguistic research of conventional metaphors in German in the one hand (Jäkel, 1997), but also by metaphor research in English cognitive linguistics. As Lakoff (1987) argues, certain metaphor source domains, so-called kinesthetic image schemata, are based on fundamental human experiences, such as movement (PATH), bodily functions such as eating and digesting (BODY) or a vertical and front-back orientation in space (FRONT-BACK, TOP-DOWN) and can be found in every language. For a critical review of the concept of 'image schemata' and its assumed universality, see Gibbs & Colston, (1995) and Goodman & Elgin (1989). Thus equipped with a basic idea of possible metaphor source domains, coders first identified all metaphorical expressions, that is non-literal expressions, in the interviews. For instance, for the expression "*take one step at the time*" to be

identified as metaphor, it had to be clear from the immediate context of the expression that the interviewee was not talking about climbing stairs, but was for instance talking about self-related goals for the future after graduation from university. The criterion for the identification of a metaphorical expression was that the mapping process of projecting a source domain (e.g., PATH) onto a target domain (e.g., SUCCESS) had to be recognizable (Moser, 2000). In a further step, the metaphor source domain behind the analogy (= metaphor model) used in each metaphorical expression was identified, e.g. if the metaphorical expression “*take one step at the time*” was used in combination with talk about success, the metaphorical expression was identified as part of the metaphor model “SUCCESS IS A PATH”, and ascribed to the source domain “PATH”. Coders were instructed to assign all metaphorical expressions to the most prominent metaphor source domain, and thus to avoid multiple coding. For example, the metaphorical expression “*stepping on the gas*” was assigned to the source domain “TECHNOLOGY”, because driving a car and using the gas pedal means handling a technological device in the broader sense, and was seen as the dominant metaphor in this case, rather than assigning the metaphorical expression to the source domain “PATH”, which is implied in the action of “*stepping*” but was seen as secondary. Using this same procedure, all metaphorical expressions were then coded into categories of source domains such as “PATH,” “SPORTS,” “NATURE,” and so on. To insure independence and salience of metaphor categories, inter-rater reliability was measured among three independent raters. Using this procedure, 22 metaphor source domain categories resulted from the analysis and are presented in table 1, with inter-rater agreement ranging between $R=0.58$ and 0.98 for each of the 22 categories and with an overall reliability of Cohen’s $Kappa=0.83$ across all metaphor categories. Very rare metaphor source domains for which there were less than 20 occurrences (out of a total of 3899 metaphors in the entire data set), such as religious or gender metaphors were coded into the residual category of “other metaphors”. To further illustrate metaphor source domains, an example of a metaphorical expression is provided for each metaphor source domain in table 1.

Identification of Self-Concept Aspects

All direct and indirect self-relevant statements in the entire text corpus were identified and then coded into categories of self-concept aspects. As basis for the identification of self-concept aspects, current conceptualizations of the self in social psychology were used as proposed in self-discrepancy theory by Higgins (1987, 1989) and the self-schemata approach by Markus et al. (1986, 1987) described above. In their studies, they propose to distinguish between the actual self, ideal self, social self, ought self, negative self and self-change. A domain-specific self-conception theory was chosen for this study not only for its actuality, but also because using a domain-specific self-concept will allow to analyze whether there are specific metaphors used for a specific self-concept domain, such as the ideal self or not. For the analysis, all direct and indirect self-relevant statements in the interviews were identified in a first step. For example, the statement “*Deep down I consider myself to be a pessimistic person*” was identified as a direct self-relevant statement, while “*I don’t remember anything as important and intense as this experience*” was identified as an indirect self-relevant statement. All six self-concept aspects could be reliably identified in the text corpus: actual self, ideal self, ought self, negative self, self change, and social self (see table 2 in the results section below) and no residual category was needed. Inter-rater reliability for each of the six self-concept categories ranged between $R=0.63$ and 0.90 , with an overall reliability across all self-concept categories of Cohen’s $Kappa=0.79$. To further illustrate self-concept aspects, an example of self-relevant statements is provided for each self category in table 2.

Identification of Patterns

Metaphor analysis and the analysis of self-concept aspects were carried out with the support of ATLAS/ti 4.2, a software package supporting Boolean, semantic, and distance queries for complex analysis of textual data. In the first two steps, each level of analysis (metaphors and self-concept aspects) was analyzed separately as described above. In a third step, co-occurrences between metaphors and self-concept aspects were analyzed by using the co-occurrence operator in ATLAS/ti (Galliker, Herman, Imminger, & Weimer, 1998; Moser, 2000). This operator identifies all overlapping or intersecting codes for any coded text segment and for any pair of codes entered into the analysis as operands, which are metaphors and self-concept aspects in this study. Thus, all coded statements in the interviews that referred to specific self-concept aspects and co-occurred with specific metaphors, e.g. co-occurrences of statements about the ideal self with path metaphors and so on, could be identified. These frequencies of co-occurrences between self-concept aspects and metaphors helped identify patterns of associations between self-concept aspects and metaphors in the text, and were then further analyzed statistically by exporting the results of the co-occurrence analysis into SPSS and by testing them for significant differences in the data set, using Chi-square-statistics and configuration-frequency-analysis. Configuration frequency analysis (CFA) is a statistical procedure based on Chi-square, which allows for the analysis of large numbers of cross-tabs simultaneously and thus enables pattern recognition of significant combinations of metaphors and self-concept aspects in the present study.

This newly developed two-step procedure of co-occurrence analysis in ATLAS/ti, and further multivariate statistical analysis with SPSS, allowed testing for three-way interactions when working with double-coded textual data, one coding level being metaphor categories, and the other coding level being self-concept categories (Moser, 2003). It is important to note that the results of co-occurrence analyses are a special type of aggregated data referring to the total number of metaphors and self-concept aspects as data base, and not to the number of participants as data base.

RESULTS STUDY 1

Metaphor Analysis

When talking about themselves, participants used a total of only 22 metaphor source domains. This number of metaphor models is surprisingly low, considering that a total of 3899 metaphorical expressions could be identified in study 1 in only 12 interviews (table 1, row 1). Moreover, only eight source domains represented 68% of all metaphorical expressions participants used when talking about self-relevant experiences. Scientific and technological metaphors clearly dominated, with metaphorical expressions such as “*step on the gas*” when explaining the attitude towards the future, and “*being on the same wavelength*” when talking about relationship quality etc. These were followed by container, path, visual, balance, fighting, and economic metaphors. Inter-rater reliability measures were satisfactory for all metaphor categories with an overall Kappa coefficient of .83 across all metaphor categories (table 1, data represented in first rows).

Table 1. Metaphor Source Domain Frequencies, Reliabilities (Study 1 - Row 1, Study 2 - Row 2)

Rank	Category	N	%	Reliability R	Example of metaphorical expression
1.	Science/Technology	656	17	.84	Being on the same wave length
4.		135	8	.78	
2.	Container	498	13	.88	Being an open/closed person
3.		177	11	.89	
3.	Path	333	9	.86	Taking one step at a time
1.		252	15	.96	
4.	Visual	318	8	.99	Seeing the problem
7.		107	6	.87	
5.	Balance / Weight	260	7	.94	To shoulder responsibility
2.		178	11	.89	
6.	Fighting	218	6	.78	To take a stand
11.		63	4	.85	
7.	Economy	161	4	.81	Emotional costs
8.		88	5	.68	
8.	Law	16	4	.80	Allowing for something
10.		67	4	.86	
9.	Bonding	138	4	.93	Having strong family ties
12.		47	3	.80	
10.	Verticality	136	3	.88	Being beyond someone
15.		31	2	1.00	
11.	Nature	133	3	.74	To steal someone's thunder
13.		47	3	1.00	
12.	Body	119	3	.75	Feeling queasy about something
5.		127	8	.88	
13.	Play / Sports	101	3	.75	Making a poker face
14.		43	3	.88	
14.	Illness	91	2	.95	Delirious with joy
17.		22	1	.60	
15.	Acoustic	87	2	.98	To strike the right note
21.		14	1	.67	
16.	Near-far	86	2	.88	Being close to someone
6.		108	7	1.00	
17.	Part-whole	83	2	.58	To be part and parcel of something
9.		79	5	.71	
18.	Art	77	2	.86	Provide a framework for something
20.		15	1	1.00	
19.	Cycle	74	2	.89	Being subject to fluctuations
22.		11	1	.50	
20.	Front-back	53	1	.88	Doing something behind one's back
18.		22	1	.75	
21.	Tactile	44	1	1.00	Being touched by something
16.		24	1	1.00	
22.	Other metaphors	72	2	-	
22.		17	1	-	
Totals All categories		N	%	Cohen's Kappa	
Study 1		3899	100	.83	
Study 2		1692	100	.85	

'Other metaphors' are source domains with an occurrence of 20 or less metaphorical expressions in study 1 (RELIGION, GEDNER, TASTING, SMELLING) and 10 or less in study 2 (WORK, TASTING, SMELLING).

Identification of Self-Concept Aspects

Direct and indirect self-relevant statements were identified and coded into six different categories of self-concept aspects as described above. No residual category was needed and inter-rater reliabilities were satisfactory for all self-concept categories (table 2, data of study 1 represented in the first rows). Inter-correlations between self-concept aspects showed significant correlations ($p < .05$) between actual self and self change ($r = .62$), ideal and social self ($r = .65$), ought and ideal self ($r = .78$) and ought and social self ($r = .60$).

Table 2. Self-Concept Categories Frequencies, Reliabilities (Study 1 - Row 1, Study 2 - Row 2)

Rank		N	%	Reliability R	Examples of self-relevant statements
1.	Ideal self	317	27	.90	I know exactly what my dream job has to look like
2.		224	26	.94	
2.	Actual self	278	24	.74	I believe being conscientious is just me
3.		165	19	.85	
3.	Social self	268	23	.78	I myself am not coming from an academic background
1.		307	36	.76	
4.	Negative self	132	11	.63	The others are excellent students, I am sure I cannot do this
4.		71	8	.93	
5.	Ought self	91	8	.65	I set the same standards for my partner as for myself
6.		38	4	1.00	
6.	Self-change	78	7	.68	Earlier, I never thought I could be on the same level as them
5.		45	5	.78	
Totals		N	%	Cohen's Kappa	
Study 1		1164	100	.79	
Study 2		850	100	.80	

Identification of Patterns

In study 1, configuration-frequency-analysis of co-occurrences between metaphors and self-concept aspects showed only a few statistically significant associations, such as a significant over-representation of weight and balance metaphors for the actual self (+6% of the general distribution, $p < .05$), and a significant under-representation of fighting metaphors for the ideal self (-4% of the general distribution, $p < .05$). Further patterns were found between ought self and law metaphors (+5%), ideal self and path metaphors (+4%), negative self and balance metaphors (-5%), self change and visual and economic metaphors (both -4%), or social self and visual metaphors (-4%), but were not statistically significant.

There were significant differences between men and women for overall metaphor use ($p = 0.000$), but not for the three-way interaction between gender, metaphor source domains, and self-concept aspects. However, analysis of effect size showed that the effect was not very strong with Cramer's $V = .113$, and the high significance probably due to the large number of almost 4000 metaphors. This was confirmed by a comparison of relative frequencies of co-occurrences for all metaphor source domains, which showed that relative differences between men and women ranged only between $\pm 1\%$.

Differences were also found in metaphor use at the individual level. Configuration-frequency analysis showed significant differences among the participants in overall metaphor use ($p=0.000$), but also significant differences for single metaphor source domains for 9 out of 12 participants. Otherwise rather rare metaphor source domains, such as metaphors of the domains of art, near-far, body, and play/sports were significantly over-represented at the individual level in study 1. These individual differences were also consistent across the different self-concept aspects of actual self, ought self, negative self, social self, and self change, as well as across the content categories of relationship quality and success.

Controls

All results were controlled for the number of words in each interview, as lengths of interviews varied considerably and word count and number of metaphors correlated significantly ($r = .88$, $p < .01$). However, the relative number of metaphors was constantly between 2% and 3% for all interviews in relation to the total word count in each interview.

DISCUSSION - STUDY 1

It was the first aim of study 1 to determine whether metaphors were used when talking about the self. It can be safely said that talking about the self was highly metaphorical, the textual data from 12 interviews yielding a total of a 3899 metaphorical expressions, which could be reliably identified across three independent raters. The second aim was to arrive at a reliable classification of metaphor source domains for all metaphorical expressions. This second aim was achieved by identifying 22 categories of metaphor source domains with satisfactory inter-rater reliabilities (see table 1). It was also hypothesized that the metaphors found would mostly come from conventional metaphor source domains. This can indeed be confirmed, because the results of study 1 are consistent with findings of linguistic empirical studies of conventional metaphor use in German (Baldauf, 1997; Debatin et al., 1997; Jäkel, 1997; Traugott, 1985). Moreover, the fact that only eight source domains represented 68% of all metaphors identified gives further support to the notion that the self is expressed and communicated in conventional terms. Further evidence of conventional metaphor use was also found in the identification of the so-called “kinesthetic image schemata” as metaphor source domains. Lakoff and Johnson (1980) postulate image schemata to be universally valid metaphor source domains and expect to find them in all languages. So-called image schemata represent fundamental human experiences such as being able to move, e.g., “*move on with my life*”, basic bodily experiences, e.g., “*having to digest the bad news first*”, and their physical limitations, orientation in space, and so on. Image schemata include the metaphor source domains of CONTAINER, PATH, BALANCE, BONDING, CYCLE, NEAR-FAR, VERTICALITY, PART-WHOLE, and FRONT-BACK, which indeed could all be identified in the empirical data of study 1. Three further metaphor source domains (VISION, ACOUSTICS, and TOUCH) also refer to basic sensory activities and are therefore assumed to be related to the basic bodily experiences represented by image schemata. All other metaphor source domains are not only found in other empirical studies on conventional metaphor use, but also represent metaphorical expressions of central domains of experience in industrialized countries, such as SCIENCE and TECHNOLOGY, ECONOMICS, LAW, and SPORTS, as well as the omnipresent domains of HEALTH and ILLNESS, BODY, and NATURE.

It was also possible to reliably identify six different self-concept aspects (see table 2). This is important as a basis for the more complex analysis of pattern identification, but also because up to date, the different aspects of the self-concept postulated in self-discrepancy and self-schemata theory have rarely been identified in statements made in natural speech.

When looking at corresponding patterns of self-concept aspects and metaphor source domains, there was a preference for representing the actual self in terms of balance metaphors. Students described their current situation as being in or off balance with respect to their self-perception. The metaphor source domain of balance for the actual self makes sense, because it lies in the very nature of the concept of actual self that it is a relational concept, which is always contrasted to either the negative or the ideal self or both. Balance metaphors allow expressing metaphorically how much somebody feels weighted down or lifted up by (un-)satisfactory circumstances, and which aspects of the self are in or off balance when putting them on the scale of desirable and non-desirable self-aspects.

Not surprisingly, there was also a significant under-representation of fight and war metaphors for the ideal self. Since war metaphors are generally negatively co-notated, this metaphor source domain is rarely chosen to describe the ideal self. On the other hand, there was an overrepresentation of path metaphors for the ideal self, thus symbolizing the ideal self as the goal to attain at the end of the path, as the direction to take for self development and so on. There was also a correspondence between ought self and law metaphors, confirming that norms and rules important for the self are expressed in corresponding metaphors referring to social and legal conventions.

Gender differences were also found, which is not surprising considering that metaphors convey social conventions and are known to differ along age and social differences. However, the effect size was small, so that interpretation of these gender differences would need further confirmation in larger samples. Individual differences in metaphor use were another interesting pattern, which might indicate habitual metaphor use and an individual affinity for certain domains of activity or interest, such as sports, art and so on. As an experimental study has shown (Ottati et al., 1999), individual interests and experiences in certain fields such as sports will influence the attention paid to information provided in sports metaphors, even if the information itself is negative. Individual metaphor preferences thus have important implications for persuasion, negotiation and decision-making research.

To confirm the metaphors identified in study 1, a second study was conducted with a larger sample of different university students, using a more standardized procedure and additional personality measures. An important aspect was also to see whether the inductively identified self-concept aspects could be validated internally by additional well-established personality measures as they were central to the identification of self-metaphor-patterns.

METHOD STUDY 2

Study 2 was designed as a replication study with the same sampling frame as in study 1, only with a larger sample of students and a more standardized written procedure with the identical interview schedule. Thus, the same metaphor source domains were expected to be found in the second study to confirm the reliability of results of the first study. Additionally, participants completed the German version of the NEO-Five-Factor Inventory (NEO-FFI, Borkenau & Ostendorf, 1993). Since content-analysis of self-concept aspects is not an established methodology in self-concept research, it was important to have an established measure of personality in addition to the content-analysis of written statements. The following significant correlations between self-concept aspects and big five dimensions were expected: It was expected that the negative self would correlate positively with neuroticism and negatively with extraversion, the ought self positively with conscientiousness and negatively with extraversion, and that the social self should correlate positively with openness to experience and agreeableness.

Sample

63 graduate students from the University of Zurich participated in study 2. Participants were in average 24 years old, psychology majors and mostly female (N=50 or 79% female students, N=13 or 21% male students).

Procedure and Materials

Study 2 was conducted in the lab and students were asked to write about their current self-perception, about at least two incidents of success and failure in both professional and private life in the past, and about their feelings, hopes, and fears for the future, both privately and professionally. The written questions were identical to the interview questions in study 1 (see interview schedule in appendix). Afterwards, participants completed the German version of the NEO-Five-Factor Inventory (NEO-FFI, Borkenau & Ostendorf, 1993).

Data Analysis - Study 2

For the written reports of the 63 students, data analysis was identical to the 3-step procedure described for study 1, with two separate levels of analysis for self-concept aspects and metaphors. Again, inter-rater reliability was measured for all categories, and is reported in tables 1 and 2, where all results for study 2 are reported in the second rows. In a third step, co-occurrences between metaphors and self-concept aspects were calculated with the Atlas/ti software, and the resulting frequencies were tested for statistical significance, using crosstabs, and configure frequency analysis like in study 1. In addition, correlations between the big five factors, self-concept aspects and metaphors were analyzed in study 2.

RESULTS - STUDY 2

Metaphor Analysis

First of all, replication of the 22 metaphor source domains found in study 1 was successful in study 2 (table 1). Reliability measures were similar or above the ones for study 1, with an overall Cohen's Kappa of .85. Ranking of the metaphor categories changed somewhat, but again 71% of

all metaphors are represented by only 8 metaphor source domains, which were identical to the ones found in study 1.

Several gender differences could be found in metaphor use in study 2, with a stronger effect than in study 1 (Cramer's $V = .164$, $p < .01$). Men in the sample of study 2 showed a significantly greater preference for CONTAINER metaphors, and a significantly lower preference for ECONOMIC metaphors than women, while the overall frequency of metaphor use shows no gender difference.

Identification of Self-Concept Aspects

The same procedure as in study 1 was applied to identify all direct and indirect self-relevant statements. Again, it was possible to code all self-relevant statements into the same six categories of self-concept aspects as in study 1. No residual category was needed and inter-rater reliabilities were satisfactory for all self-concept categories, with an overall Cohen's Kappa of .80 (table 2, data of study 2 represented in the second rows). No gender differences were found for self-relevant statements.

Inter-correlations between self-concept aspects showed significant correlations ($p < .05$) between actual and ought self ($r = .27$), ideal and social self ($r = .27$), and ought and social self ($r = .28$). There were also significant correlations between self-concept aspects and the Big Five dimensions, thus confirming that the self-concept aspects analyzed in studies 1 and 2 did actually capture relevant personality dimensions. As expected, statements about the negative self correlated positively with neuroticism ($r = .33$, $p < .01$), and negatively with extraversion ($r = -.29$, $p < .05$). Statements about the ought-self also correlated negatively with extraversion ($r = -.26$, $p < .05$) as expected, but did not with conscientiousness, and statements about the social self correlated positively with openness to experience ($r = .27$, $p < .05$) as expected, but not with agreeableness.

Identification of Patterns

The configuration-frequency-analysis of co-occurrences in study 2 showed several significant associations between metaphors and self-concept aspects ($p < .05$ for all results reported below): For example between actual self and path metaphors (+4% above the expected distribution) and near-far metaphors (-3%), between statements about the ideal self and path metaphors (+5%) and visual metaphors (-6%), the negative self and visual and verticality metaphors (both +5%) and near-far metaphors (-6%), ought self and play and sports (+20%) and law metaphors (+6%) and path metaphors (-5%), self change and path (+6%) and visual (+5%) and balance metaphors (-5%), and social self and path metaphors (-4%).

The analysis on the textual level was in part confirmed by further correlational analysis at the subject level, where associations between self-concept aspects and metaphors as well as NEO-FFI dimensions and metaphors were analyzed and are represented in table 3.

Table 3. Correlations between Metaphors, Self-Concept Aspects, & Big 5 Dimensions

	Actual Self	Ideal Self	Negative Self	Ought Self	Self Change	Social Self	Agreeableness	Openness	Extraversion	Neuroticism	Conscientiousness
Science&technology	.32*	.18	.02	.19	.09	.19	.26*	.21	-.03	-.01	.08
Container	.26*	-.13	.18	.11	.53**	.24	.14	.30*	.07	.08	.02
Path	.43**	.15	.17	.24	.32*	.30*	.03	.28*	-.05	-.16	.04
Visual	.50**	.05	.10	.33*	.45**	.29*	.12	-.06	-.01	-.03	-.13
Balance & weight	.31*	.18	.17	.24	.18	.42**	.15	.05	.04	.01	.12
Fighting	.23	.12	.27	.35	.04	.27*	.04	.00	.04	-.16	.04
Law	.16	.20	-.03	.32*	.14	.33*	.05	.09	-.10	-.04	.12
Economy	.09	-.01	.12	.30*	.13	.20	-.18	-.05	.03	-.17	.23
Bonding	.17	.14	.22	.19	.39**	.14	-.14	.14	-.14	.36**	-.06
Verticality	-.05	-.18	.05	.20	.09	-.12	-.01	-.12	-.21	.07	-.18
Nature	.29*	.05	.29*	.10	.33**	-.04	.05	-.02	-.01	.00	-.23
Body	.17	.14	.18	.29*	.24	.33**	.25*	-.11	.02	.07	-.01
Play & sports	.33**	.12	-.04	.33**	-.03	.33**	.05	.24	-.06	-.10	-.08
Illness	-.05	.24	.01	-.16	.13	.24	-.11	.07	.09	-.03	.07
Acoustic	.16	.01	.01	-.09	.10	.09	.05	-.17	-.10	-.01	-.17
Near & far	.13	.10	-.21	.03	.23	.27*	.07	.03	.21	.01	.08
Part & whole	.19	.02	-.10	.20	.25	.25**	.18	.18	.22	-.11	.15
Art	.07	-.19	.05	-.04	-.02	-.12	-.13	-.21	-.08	.17	.05
Cycle	-.18	.02	-.13	-.20	.09	.07	.22	-.03	.21	-.10	.20
Front & back	.38**	.09	-.14	.21	.17	.12	.18	.13	.01	-.15	.01
Tactile	.23	.05	.16	.11	-.00	.17	.04	.04	-.03	-.09	-.19
Residual metaphors	.07	.00	.11	.00	.16	.13	.13	.16	-.01	-.13	-.23

** = p < .01, * = p < .05

DISCUSSION - STUDY 2

Both levels of analysis, metaphor source domains and self-concept aspects could be reliably confirmed in study 2 for a larger sample under more standardized conditions, which was the central aim of study 2. Again a very small number of only eight metaphor source domains sufficed to describe 71% of all metaphorical expressions found in the written texts (68% in study 1). Content analysis of self-concept aspects was further confirmed by the additional assessment with the NEO-FFI dimensions and showed significant correlations between self-concept aspects and the dimensions of the five factor model of personality as expected. Exceptions were found for the ought self, which correlated negatively with extraversion as expected, but not with conscientiousness, and for the social self, which correlated positively with openness to experience as expected, but not with agreeableness.

The correlations between metaphors, self-concept aspects and big five dimensions at the individual subject level in study 2 gave further insight into the metaphorical representation of

self-knowledge. As shown in table 3, SCIENCE and TECHNOLOGY metaphors correlated significantly with statements about the actual self and agreeableness. This most likely reflects the typical language use and social norms of the student sample, where technical terms and scientific expressions are widely accepted and representative of the actual self and the relevant peer group of fellow students. Container metaphors correlated with statements about self change and the NEO-FFI dimension “openness to experience”. This is not surprising either, because in western industrial countries the self is often metaphorically conceptualized as CONTAINER, which needs to be “*opened up to changes and new experiences*” (Lakoff & Johnson, 1980; Wolf, 1994). Similarly, PATH metaphors also correlated with actual self, self change, social self, and openness to experience, which can exemplified by examples of metaphorical speech such as “*finding one’s path*”, “*being on the right path*”, “*being at a crossroad*”, “*heading in the same direction*” etc. and thus suitable to expressing companionship, processes of self-search, self-assurance and self-orientation in times of change. VISUAL metaphors correlated with actual, ought, and social self and self change statements, thus reflecting the cultural prominence of “*seeing*” as synonymous to “*knowing*” about one self (D'Andrade, 1995). BALANCE and WEIGHT metaphors correlated with statements about the actual and social self, metaphorically mapping the experience of being “*balanced*” or “*unbalanced*” within oneself as well as in social relations. FIGHTING metaphors only correlated with the social self, indicating that “*fighting, losing, winning and fleeing*” always needs an ally or an enemy. LAW metaphors are the metaphorical representation of norms, rituals and social conventions, and are consequently correlated with statements about the ought-self and social self. ECONOMIC metaphors correlated only with the ought self, possibly reflecting individual levels of reciprocity in social relationships and levels of achievement participants set themselves, representing their respective costs and rewards in economic metaphors. BONDING metaphors correlated with statements about self change, but also with neuroticism, possibly reflecting the need to change social ties or the desire for more social ties. NATURE metaphors were correlated with actual and negative self and self change, reflecting the perception of personal “*growth one lacked, possessed or aimed to achieve*”. Metaphors referring to BODILY FUNCTIONS were correlated with ought self, social self and agreeableness, and thus reflecting what is culturally and socially acceptable in terms of basic needs such as “*hunger, thirst, digestion*” etc. Similar to LAW metaphors, PLAY and SPORTS metaphors are often used to represent social norms and cultural conventions, and were consequently correlated with the actual self, ought and social self. PART-WHOLE metaphors were correlated with the social self, thus mapping metaphorically the extent to which one “*felt part or not of a larger social network*” and “*embedded*” in a whole. Last, FRONT-BACK metaphors were correlated with the actual self, thus showing the participants’ current orientation in a metaphorical space, representing norms, goals and significant others in that personal space and in relation to the self.

GENERAL DISCUSSION

It was the aim of the research presented here to look at conventional metaphors of the self as a symbolic environment. It was hypothesized that talking about oneself and the different aspects of self-schemata would a) require the use of metaphors, and b) follow conventional metaphor use by drawing metaphors from a limited pool of widely spread conventional metaphor source domains. This is of great interest to social psychologists, because looking at metaphors of the self will reveal the interaction between social and cultural concepts and self-knowledge at a micro-level. It would also mean that the notion of “*authenticity*” of self-knowledge would have

to be discussed critically from both a methodological and theoretical point of view. This is of special importance for research on the self as it relies to a large extent on verbal data.

As the results show, the complex topic of the self is largely expressed in terms of conventional metaphors. In both studies, the same limited number of conventional metaphor source domains was found when people talked about the self. These conventional metaphor source domains consist either of concrete experiences, which are often originally of a physical nature, such as “*walking along a path*”, “*being ill*”, or else refer to central cultural skills, such as the use of technical devices, like “*driving a car*”, “*using a computer*”, and so forth. These concrete experiences are used as metaphor models to express and communicate the individual experiences of the abstract concept of “self”.

In study 2, it was possible to confirm the metaphor source domains found in study 1 for the chosen sampling frame of university students and to relate the results of the content analysis of self-concept aspects in study 1 to the NEO-FFI dimensions as expected. Study 2 also provided further insight into the metaphorical mapping of the self-concept. The dominance of SCIENCE and TECHNOLOGY metaphors revealed a metaphor use typical for the student samples in both studies. The self was often metaphorically represented as a CONTAINER, thereby following cultural norms of representation in western societies (D'Andrade & Strauss, 1992; Lakoff, 1987). The importance of self change at the point of graduation from university was represented by using PATH and NATURE metaphors. VISUAL metaphors were often used synonymous for knowledge. Equally important was the metaphorical representation of social ties by using BALANCE and BONDING metaphors, but also FIGHTING metaphors to indicate boundaries and conflict, and the importance of following rules by using PLAY and SPORTS metaphors. Despite individual differences, speaking and writing about the self seems to be primarily governed by social and cultural conventions, which are represented in the conventional metaphors used in both samples. At the same time, it is also important to note that the use of conventional metaphors will also ensure communication, whereas new and unconventional metaphors always pose the risk of misunderstanding.

It is important to note that at this point the results are limited to the students samples used in both studies and cannot be generalized beyond that particular sampling frame. Further research should therefore aim to expand the knowledge about metaphorical representations of self-knowledge to other (sub-)cultures. It will be important to study whether the same few metaphor source domains and conventional metaphors are used to describe the self and whether metaphor preferences and/or rank of preferred metaphor source domains differ. Whereas metaphors based on physical abilities such as movement, taste, sight, and so forth, should not differ very much, metaphors based on cultural and technical skills should differ according to educational background, age group, and subculture to name only a few.

Still, the presented research puts forward several questions at the theoretical and methodological level. First it is important to note that metaphor analysis alone will not be able to solve the fundamental question of the relation between language and cognition, which of course is implied in this research. Yet at the same time, the proposed method of metaphor analysis highlights the question of how the self relates to language as one of the main agents of socialization and enculturation. From the point of view of metaphor analysis and the results of the presented studies, the individual “metaphorical self” seems not to be defined by unique or innovative metaphors for private and inner experiences, but rather by a specific individual combination of

conventional, everyday metaphors. The conventional metaphors are themselves part of a limited pool of culturally and socially acceptable representations of knowledge about the self and self-related processes and experiences.

Methodological Implications

This puts forward many questions of what is actually measured when the self is assessed through standardized scales or open questions. Is it the explicit content of self-statements, the self-knowledge revealed in statements such as “*I am ambitious*”? Or is it rather implicit in the way the self is expressed metaphorically as a fighter, as a wanderer on a path, an actor on a stage? And how do the two aspects of self-expression, self-knowledge and metaphorical structure relate to each other? Is one an explicit and the other an implicit measure of self? And what does an implicit metaphorical measure reveal about the self if the metaphors used are conventional and not idiosyncratic? These are central questions for a field of research concerned with a construct described as a set of beliefs about the self (Baumeister, 1998). How are these beliefs shaped by cultural and social conventions inherent in the language used to express them? What is it social psychologists measure and describe in statements, scales, and interviews and to what extent might methods in self-concept research be advanced by measuring the culturally shared knowledge about the self as represented in metaphors – carefully and reliably? If we agree that metaphor models might play an important role when assessing the self, this suggests further underlying questions about research practices in studying the self: What are the defining features of the self? Is the self expressed authentically when participants talk about themselves in interviews, give statements such as in the TST by Kuhn or respond to standardized questionnaires? Can the personal information given by participants be interpreted directly as “the self,” on an item-by-item basis, where values on the self-concept scale or the structure of the self-narration reveal directly the internal workings of the unique, authentic, and highly individualistic self? Or might the uniqueness, authenticity, and individuality of the self be considered instead as the specific individual choice and combination of culturally and socially defined schemata of possible self-conceptions, for example as being typical of a student sample where technical metaphors might result in higher agreement because they fit the socially accepted language use for students? A cursory perusal of often used self-concept scales such as the Frankfurt self-concept scales (Deusinger, 1986) shows that many items contain metaphors, which is not surprising, since the self has to be expressed in concrete terms. A systematic analysis of metaphors in standardized self-concept scales, and secondary analyses of responses to these items, might reveal whether there are systematic differences in answers in relation to the metaphors used, and whether the metaphorical structure of items should be given more consideration.

Practical Implications of Individual Metaphor Preferences

The individual metaphor preferences in study 1 raise the question of how to understand these differences and their possible consequences for self perception and action. So far, there exist a few empirical studies indicating that metaphors might have functions similar to those of implicit theories (Dweck, 1996), mind-sets (Gollwitzer, 1990), habits (Aarts & Dijksterhuis, 2000) and automatic behavior (Bargh & Barndollar, 1996). One of these is the experimental study by Gentner and Gentner (1983) on metaphor models of electricity that was mentioned above. Equally, the study by Ottati et al. (1999) has shown that metaphors influence information processing of self-relevant information: If the metaphors used to convey a message were seen as

self-descriptive, people considered these messages as more important and paid more attention even if the content of the message itself was negative. The experiments not only showed the persuasive power of metaphors, but also the important link between metaphors and self-knowledge. The findings are also consistent with further studies showing that the use of metaphors facilitates negotiation (Loewenstein et al., 1999; Thompson et al., 2000). Metaphors have also been applied to study inter-group relations in social and organisational psychology, especially in the case of organisational change, where metaphors can be used to explicate different perspectives and help to manage processes of social categorization of in- and out-group relationships (Tsoukas, 1991; Bouwen, 1998; Palmer & Dunford, 1996; Putnam, Phillips & Chapman, 1996; Klimoski & Mohammed, 1994; Hill & Levenhagen, 1995; Moser, 2004). Up to date, the practical implications of metaphors for knowledge management processes and negotiations have not been fully explored yet. In addition, the analysis of individual differences in metaphor use would be of clinical interest and support approaches in psychotherapy, which use metaphors to alter individual self perception and problem-solving skills (Combs & Freedman, 1990; Efran, Lukens, & Lukens, 1990; Roderburg, 1998; Schachtner, 1999; Siegelman, 1990).

Theoretical Implications for the Study of the Self in Social Psychology

An ecological conception of self may provide additional help in understanding the relation of language and self and the role of metaphors. Hormuth (1990) studied the influence of the physical environment on relocation and self-change processes and, in his “ecology of self”, postulated that things have the following functions for the self: Things enable the performance of self-relevant actions, either by being instrumental (the guitar to play music) or by providing the necessary physical setting (mountains for skiing); things can activate self-relevant cognitions, such as memories or important goals (looking at pictures, visiting the old school); things enable self-presentation strategies (clothes, music collection); and things can afford certain behaviors and provide the setting for certain behaviors (sitting on a chair, being quiet in church).

When applying this to language from an individual point of view, language is first of all a symbolic environment for the individual that offers certain patterns of interpretation, such as metaphor models. People have to acquire an adequate mastery of language before they are able to make selective use of the symbolic environment of language and possibly even add to it. Based on such an understanding of language, metaphors can be defined as part of the symbolic environment, and postulated to have functions similar to those of the physical environment (Moser, 2003): Metaphors help to express and communicate inner needs and feelings (feelings of joy, anger, fear), metaphors might activate self-relevant cognitions if they conform to individual attitudes (sport lovers react strongly to messages using sports metaphors), and metaphors can be used as self-presentation strategies by conveying a desired image of the future self to others in the sense of Goffman, e.g. the desire to appear young(er) by using metaphors popular with teenagers. Metaphors may thus be defined as mind settings in the symbolic environment (Moser, 2003), in analogy to the concept of behavior settings in the physical environment (Barker, 1968). As mind settings, metaphors are relevant for self-perception and behavior. At the same time, metaphors do not determine the self or behavior. They are, as the term mind setting suggests, a frame of reference for thought, emotions and actions that should be considered when studying the self.

REFERENCES

- Aarts, H., & Dijksterhuis, A. (2000). Habits as knowledge structures: Automaticity in goal-directed behavior. *Journal of Personality and Social Psychology*, 78(1), 53-63.
- Allbritton, D. W. (1995). When metaphors function as schemas: Some cognitive effects of conceptual metaphors. *Metaphor and Symbolic Activity*, 10(1), 33-46.
- Anderson, J. R. (1996). *Kognitive Psychologie* (2nd ed.). Heidelberg: Spektrum Akademischer Verlag.
- Baldauf, C. (1997). *Metapher und Kognition. Grundlagen einer Theorie der Alltagsmetapher*. Frankfurt a.M.: Peter Lang.
- Ballarini, L. (1988). Metaphor and teen-ager talk. *Metaphor, Communication & Cognition*(2), 95-99.
- Bargh, J. A., & Barndollar, K. (1996). Automaticity in action: The unconscious as repository of chronic goals and motives. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action. Linking cognition and motivation to behavior*. New York: Guilford.
- Barker, R. G. (1968). *Ecological psychology*. Stanford, CA: Stanford University Press.
- Baumeister, R. F. (1998). The self. In D. T. Gilbert, S. T. Fiske & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., pp. 680-740). Boston, MA: McGraw-Hill.
- Baumeister, R. F. (1998). The self. In D. T. Gilbert, S. T. Fiske & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., pp. 680-740). Boston, MA: McGraw-Hill.
- Borkenau, P., & Ostendorf, F. (1993). *Neo-Fünf-Faktoren-Inventar (NEO-FFI) nach Costa und McCrae*. Handanweisung. Göttingen: Hogrefe.
- Bouwen, R. (1998). Relational construction of meaning in emerging organization contexts. *European Journal of Work and Organizational Psychology*, 7(3), 299-319.
- Someren, H. P. A. Boshuizen, T. de Jong & P. Reimann (Eds.), *Learning with multiple representations* (pp. 175-196). Oxford: Elsevier.
- Buchholz, M. B. (1996). *Metaphern der 'Kur'. Eine qualitative Studie zum psychotherapeutischen Prozess*. Opladen: Westdeutscher Verlag.
- Combs, G., & Freedman, J. (1990). *Symbol, story, ceremony. Using metaphor in individual and family therapy*. London: Norton.
- Cooley, C. H. (1902). *Human nature and the social order* (Neuaufgabe 1964: New York: Schocken ed.). New York: Scribner's Sons.

Coupland, N., & Coupland, J. (1995). Discourse, identity, and aging. In J. F. Nussbaum & J. Coupland (Eds.), *Handbook of communication and aging research* (pp. 79-103). Mahwah, NJ: Erlbaum.

Csikszentmihalyi, M., & Rochberg-Halton, E. (1981). *The meaning of things: Domestic symbols and the self*. Cambridge: Cambridge University Press.

D'Andrade, R. (1995). *The development of cognitive anthropology*. Cambridge: Cambridge University Press.

D'Andrade, R., & Strauss, C. (Eds.). (1992). *Human motives and cultural models*. Cambridge: Cambridge University Press.

Deaux, K. (1996). Social identification. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology. Handbook of basic principles* (pp. 777-798). New York: Guilford.

Debatin, B., Jackson, T. R., & Steuer, D. (Eds.). (1997). *Metaphor and rational discourse*. Tübingen: Niemeyer.

Deusinger, I. M. (1986). *Die Frankfurter Selbstkonzeptskalen (FSKN)*. Göttingen: Hogrefe.

Dittmar, H. (1992). *The social psychology of material possessions. To have is to be*. Hertfordshire: Harvester Wheatsheaf.

Dutke, S. (1994). *Mentale Modelle: Konstrukte des Wissens und Verstehens. Kognitionspsychologische Grundlagen für die Software-Ergonomie*. Göttingen: Verlag für Angewandte Psychologie.

Dweck, C. S. (1996). Implicit theories as organizers of goals and behavior. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action. Linking cognition and motivation to behavior* (pp. 69-90). New York: Guildford Press.

Edwards, D., & Potter, J. (1992). *Discursive psychology*. London: Sage.

Efran, J. S., Lukens, M. D., & Lukens, R. J. (1990). *Language, structure, and change. Frameworks of meaning in psychotherapy*. London: Norton.

Fiedler, K., Semin, G. R., Finkenauer, C., & Berkel, I. (1995). Actor-observer bias in close relationships: The role of self-knowledge and self-related language. *Personality and Social Psychology Bulletin*, 21(5), 525-538.

Franzoi, S. L. (1996). *Social psychology*. Dubuque, IA: Brown & Benchmark.

Galliker, M., Herman, J., Imminger, K., & Weimer, D. (1998). The investigation of contiguity. Co-occurrence analysis of print media using CD-ROMs as a new data source, illustrated by a discussion on migrant delinquency in a daily newspaper. *Journal of Language and Social Psychology*, 17(2), 200-219.

- Gentner, D. (1989). The mechanisms of analogical learning. In S. Vosniadou & A. Ortony (Eds.), *Similarity and analogical reasoning* (pp. 199-241). Cambridge, MA: Cambridge University Press.
- Gentner, D., & Grudin, J. (1985). The evolution of mental metaphors in psychology: A 90-year retrospective. *American Psychologist*(40), 181-192.
- Gentner, D., & Gentner, D. R. (1983). Flowing waters and teeming crowds: Mental models of electricity. In D. Gentner & A. L. Stevens (Eds.), *Mental models* (pp. 99-129). Hillsdale, NJ: Erlbaum.
- Gentner, D., & Wolff, P. (2000). Metaphor and knowledge change. In E. Dietrich & A. Marksman (Eds.), *Cognitive dynamics: Conceptual change in humans and machines* (pp. 295-342). Mahwah, NJ: Lawrence Erlbaum Associates.
- Gergen, K. J., & Gergen, M. M. (1988). Narrative and self as relationship. In L. Berkowitz (Ed.), *Advances in experimental social psychology*. New York: Academic Press.
- Gibbs, R. W., Jr. (1992). Categorization and metaphor understandig. *Psychological Review*, 99(3), 572-577.
- Gibbs, R. W., Jr., & Colston, H. L. (1995). The cognitive psychological reality of image schemas and their transformations. *Cognitive Linguistics*, 6-4, 347-378.
- Gigerenzer, G. (1991). From tools to theories: A heuristic of discovery in cognitive psychology. *Psychological Review*, 98(2), 254-267.
- Giles, H. (1978). Linguistic differentiation in ethnic groups. In H. Tajfel (Ed.), *Differentiation between social groups* (pp. 361-393). London: Academic Press.
- Giles, H., Bourhis, R. Y., & Taylor, D. M. (1977). Towards a theory of language in ethnic group relations. In H. Giles (Ed.), *Language, ethnicity, and intergroup relations* (pp. 307-348). London: Academic Press.
- Glucksberg, S. (1989). Metaphors in conversation: How are they understood? Why are they used? *Metaphor and Symbolic Activity*(4), 125-143.
- Goffman, E. (1959). *The presentation of the self in everyday life*. New York: Doubleday.
- Gollwitzer, P. M. (1990). Action phases and mind-sets. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition. Foundations of social behavior* (pp. 53-92). New York: Guilford.
- Goodman, N., & Elgin, C. Z. (1989). *Revisionen, Philosophie und andere Künste und Wissenschaften*. Frankfurt a.M.
- Greenwald, A. G., & Pratkanis, A. R. (1984). The self. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition* (Vol. III, pp. 129-178). Hillsdale, NJ: Erlbaum.

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94, 319-340.

Higgins, E. T. (1989). Self-discrepancy theory: What patterns of self-beliefs cause people to suffer? In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 22, pp. 96-136). San Diego, CA: Academic Press.

Higgins, E. T., van Hook, E., & Dorfman, D. (1988). Do self-attributes form a cognitive structure? *Social Cognition*, 6(3), 177-207.

Hill, R. C., & Levenhagen, M. (1995). Metaphors and mental models: Sensemaking and sensegiving in innovative and entrepreneurial activities. *Journal of Management*, 21(6), 1057-1074.

Hormuth, S. E. (1990). *The ecology of the self. Relocation and self-concept change*. Cambridge: Cambridge University Press.

Jäkel, O. (1997). *Metaphern in abstrakten Diskurs-Domänen. Eine kognitiv-linguistische Untersuchung anhand der Bereiche Geistestätigkeit, Wirtschaft und Wissenschaft*. Frankfurt a.M.: Peter Lang.

James, W. (1890). *The principles of psychology* (Neuaufgabe 1975: Cambridge, MA: Harvard University Press ed.). New York: Holt.

Jones, E. E., & Gerard, H. B. (1967). *Foundations of social psychology*. New York: Wiley.

Kerby, A. P. (1991). *Narrative and the self*. Bloomington, IN: Indiana University Press.

Kihlstrom, J. F., & Klein, S. B. (1994). The self as a knowledge structure. In R. S. Wyer, Jr. & T. K. Srull (Eds.), *Handbook of social cognition* (2nd ed., Vol. I: Basic processes, pp. 153-208). Hillsdale, NJ: Erlbaum.

Klimoski, R., & Mohammed, S. (1994). Team mental model: Construct or metaphor? *Journal of Management*, 20(2), 403-437.

Kuhn, M. H., & McPartland, T. S. (1954). An empirical investigation of self attitudes. *American Sociological Review*, 19, 68-76.

Kuhn, T. (1962). *The structure of scientific revolutions*. Chicago: University of Chicago Press.

Lakoff, G. (1987). *Women, fire, and dangerous things. What categories reveal about the mind*. Chicago: University of Chicago Press.

Lakoff, G. (1993). The contemporary theory of metaphor. In A. Ortony (Ed.), *Metaphor and thought* (2nd ed., pp. 202-251). Cambridge: Cambridge University Press.

Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago: University of Chicago Press.

Langacker, R. W. (1987). *Foundations of cognitive grammar (Vol. 1: Theoretical prerequisites)*. Stanford: Stanford University Press.

Lankton, C. H., & Lankton, S. R. (1991). *Geschichten mit Zauberkraft. Die Arbeit mit Metaphern in der Psychotherapie*. München: Pfeiffer.

Liebert, W.-A. (1993). Zur soziohistorischen Dynamik von Sprache und Kognition. Die Emergenz des Metaphernmodells 'Geld ist Wasser' im 19. Jahrhundert. *Papiere zur Linguistik*, 49(2), 151-157.

Liebert, W.-A. (1995). The lexicon of metaphor models as a mental tool for analogical problem-solving in science. Paper presented at the Current Approaches to the Lexicon. A Selection of Papers Presented at the 18th LAUDSymposion, Duisburg.

Liebkind, K. (1992). Ethnic identity - challenging the boundaries of social psychology. In G. Breakwell (Ed.), *Social psychology of identity and self-concept* (pp. 147-185). London: Surrey University Press/Academic Press.

Linville, P. W. (1987). Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology*, 52(4), 663-676.

Loewenstein, J., Thompson, L., & Gentner, D. (1999). Analogical encoding facilitates knowledge transfer in negotiation. *Psychonomic Bulletin & Review*, 6(4), 586-597.

Markus, H. (1982). Self-schemata and processing information about the self. In M. Rosenberg & H. B. Kaplan (Eds.), *Social psychology of the self-concept* (pp. 50-66). Arlington Heights, IL: Davidson.

Markus, H., & Kunda, Z. (1986). Stability and malleability of the self-concept. *Journal of Personality and Social Psychology*, 858-866.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, 41(9), 954-969.

Markus, H., & Sentis, K. (1982). The self in social information processing. In J. Suls (Ed.), *Psychological perspectives on the self (Vol. 1, pp. 41-69)*. Hillsdale, NJ: Erlbaum.

Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology*, 38, 299-337.

Markus, H., & Zajonc, R. B. (1985). The cognitive perspective in social psychology. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology (3rd ed., Vol. I: Theory and method, pp. 137-230)*. New York: Random House.

Markus, H. R., Kitayama, S., & Heiman, R. J. (1996). Culture and "basic" psychological principles. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology. Handbook of basic principles* (pp. 857-913). New York: Guilford.

McAdams, D. P. (2001). The psychology of life stories. *Review of General Psychology*, 5(2), 100-122.

McGuire, W. J., McGuire, C. V., Child, P., & Fujioka, T. (1978). Salience of ethnicity in the spontaneous self-concept as a function of one's ethnic distinctiveness in the social environment. *Journal of Personality and Social Psychology*, 511-520.

Mead, G. H. (1934). *Geist, Identität und Gesellschaft* (10. ed.). Frankfurt a.M.: Suhrkamp TB Wissenschaft.

Moser, K. S. (2000). Metaphor analysis in psychology - method, theory, and fields of application. *Forum: Qualitative Social Research (on-line journal)*, 1(2), 22 paragraphs, available at: <http://qualitative-research.net/fqs-texte/22-00/22-00moser-e.htm>.

Moser, K. S. (2003). *Metaphern des Selbst. Wie Sprache, Umwelt und Selbstkognition zusammenhängen* (2nd ed.). Lengerich: Pabst Science Publishers, available as e-book at www.ciando.com.

Moser, K. S. (2004). The role of metaphors in acquiring and transmitting knowledge. In M. Fischer, N. Boreham & B. Nyhan (Eds.), *European perspectives on learning at work. The acquisition of work process knowledge* (pp. 148-163). Luxembourg: Cedefop Reference Series 56.

Ortony, A. (1993). Metaphor, language, and thought. In A. Ortony (Ed.), *Metaphor and thought* (2nd ed., pp. 1-16). Cambridge: Cambridge University Press.

Ortony, A., & Fainsilber, L. (1989). The role of metaphors in descriptions of emotions. In Y. Wilks (Ed.), *Theoretical issues in natural language processing* (pp. 178-182). Hillsdale, NJ: Erlbaum.

Ottati, V., Rhoads, S., & Graesser, A. C. (1999). The effect of metaphor on processing style in a persuasion task: A motivational resonance model. *Journal of Personality and Social Psychology*, 77(4), 688-697.

Palmer, I., & Dunford, R. (1996). Conflicting uses of metaphors: Reconceptualizing their use in the field of organizational change. *Academy of Management Review*, 21(3), 691-717.

Proshansky, H. M. (1978). The city and self-identity. *Environment and Behavior*, 10, 147-169.

Roderburg, S. (1998). *Sprachliche Konstruktion der Wirklichkeit. Metaphern in Therapiegesprächen*. Wiesbaden: Deutscher Universitäts Verlag.

Putnam, L. L., Phillips, N., & Chapman, P. (1996). Metaphors of communication and organization. In S. R. Clegg, C. Hardy & W. R. Nord (Eds.), *Handbook of organization studies* (pp. 375-408). London: Sage.

Ricoeur, P. (1986). *The rule of metaphor: Multi-disciplinary studies of the creation of meaning in language*. London: Routledge.

Rosenberg, M., & Kaplan, H. B. (Eds.). (1982). *Social psychology of the self-concept*. Arlington Heights, IL: Davidson.

Schachtner, C. (1999). *Ärztliche Praxis. Die gestaltende Kraft der Metapher*. Frankfurt a.M.: Suhrkamp TB Wissenschaft.

Schlenker, B. R. (1980). *Impression management: The self-concept, social identity, and interpersonal relations*. Belmont, CA: Brooks/Cole.

Siegelman, E. Y. (1990). *Metaphor and meaning in psychotherapy*. New York: Guilford.
Singer, J. L., & Kolligian, J., Jr. (1987). *Personality: Developments in the study of private experience*. *Annual Review of Psychology*, 38, 533-574.

Singer, J. L., & Kolligian, J., Jr. (1987). *Personality: Developments in the study of private experience*. *Annual Review of Psychology*, 38, 533-574.

Smith, M. B. (1991). *The metaphorical basis of selfhood*. In M. B. Smith (Ed.), *Values, self, and society: Toward a humanist social psychology* (pp. 73-93). New Brunswick, NJ: Transaction Publishers.

Snygg, D., & Combs, A. W. (1949). *Individual behavior: A new frame of reference for psychology*. New York: Harper.

Tedeschi, J. T. (1986). *Private and public experiences and the self*. In R. F. Baumeister (Ed.), *Public self and private self* (pp. 1-20). New York: Springer.

Thompson, L., Gentner, D., & Loewenstein, J. (2000). *Avoiding missed opportunities in managerial life: Analogical training more powerful than individual case training*. *Organizational Behavior and Human Decision Processes*, 82(1), 60-75.

Traugott, E. C. (1985). *'Conventional' and 'dead' metaphors revisited*. In W. Paprotté & R. Dirven (Eds.), *The ubiquity of metaphor: Metaphor in language and thought*. Amsterdam: Benjamins.

Tsoukas, H. (1991). *The missing link: A transformational view of metaphors in organizational science*. *Academy of Management Review*, 566-585.

Vosniadou, S., & Ortony, A. (Eds.). (1989). *Similarity and analogical reasoning*. Cambridge, MA: Cambridge University Press.

White, M., & Epston, D. (1990). *Narrative means to therapeutic ends*. New York: W.W. Norton.

Wicklund, R. A., & Gollwitzer, P. M. (1982). *Symbolic self-completion*. Hillsdale, NJ: Erlbaum.

Wolf, H.-G. (1994). *A folk model of the "internal self" in light of the contemporary view of metaphor. The self as subject and object*. Frankfurt a.M.: Peter Lang.

APPENDIX: INTERVIEW SCHEDULE

Open interview questions:

Please describe your current situation, both privately and professionally, in terms of well-being and satisfaction.

Please describe at least two experiences of success in the past and describe what exactly made the described experiences a success.

Have you ever experienced failure in the past? If so, please describe the experience of failure in detail.

What successes do you wish for in the future? Why do you want to attain those goals? Please describe at least two experiences of good relationships in the past and describe what qualified them as good relationships.

Have you ever experienced bad relationships in the past? If so, please describe the experience of bad relationships in detail.

What types of good relationships do you wish for in the future? Why do you want to have those relationships?

ENDNOTES

[1] All examples of metaphorical expressions are taken from interviews in study 1. The participants were native speakers of Swiss-German; all quotes from the interviews have been translated into English. Notations follow conventions established in metaphor research with metaphorical expressions in italics and metaphor source domains in capital letters.

AUTHOR NOTE

The presented research was supported by research fellowships from the Swiss National Science Foundation and the Janggen-Poehn-Foundation, Switzerland.

AUTHOR BIOGRAPHY

Karin S. Moser, PhD, is an Assistant Professor of Social and Organizational Psychology at the University of Zurich, Switzerland, and a Visiting Associate Professor of Social and Business Psychology at the University of Goettingen, Germany. Her research interests focus on cooperative behavior and information sharing in groups and organizations, verbal representation of knowledge and the role of the self-concept in social perception. E-mail: kmoser@sozpsy.uzh.ch