

## Chapter #23

### REALITY IN THE SPHERE OF MEANING

**Shulamith Kreitler**

*School of Psychological Sciences, Tel-Aviv University, Israel*

#### ABSTRACT

The paper deals with the issue of reality and especially with the conditions under which a sense of deviation from reality is likely to occur. Following a presentation of the major involved issues, two studies are described. Both are based on the Kreitler system of meaning which serves as the theoretical and methodological framework for the two empirical studies. Study 1 describes the dimensional questionnaire of reality which enables assessing the meaning assigned to reality and its components. Study 2 examines the impact of stimuli characterized by different combinations of contents on the sense of deviation from reality. The hypothesis about the matching of content distances and the evoked sense of deviation from reality was supported as well as the expected impact of the observer's conception of reality. It was found that the broader it is the higher is one's tolerance of deviations from reality and readiness to accept them as real.

*Keywords:* reality, meaning, deviations from reality, distances in contents.

#### 1. INTRODUCTION

*The problem of reality.* The focus of the present chapter is the issue of reality. In psychology as in daily life we hit against reality and often need often to decide about its nature even if we are not philosophically-minded. There are remarks about reality in basic psychological texts that emphasize its relation to perception (sometimes as related, at other times as contrasting), to emotion (one may discover reality precisely when one is involved in an emotion or become unable to perceive it then) as well as to behavior (which may help to discover reality or disregard it). There is barely a psychological discipline which is not based on some more or less evident approach or definition of reality. Reality plays the role of a basic anchor that seems evident, probably as long as one does not question its role and nature.

Reality has always been there and often more in the background than in the front of psychological occupation. In recent years it has increasingly become a theme of major preoccupation, attended by an increasing awareness of the generation of different kinds of reality, e.g., virtual, political, social, phenomenological or ideological (Berger & Luckman, 1966; Saridakis, 2016; Tegmark, 2008). This kind of liberalism in regard to the construct of reality may cause confusion in the naïve individual (Church, 1961).

Reality has been a theme of exploration by philosophers for centuries. Yet the results do not provide solutions to the involved problems at present but rather sharpen them, not in the least by uncovering their complexity (Miller, 2021).

The surge of interest in the construct of reality at present may be due to an increasing number of cases when one is facing the issue whether something is real or to what extent it is real. Such cases refer to information that may be publicly published and turn out to be fake, or a piece of news in the social media that is identified as false designed to serve the interests of some group (Gamson, Croteau, Hoynes, & Sasson, 1992; Van der Meer, Kroon,

& Vliegenthart, 2022). Physics with its information about “black holes”, multidimensionality of space, and the holographic principle, contributes freely to further increase the uncertainty concerning reality, which is profusely attacked by films, art, science-fiction and other derealization products and procedures (Musser, 2019). Additionally, there are technologically-generated experiences that may appear as real but are not, not in the least due to the wave of different kinds of virtual reality, including its applications in games, entertainment, business, medicine, and education, as well as the varieties of so-called augmented reality, extended reality and mixed reality as well as the three varieties of non-immersive, semi-immersive and fully-immersive simulations (Mandal, 2013). Likewise, an increasing number of individuals, following a sensation-seeking lifestyle and curiosity, choose to expose themselves to different bizarre experiences, for example, drug-induced or hallucinatory, which are likely to contribute to further undermine the already quite blurred frontier between the real and the not-quite-real. As a result, individuals are likely to stop in an increasing number of cases to ask themselves the recurrent question “Is that real?” “Is it really happening?”, seeking to assure themselves with the calming assertion “yes, it is real” (Kreitler, 2001). Hence, it seems often that the issue of redefining reality needs to be confronted anew, possibly with the conclusion that unreality does not indicate a specific state but rather a range of states or situations which form together with reality a graduated scale rather than a binary dichotomic one (Kreitler, 1999).

The general objective of the present paper is to clarify and define the nature of reality in the framework of psychology and its relation to unreality. The more specific objective is to examine the impact of one’s conception of reality and the exposure to different kinds of information on tolerance of deviations from the experienced reality.

### **1.1. Reality and Meaning**

In psychology meaning is the natural site for dealing with questions, such as what is reality, and what is unreality. Meaning is the reservoir of contents and processes available for searching for answers and generating those that are best suited for oneself.

**What is meaning.** Meaning is the system with a unique function and structure which fulfills a basic role in the organism. The major function of the meaning system includes identification of stimuli and constructs, problem identification and problem solving. It is applied in regard to every input or situation as well as in regard to bigger constructs as ‘reality’ (Kreitler, 2022a, 2022b).

Meaning includes contents and processes identified on the basis of large scale data collection based on the following three basic assumptions: 1. Meaning is essentially communicable, because most of the meanings we know have been learned from or through others; 2. Meaning can be expressed or communicated by verbal or different nonverbal means, because not all meanings can be communicated by means of words; and 3. Meaning two types or varieties: the interpersonally-shared meaning and the personal-subjective meaning, because meaning functions both in interpersonal communication and in the private or subjective world of individuals (Kreitler, 2014).

The collected data consisted of responses of thousands of subjects differing in age (2 to over 90 years), gender, cultural-ethnic background and education, who were requested to communicate the interpersonally-shared and personal meanings of a great variety of verbal and non-verbal stimuli, using any means of expression they considered adequate. Analysis of this data revealed that the meaning communications consisted of semantic molecules referring to a rich variety of contents in a great number of forms.

*The definition of meaning.* Accordingly, meaning was eventually defined as a *referent-centered pattern of meaning values*. In this definition, referent is the input, the carrier of meaning, which can be a word, an object, a situation, an event, a whole period, or any other input, whereas meaning values are contents assigned to the referent for the purpose of expressing or communicating its meaning. For example, if the referent is 'chair', responses such as 'made of wood' or 'is in a room' or 'a piece of furniture' are three different meaning values. The referent and the meaning value together form a meaning unit (e.g., Table - a piece of furniture).

*The meaning variables.* The meaning unit can be characterized in terms of the following five sets of variables: (a) Meaning Dimensions, which characterize the contents of the meaning values from the point of view of the specific information communicated about the referent, such as the referent's Sensory Qualities (e.g., Grass - green), Feelings and Emotions it evokes (e.g., Storm - scary), Range of Inclusion (e.g., Body - the head and legs); (b) Types of Relation, which characterize the immediacy of the relation between the referent and the meaning value, for example, attributive (e.g., Summer - warm), comparative (e.g., Summer - warmer than spring), exemplifying instance (e.g., Country - the U.S.) or metaphoric (Love – like spring in your heart); (c) Forms of Relation, which characterize the manner in which the relation between the referent and the meaning value is regulated, for example, in terms of its validity (positive or negative; e.g., Yoga - is not a religion), quantification (absolute, partial; Apple - sometimes red), and form (factual, desired or desirable; Law - should be obeyed, Money - I wish I had more); (d) Referent Shifts, which characterize the relation between the referent and the presented input or the previous referent in terms of the distance between them, for example, the referent may be identical to the input or the previous referent, it may be its opposite (e.g., when the input is 'Day' and the response is to 'Night'), or a part of it, or even apparently unrelated to it; (e) Forms of Expression, which characterize the forms of expression of the meaning units (e.g., verbal, denotation, graphic) and its directness (e.g., actual gesture or verbal description of gesture) (Kreitler & Kreitler, 1990a) (see Table 1 for a list of all meaning variables).

*Table 1*  
*Major Variables of the Meaning System: The Meaning Variables.*

<u>MEANING DIMENSIONS</u>		<u>FORMS OF RELATION</u>	
Dim. 1	Contextual Allocation	FR 1	Propositional (1a: Positive; 1b: Negative)
Dim. 2	Range of Inclusion (2a: Sub-classes; 2b: Parts)	FR 2	Partial (2a: Positive; 2b: Negative)
Dim. 3	Function, Purpose and Role	FR 3	Universal (3a: Positive; 3b: Negative)
Dim. 4	Actions and Potentialities for Actions (4a: by referent; 4b: to referent)	FR 4	Conjunctive (4a: Positive; 4b: Negative)
Dim. 5	Manner of Occurrence and Operation	FR 5	Disjunctive (5a: Positive; 5b: Negative)

Dim. 6	Antecedents and Causes	FR 6	Normative (6a: Positive; 6b: Negative)
Dim. 7	Consequences and Results	FR 7	Questioning (7a: Positive; 7b: Negative)
Dim. 8	Domain of Application (8a: as subject; 8b: as object)	FR 8	Desired, wished (8a: Positive; 8b: Negative)
Dim. 9	Material		
<u>SHIFTS IN REFERENT<sup>b</sup></u>			
Dim. 10	Structure	SR 1	Identical
Dim. 11	State and Possible change in it	SR 2	Opposite
Dim. 12	Weight and Mass	SR 3	Partial
Dim. 13	Size and Dimensionality	SR 4	Modified by addition
Dim. 14	Quantity and Number	SR 5	Previous meaning value
Dim. 15	Locational Qualities	SR 6	Association
Dim. 16	Temporal Qualities	SR 7	Unrelated
Dim. 17	Possessions (17a) and Belongingness (17b)	SR 8	Verbal label
Dim. 18	Development	SR 9	Grammatical variation
Dim. 19	Sensory Qualities <sup>c</sup> (19a: of referent; 19b: by referent)	SR 10	Previous meaning values combined
Dim. 20	Feelings and Emotions (20a: evoked by referent; 20b: felt by referent)	SR 11	Superordinate
Dim. 21	Judgments and Evaluations (21a: about referent; 21b: by referent)	SR 12	Synonym (12a: in original language; 12b: translated in another language; 12c: label in another medium; 12d a different formulation for the same referent on the same level)
Dim. 22	Cognitive Qualities (22a: evoked by referent; 22b: of referent)	SR 13	Replacement by implicit meaning value
<u>TYPES OF RELATION<sup>a</sup></u>		<u>FORMS OF EXPRESSION</u>	
TR 1	Attributive (1a: Qualities to substance; 1b: Actions to agent)	FE 1	Verbal (1a: Actual enactment; 1b: Verbally described; 1c: Using available materials)
TR 2	Comparative (2a: Similarity; 2b: Difference; 2c: Complementariness; 2d: Relationality)	FE 2	Graphic (2a: Actual enactment; 2b: Verbally described; 2c: Using available materials)

TR 3	Exemplifying-Illustrative (3a: Exemplifying instance; 3b: Exemplifying situation; 3c: Exemplifying scene)	FE 3	Motoric (3a: Actual enactment; 3b: Verbally described; 3c: Using available materials)
TR 4	Metaphoric-Symbolic (4a: Interpretation; 4b: Metaphor; 4c: Symbol)	FE 4	Sounds and Tones (4a: Actual enactment; 4b: Verbally described; 4c: Using available materials)
		FE 5	Sensory (5a: Actual enactment; 5b: Verbally described; 5c: Using available materials)
		FE 6	Denotative (6a: Actual enactment; 6b: Verbally described; 6c: Using available materials)
		FE 7	Visual media (7a: Actual production; 7b: Verbally described; 7c: Using available materials)

<sup>a</sup>Modes of meaning: Lexical mode: TR1+TR2; Personal mode: TR3+TR4

<sup>b</sup>Close SR: 1+3+9+12 Medium SR: 2+4+5+6+10+11 Distant SR: 7+8+13

<sup>c</sup>This meaning dimension includes a listing of subcategories of the different senses/sensations: [for special purposes they may also be grouped into "external sensations" and "internal sensations"] e.g., color, form, taste, sound, smell, pain, humidity and various internal sensations.

Any meaning variable can be considered in accordance with the static approach or alternately in terms of the dynamic approach. The static approach views the meaning variable as representing a certain domain of contents. For example, the meaning dimension Locational Qualities may represent locations, addresses, sites of different kinds. The dynamic approach views the meaning variable as representing a specific set of cognitive processes. Thus, in the case of the meaning dimension of Locational Qualities the relevant cognitive processes would include ordering or evaluating or memorizing places, looking for adequate locations for putting or hiding items or searching for misplaced objects (Kreitler, 2014).

The meaning system may be applied for analysing any verbal or non-verbal communication or expression of meaning, abstract or concrete, regardless of whether it has been produced with the intention of expressing meaning or not. In assessing communications of meaning the material is first reduced to meaning units, and then each unit is coded on one meaning dimension, one type of relation, one form of relation, one

referent shift and one form of expression. For example, when the referent is "Life" and the meaning value is "is short", the coding on meaning dimensions is Temporal Qualities, on Types of Relation – attributive, on Forms of Relation - positive, on Referent Shifts - identical to input, and on Forms of Expression - verbal. The analysis is done by a computer program (Kreitler, 2010).

*The meaning profile.* Each individual disposes over a certain selected part of the meaning system which represents the specific tendencies of that individual to apply the meaning system in information processing. Thus, each individual tends to use specific meaning variables with higher frequency and other meaning variables with medium or low frequency. The profile represents the set of all meaning variables that characterize a specific individual, each variable with the particular frequency with which it was used.

The meaning profile is based on the analysis of the responses of the individual to the Meaning Test. The *Meaning Test* was developed for assessing individuals' tendencies to use the different meaning variables. The test includes 11 standard stimuli (e.g., street, ocean). There exist three parallel independent sets of stimuli. Notably, the particular feature characterizing the three sets is that the stimuli in each set have been chosen and pretested so that together they provide the possibility of using in the responses all meaning variables in the meaning system. The standard instructions require the subject to communicate the interpersonally-shared and personal meanings of these stimuli to someone of one's own choice who does not know the meanings, in as many forms and using any means of expression that seem adequate. Coding the responses in terms of the meaning variables yields the *subject's meaning profile* which summarizes the frequency with which the subject used in the responses to the test each of the meaning variables.

Comparing the meaning profiles of individuals scoring high and low on any psychological variable enables identifying the meaning variables which characterize the high scorers in comparison to the low scorers. These meaning variables can be considered as constituting the meaning profile of that psychological variable, supporting its functioning and accounting for its character.

## **1.2. The Meanings of Reality**

### **1.2.1. Open-Ended Exploration**

The first step in studying the meaning of reality consisted in administering to participants (40 undergraduates, of both genders) unanimously in a digital manner the open-ended questionnaire of reality. The task requested the subjects to communicate to someone of their choice the interpersonal and personal meanings of reality in any form they found adequate. The responses were short, repetitive, and limited in the information they provided. The recurrent themes were: existence, concrete, perceptible, touchable, everything, intuition tells you it is real, we don't know what reality is. The mean number of themes per response was 5 (SD=2.3). The implication of these results is that the meanings of reality are not attached to the referent Reality in a manner that enables evoking them freely in response to an open-ended question.

### **1.2.2. The Dimensional Questionnaire of Reality**

The dimensional questionnaire of reality is a close-ended meaning questionnaire that relates to a specific referent and includes items in the different meaning dimensions of the system of meaning. The special advantages of a dimensional questionnaire are first that it presents a complete set of content descriptors of reality; secondly, it is grounded in the theory of meaning which provides the possibility of relating the findings to personality

tendencies, cognitive processes, and emotional reactions and enables applying interventions for broadening the conception of reality in educational and therapeutic frameworks.

Questionnaires of this kind have been produced and applied for a great variety of constructs, such as 'Health', 'Self', 'Love', 'Peace', 'Marriage', 'Communication', 'Education', 'Meaningfulness of Life' and the different sensations and emotions (e., colors, forms, taste, love, anger). The dimensional questionnaire refers to only one referent that does not change in the course of the questionnaire. The referent may be mentioned only once, in the heading of the questionnaire or it may be mentioned repeatedly in each item of the questionnaire. The items refer to the referent (i.e., in the present case, Reality). The items are in random order. Each item refers to one meaning dimension, and only one. Each item is followed by four response alternatives (Very important, Important, Not Important, Not at all Important), scored as 4, 3,2,1, respectively. The respondent is required to select the responses that communicate best one's meaning of the referent. Selecting is done by checking the degree to which the presented response is considered as important for communicating the meaning of Reality.

In the presented version of dimensional questionnaire of reality (Appendix 1) the items are described by representing the meaning dimension through the title accompanied by several examples, e.g., "The place or location of reality, e.g., it is in the physical sphere, in the minds of people, in the open space around us, it is everywhere, it is nowhere, it is only with God". The examples are meaning values of the referent. It is emphasized in the instructions to the questionnaire that the examples serve only as illustrations of the meaning dimensions presented in the items, so that the respondent is invited to ignore them as contents or invent examples of one's own.

Other possible ways of presenting items in a dimensional questionnaire are to present in each item only the title of the meaning dimension that refers to the referent, e.g., the feelings and emotions evoked by reality or the temporal qualities of reality. Still another way is by means of examples of the meaning dimension, without referring to the title of the meaning dimension itself. The items may also be presented non-verbally, for example, by means of small drawings that may be iconic, based on emoji, or simply illustrative, with or without accompanying words.

There are two major kinds of scores that are used regarding the dimensional questionnaire. The first is a sum total of the responses provided by the subject, whereby the response that is considered as 'most important' is scored as 4 and the one that is considered as 'not at all important' is scored as 1. The sum total may be divided by the number of items in the questionnaire so as to neutralize the impact of the number of items that may differ to some extent in different questionnaires because in some cases it may be difficult to assign adequate responses (the present questionnaire includes 26 items rather than the expected total of 30 because in regard to the following four subdimensions no adequate responses can be phrased: sensory qualities, emotions, judgments and cognitions of the referent, i.e., 19b, 20b, 21b, 22b). The ranges of the sum total are 26-104.

Another commonly used method of scoring is based on the number of items or domains that got the scores of 4 or 3, i.e., were checked by the respondent as Very Important or Important. This score provides information about the domains that contribute most to the conception of reality in the subjects view as well as about the structure of the subject's conception of reality. When the number of these domains is relatively low it implies that the individual's conception of reality is based on a selected specific limited number of domains; but when it is high, the individual's conception of reality is spread over a large number of different domains and is not focused on a specific content (Kreitler, 2022c).

## 2. STUDY 1

*Objective.* The purpose of study 1 was to get preliminary information about the basic psychometric features of the dimensional questionnaire of reality, and the matching of the results with those of the individual's meaning profile. It was expected that the domains selected in the dimensional questionnaire as very important or important would match those used by the individual in one's meaning profile. This expectation was based on the findings in a previous study with the dimensional questionnaire which showed a matching of 74% in regard to the construct of the meaningfulness of life (Kreitler, 2022b).

*Method.* The subjects were 65 undergraduates of both genders, in the age range 23-29 years. They were administered unanimously the meaning test and the dimensional questionnaire of reality.

The reliability coefficient of the dimensional questionnaire of reality was .72. This result is within the acceptable range, although lower than the coefficients obtained in regard to the dimensional questionnaire of the meaningfulness of life (.78-.85) (Kreitler, 2022).

*Results.* The total mean score of the dimensional questionnaire based on the total of response was 64.2 (SD=2.2). The score based on the number of domains selected as Very important or Important was 5.8 (SD=2.7). These scores are lower than those obtained for the meaningfulness of life but not significantly so. These results lend psychometric support to the dimensional questionnaire of reality.

The domains that were selected as very important or important most often (i.e., above mean frequency) were the following: The sensory characteristics of reality: its form, colors, brightness, its sound, tactile characteristics; the manner of operation of reality, how it functions; Judgments, evaluations and opinions concerning reality; The function, purpose or role of reality; The materials of which reality is made. The list of the domains considered as very important or important shows the tendency to focus on concrete and functional aspects of reality.

The matching between the domains selected as very important or important for characterizing reality matched in 65% those that the individual used with high frequency (i.e., above the mean of responses) in the meaning profile. This finding supports the conclusion that the individual uses the contents of one's meaning profile in conceptualizing 'reality'. Another way of expressing this conclusion is that one's conception of reality is grounded in one's sphere of meaning.

## 3. STUDY 2

*Introduction.* The purpose was to examine the adequacy of a new measure of unreality based on specific properties of the meaning system. One assumption was that the conceptions of unreality and reality would be related. A second assumption was that meaning contributes to the conditions supporting the assessment of unreality. The study was based on a preliminary examination of phenomena characterized as presenting different kinds of deviations from reality (Kreitler, 2022b, chapter 9).

The first step consisted in requesting subjects to list and describe freely phenomena that demonstrate deviations from reality. The descriptions enabled identifying three kinds of phenomena deviating from reality: (a) phenomena characterized by relatively small deviations from reality that are not commonly considered as due to psychopathology, psychedelic or hallucinatory drugs, serious chronic diseases, or willful deception (e.g., lying, memory errors, such as changes in the memory of the day or date of an



event, visual illusions, such as seeing straight lines as curved); (b) Phenomena characterized by medium deviations from reality, manifesting both a realistic character but being closer in structure to illusions than hallucinations (e.g., mistaken identification of objects, such as seeing a hill in the distance as a tree); and (c) Phenomena characterized by gross deviations from reality (e.g., bizarre dreams, bodily hallucinations, such as inserting a third eye in the middle of one's forehead).

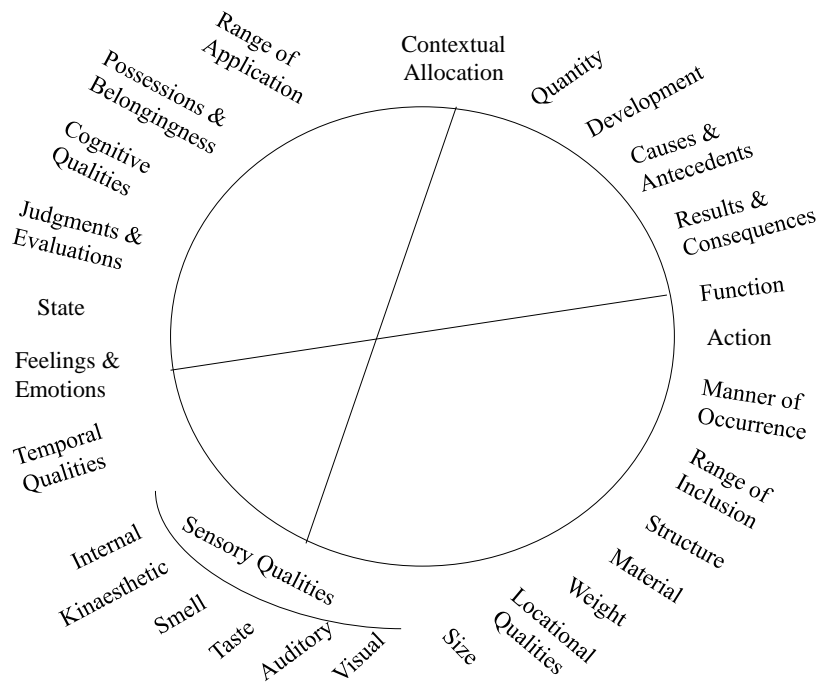
In the second step an attempt was made to clarify the features grounded in the meaning system that underlie different degrees of deviations from reality. The major feature characterizing the impressions of unreality is distances between the expected and the observed types of contents. The expected contents is based on habit, conventions, memory and conceptions. Both kinds of contents – the expected and the observed – are meaning values of the referent (Kreitler, 2017; Rotstein, Maimon, & Kreitler, 2013).

It needs to be emphasized that examining the experiences of reality produced by combinations of different kinds of contents is designed to explore the broad range of experiences of reality in contrast to virtual reality which focuses on producing conditions in which most individuals experience “normal” or “regular” reality (Penn & Hout, 2018).

*Distances.* The distances consist between contents that describe referents. In the meaning system the contents are represented by meaning dimensions. Hence, assessing the distances between contents depends basically on assessing the distances between meaning dimensions (Kreitler, 2022a, Chapter 7). The circumplex circle in Figure 1 presents the interrelations between the meaning dimensions in a form illustrating the relative distances between them. The circle is based on the results of the statistical method of multidimensional scaling, which enables arranging constructs in terms of their correlations around the circumference of a circle in terms of polar coordinates. The more highly correlated ones are located closer to each other, those that are the least similar are placed on the polar ends of opposite coordinates (Borg & Groenen, 2005; Jaworska & Chupetlovska-Anastasova, 2009; Kreitler & Kreitler, 1991). The figure shows for example that contextual allocation is placed opposite the sensory qualities, namely, the abstract category is furthest from the concrete qualities, just as actions is placed opposite to emotions, i.e., the external expression versus the internal experience. However, due to the circular presentation no one specific polar axis is accorded salience or importance, in contrast to the commonly used Cartesian coordinates. Further, the circumplex enables comparing distances between meaning dimensions. For example, it shows that Temporal Qualities is further away or more distant from Size than Material. Distances between the meaning dimensions are assessed in terms of number of differentiating steps along the circumference of the circumplex. Thus, Temporal Qualities is located four steps away from Size whereas Material is located two steps away. The proximity degrees between the meaning dimensions may reflect similarity in contents, contents that complement each other or frequency of common application.

The validity of the circumplex arrangement was tested and verified in studies about conservation, horizontal decalage, generalization, and relevance of answers to questions (Kreitler, 2022a, chapter 7; Kreitler & Kreitler, 1989, 1990b). The studies showed that the smaller the distances between the assessed contents the better was the conservation, the generalization and the relevance of the response.

Figure 1.  
The Circumplex Model of Meaning Dimensions.



Note. The figure represents schematically the relations between the meaning dimensions in the system of meaning that seem likely on the basis of data available up to date. Some of the relations are still merely hypothesized. The locational position of the meaning dimensions represents their proximity. The closest relations are between adjoining meaning dimensions, the furthest are between meaning dimensions placed opposite each other on the circumference of the circle. The two intersecting lines represent factors identified in several studies. The meaning dimensions at opposite poles represent variables with positive and negative loadings on the factors, respectively.

The methodology of evaluating dimensional distances was applied to characterizing the three different identified degrees of deviation from reality. The analysis in terms of dimensional distances showed that the differences between the three groups are clear-cut and can be described as shifts from one meaning value to another. Small deviations from reality consist in shifts that are intra-dimensional and are limited to one meaning dimension, such as from red to blue in the meaning dimension of sensory qualities, or from far to near in the meaning dimension of locational qualities. Medium deviations from reality are characterized by inter-dimensional shifts in one or a few meaning dimensions that are usually between relatively close meaning dimensions, such as the meaning dimension of Development to Results and Consequences, or from the meaning dimension Quantity to Material. Large deviations from reality take place in regard to several meaning dimensions simultaneously and consist in extreme shifts between meaning dimensions that are relatively distant from one another, such as from the meaning dimension of Contextual allocation to Sensory Qualities, or from Function to Feelings and Emotions.

*The hypotheses of study 2.* The objective of the study was to test the determinants of the sense of deviation from reality evoked by specific stimuli. The hypotheses were formed on the basis of theoretical considerations based on the meaning system and were pretested informally by interviewing subjects about different kinds of stimuli (see above). Two hypotheses were examined. The first and major hypothesis was that the evoked sense of deviation from reality will be determined by the degree of the dimensional distance characterizing the stimuli: stimuli generated in accordance with the three described kinds of dimensional distances – small, medium and large distances - would evoke the following expected reactions of deviations from reality: stimuli characterized by intra-dimensional distances, will not evoke the sense of deviation from reality; stimuli with large dimensional distances will evoke the sense of deviation from reality to a large extent; stimuli characterized by a medium degree of dimensional distances will evoke a sense of deviation from reality to an intermediate degree between the degrees evoked by stimuli representing intra-dimensional distances and those representing large interdimensional distances.

A second hypothesis concerned the attitudes of the observer. It was based on the dimensional questionnaire of reality. The hypothesis was that the overall sum of ratings of the sense of deviation from reality of the different stimuli would be correlated positively with the individual's score on the dimensional questionnaire of reality. The basis for this hypothesis was the assumption that a broad conception of reality including many different domains would make it easier for the individual to accept a greater number of deviations from reality as regular, normal or conforming to reality.

*Method.* The subject were 60 undergraduates, of both genders, 22-31 years in age. After consenting to participate in the experiment, they were administered in a digital manner 20 stimuli which they were requested to rate in terms of the sense of deviations from reality that they evoked, and the dimensional questionnaire of reality which was designed to assess the impact of the subjects' conception of reality on the ratings of the sense of reality in the major task of the study.

The 20 stimuli included 5 examples from each of the three categories of stimuli defined as presenting intra-dimensional, medium or large interdimensional distances, plus 5 neutral stimuli without any deviations, that were designed to appear conforming to reality.

The following are examples of the presented stimuli. (a) Stimuli with intra-dimensional deviations included sensory color illusions (the red seems darker or brighter depending on the background color; illusions of completion (a break in the line is completed); a straight line seems curved when small diagonal lines are placed on it. (b) Stimuli with inter-dimensional deviations to close meaning dimensions: size of figure changes with change in color or location (in video games); cognitive bias: a statement appears logical when it describes something that happened to oneself and not to another person. (c) Stimuli with inter-dimensional deviations to distant meaning dimensions: A person dreams that he is suspended in midair by means of tones that are represented by different colors; objects laughing at non-funny caricatures.

The stimuli were presented in random order. Concerning each stimulus, the subject was requested to check one of the following responses: no deviation from reality, medium deviation from reality, large deviation from reality, cannot decide whether there is a deviation from reality. These responses were scored as 1, 2, 3 and 0, respectively. The range of scores for all stimuli was 15-45, and for each of the three groups of stimuli 5-15. The participants were requested not to dwell too much on any response, and to express their immediate impressions of the stimuli. They were not asked to explain their responses or justify them.

The dimensional questionnaire of reality was scored in terms of the total score (see above, Study 1).

*Results.* The means (and SDs) of deviations from reality stated for each of the three groups were as follows: 5.2 (0.2), 6.4 (1.3), and 8.4 (1.8), for groups 1, 2 and 3, respectively. The differences are significant ( $F=4.69$ ,  $df=2/57$ ,  $p < .01$ ).

The mean for all subjects was 19.3 (SD=2.4), and the range was 6.3-34.1.

The correlation between the total score for the deviations task and the dimensional questionnaire of reality was  $r=-.62$ ,  $p < .001$

*Discussion.* The results provide support to the two hypotheses of the study. They show that, as expected in the first hypothesis, the degrees of distances between the contents making up the stimuli match the sense of deviation from reality evoked in the observers. When the distances between the contents increase in terms of the three examined levels the sense of deviation from reality experienced by the observers increases proportionally. The reason may be double-pronged. One reason may be the fact that stimuli combinations based on large distances in contents are rarely encountered in daily life, so that when one perceives items representing combinations of this kind, one may assume that they are not quite real. But another reason may be that precisely extreme forms of deviations from reality, as in magic and deceptions of different kinds, consist of large distances in the represented contents so that one may assume that they are NOT real. The two possibilities complement and reinforce each other in supporting the sense of deviation from reality.

The findings support also the second hypothesis in showing that individuals whose conception of reality is broad and includes many different features characterizing reality tend to accept as real or as constituents of reality stimulus combinations that are not ubiquitous and commonly encountered.

In sum, the results of the study support the conclusion that the tolerance or acceptance of apparently deviant stimulus combinations as real depends on both the characteristics of the stimuli and the attitudes of the observer.

#### **4. CONCLUSIONS AND APPLICATIONS**

The theoretical framework of the studies in this chapter is based on the assumption that the motivation of individuals includes two tendencies: on the one hand, they are oriented towards grasping reality as authentically as possible, including presented deviations, but on the other hand, they are motivated to keeping their schema of reality as stable and unchanging as possible. Both tendencies are in a constant state of tension-laden conflict, serving at the same time the important constantly ongoing project of the construction and of the maintenance of reality (Bösel, 2016; Gazzaniga, 2018). The two described studies demonstrate that the perception of reality and evaluation of the degrees of deviation from reality are a function of the individual's meaning profile. The positive findings of the studies are an indication that it is possible and important to continue the exploration of how reality is experienced, generated, and constantly discovered in a manner that becomes meaningful and endows the totality of our existence with meaning.

In addition to the theoretical and methodological implications of the described studies, there are also applied implications. The major ones are that the described methodology illustrates how the sense of reality may be expanded to include innovative and not strictly conventional perspectives on reality. The major tool for attaining this goal is the dimensional-based multi-distance methodology. The training based on this methodology consists in exposing the individual in a systematic manner to different kinds of combinations of contents which present in a graduated manner different variations that

evoke different kinds of deviations from reality. The emphasis is on experiencing the deviations from reality as such rather than disregarding them as unacceptable or effacing the bizarreness of the deviation. In this way the training provides the individual the possibility to gradually get used to these deviations and assimilate them into one's view of reality. This is in contrast to virtual reality which strives to present the non-real as reality itself. The training in terms of the dimensional-based multi-distance methodology strives to turn the bizarre, the deviant and the unusual slowly into an acceptable image of an aspect of reality. The results are both emotional and cognitive. The emotional consequences are reduction of anxiety likely to be evoked by deviant bizarre experiences. The resulting cognitive consequences are that one's view of reality increases in breadth and stability to an extent that allows incorporating in one's experienced conception of reality new and unusual experiences based on new often overlooked or repressed aspects of reality. Eventually this change may be expected to contribute to increasing one's ability to function in reality in a satisfactory manner for the attainment of one's goals.

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## APPENDIX: THE DIMENSIONAL QUESTIONNAIRE OF REALITY

### About Reality

REALITY is considered a central construct in the life of all people. Imagine there is someone who does not quite know what REALITY is. Please explain to that person the meaning of REALITY in general and for you.

The following table presents various descriptions of REALITY used by people from different professions and points of view. Each description refers to a specific aspect of REALITY. Each aspect is first defined in general and then by means of several examples designed to clarify the aspect. You may change the examples or add new ones.

Concerning each description please check to what degree the described aspect is important for expressing what reality is, what it means in general and for you. Please give your answer by putting a check mark X in one of the four response alternatives: Very important, Important, Not important, Not at all important.

Reality in the Sphere of Meaning

The different descriptions	Very Important	Important	Not important	Not at all important
<p><b>The kind of thing reality is, the general category to which it belongs, the framework in which it can be classified</b>                      e.g., it belongs to social life, to culture, to politics, to management, to physics, to daily life; it is an abstraction, a concept, a theory</p>				
<p><b>Types and kinds of reality</b>                      e.g., there is physical reality, perceived reality, emotional reality, scientific reality, imaginary reality</p>				
<p><b>The parts of reality, the components of which it consists</b>                      e.g., includes objects, regulations, styles of behavior, people, everything</p>				
<p><b>The function, purpose or role of reality</b>                      e.g., to provide information, to help organization, to unite society, to enable orientation</p>				
<p><b>Size and dimensions of reality</b>                      e.g., it may be long, deep, wide, narrow in coverage, small, gigantic</p>				
<p><b>To whom or to what reality belongs, who possesses it</b>                      e.g., it may belong to the individual, to the state, to the media, to God</p>				
<p><b>The state of reality and possible changes in it</b>                      e.g., reality may be stable, shaky, firm, fragmentary, changing, static, immutable, it exists, it does not exist</p>				
<p><b>Actions that reality can do</b>                      e.g., it enables people to act, to attain their goals, to plan, to destroy everything in an earthquake</p>				
<p><b>Thoughts, associations, conceptions and memories that reality can evoke or inspire</b>                      e.g., it can evoke associations, thoughts about events and other people; it can help us create a history and a future, reality can evoke conceptions about itself, about religion, about life or death</p>				

<p><b>Judgments, evaluations and opinions concerning reality</b>  e.g., reality can be veridical or fake, faulty, misleading, partial, important, negligible, irrelevant</p>				
<p><b>The structure of reality, how its parts are arranged or organized</b>  e.g., it can include several layers one on top of the other, it can have a hierarchical structure with the important element on top and the hidden parts underneath</p>				
<p><b>The materials of which reality is made</b>  e.g., it is made of different kinds of materials, building materials, stone, mortar, all elements, metals, information, it is not made of any materials, it is immaterial</p>				
<p><b>The place or location of reality</b>  e.g., it is in the physical sphere, in the minds of people, in the open space around us, it is everywhere, it is nowhere, it is only with God</p>				
<p><b>Quantity of reality</b>  e.g., there is a lot of reality, sometimes there is too little reality, there are many kinds of reality, there are many possible realities, reality is the totality of everything</p>				
<p><b>Actions that can be done with reality or to it</b>  e.g., reality can be reported, investigated, stored, attacked, falsified, ignored, spoiled, soiled, destroyed, developed</p>				
<p><b>Causes and antecedents for the existence of reality</b>  e.g., the causes are the need for orientation, for the formation of a conception of reality, for ordering all elements and materials and objects</p>				
<p><b>The development of reality, how was it in the past, how will it be in the future</b>  e.g., in the past it was more limited, it has developed along with technology and science, it is evolving</p>				
<p><b>Temporal characteristics of reality</b>  e.g., reality can last from a second to eternity, some parts of it exist milliseconds, it can last for eons</p>				



<p><b>Feelings and emotions that reality can evoke</b>  e.g., it can evoke admiration or satisfaction, anxiety, worries, fear, depression, anger, happiness, joy, love, no feelings at all</p>				
<p><b>Who deals with reality or is concerned with it in some way</b>  e.g., scientists, philosophers, economists, politicians deal with it; everyone discusses it or thinks about it</p>				
<p><b>People or objects affected by reality</b>  e.g., all people are affected by reality or its absence, objects, things, ideas are affected by reality, events, entities, situations, all beings, not dreams or thoughts</p>				
<p><b>The manner of operation of reality, how it functions</b>  e.g., reality functions by means of physical processes, the actions of people, reactions of materials</p>				
<p><b>Results, consequences and implications of reality</b>  e.g., the results of reality are life, death, revolutions, changes, happiness</p>				
<p><b>The weight or mass of reality</b>  e.g., it can be light or heavy, its weight depends on the materials of which it consists, on the experiences which it evokes</p>				
<p><b>The belongings or possessions of reality</b>  e.g., everything that exists belongs to it, all things that are real are possession of reality, nothing belongs to it, reality possesses human beings who become enslaved to it or addicted to it</p>				
<p><b>The sensory characteristics of reality: its form, colors, brightness, its sound, tactile characteristics</b>  e.g., its form can be straight or curved, its colors dim, its sound unclear or melodious; reality can affect the visual sense or the auditory one; it can affect all senses, the internal and the external ones</p>				

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## **AUTHOR INFORMATION**

**Full name:** Shulamith Keitler

**Institutional affiliation:** School of Psychological Sciences, Tel-Aviv University

**Institutional address:** Tel-Aviv University, Ramat Aviv, Tel-Aviv, Usrel 69978

**Short biographical sketch:** Shulamith Kreitler was born in Tel Aviv. She is a full professor of psychology at Tel Aviv University since 1986, and has worked at Princeton, Harvard and Yale Universities. She is a certified clinical psychologist and health psychologist. She has established the Center for Psychooncology Research at the Sheba Medical Center, Tel-Hashomer and functions as its director. She is a world-renown psychologist, known for her new approach to meaning, and the cognitive orientation approach for predicting and changing behaviors, and for her work in the psychology of the arts. She has published over 200 articles in major journals and 24 scientific books about cognition, meaning, personality traits, and the perception of art. Her most recent publications are two books about meaning (*The construct of Meaning, Spheres of Meaning*) and two books about creativity (*New Frontiers in Creativity, New Horizons in Creativity*). She has been married to Hans Kreitler (who died in 1993) and has one son and two grandchildren.