Construction of reality and hypnotic phenomena

Burkhard Peter

I will make some introductory comments regarding certain central aspects of radical constuctivism, especially those which are closely related to the theme of this contribution: changing the construction of reality through the use of hypnosis and suggestion. Then I will explain and summarise the criteria which we, as human beings, use to define our experience of reality as real, as opposed to being just imagined. Knowing these criteria might help to induce complex hypnotic phenomena, such as age regression or time progression. This will be the practical use of this contribution. Finally I will cover some general implications of radical constructivism in relation to therapeutic hypnosis.

The viewpoint of radical constuctivism

To prevent any misunderstanding I would like to begin with the distinction between the world as a physical object, the transphenomenal world, and the world we live as our reality, the phenomenal world. We can comment only on the latter one, the phenomenal world, as the transphenomenal physical world is fundamentally closed to our perception. What we subjectively experience as reality is not just a portrayal of the physical world, such as the naive-realist´s theory of perception suggested. Nor does our brain simply process external stimuli into meaningful information, such as suggested by the information processing model.

The viewpoint of radical constuctivism (von Glasersfeld, 1984; Kruse & Stadler, 1987) is that our brain/cognition unit is semantically closed but only energetically open. In other words, our brain is a closed system with respect to information flow; it is an open system with respect only to energy flow. External stimulation provides only initial energetic conditions to which the cognitive system produces meaning in a self-referential manner. This means that all perception which we experience as coming from the external environment is - in a strict sense - internally generated; that all meaning concerning external things that we take as a priori given is a construction of ours projected on these external objects.

Radical constuctivism gives up the postulate that we truly perceive the "real world" in an objective sense. Instead it claims that knowledge must be *viable*, that is, it must

fit into the experiential reality of the person. So if, according to radical constuctivism our reality is basically a construction of our brain, hypnotic phenomena can be experienced as real, as a true perception of reality. According to the theory of radical constuctivism there is basically no difference between a "hypnotically hallucinated" and a "truly perceived" perception (cf. Kruse & Gheorghiu, 1992).

Given this position one might be surprised about the fact - and this is often used as an argument against radical constuctivism - that people obviously perceive the same reality. One can reply that through shared genetics human beings have in common similar morphological and biological equipment, and within the same culture we have a similar upbringing and socialisation. Piaget for example showed precisely the sequences in which humans develop the cognitive ability of constructive operations, from childhood through maturity in adulthood (Piaget, 1975; von Glasersfeld, 1978). So it is likely that we humans produce similar constructions of reality, comparing and aligning them in permanence via processes of assimilation and accommodation. They finally become our shared reality.

Just how fragile this process of individual and social reality is can be seen in our daily clinical work with patients who come to us with strong beliefs about reality, which in part or in total, are very different from our own, and different from the general view of reality. Such beliefs are often transformed into neurotic, psychosomatic, or even psychotic views of the self and the world. We can also experience this in a positive way when we, with or without the help of hypnosis, are able to help our patients to accept a new view, a new construction of themselves and their world.

Citeria for the "construction of reality"

An essential criterion of hypnosis is that the suggested reality in hypnosis is actually experienced as "real". One could distinguish "real hypnosis" from "just imagination" by experiencing the suggestions as if they were true. I have called this the *criterion of evidence* (Peter, 1993).

Now, what are the criteria that humans basically use to determine whether a perception is truly experienced versus only imagined. Knowing about these criteria for the construction of reality and their consequent use could be of some help to elicit complex hypnotic phenomena like hallucination, age regression into the past, time progression into the future or any other "alternative reality". Since most of the readers are experienced hypnotherapists and have implicitly used these criteria in practice for a long time, I am not telling you anything new. I hope, however, I am presenting these issues in a new light.

Different researchers independently from each other have suggested 3 categories of criteria for the construction of reality. For example the models from Stadler & Kruse (1990) and from Peter Lang (1985) are quite similar:

Reality criteria (Stadler & Kruse, 1990)	**Bio-Informational model** (e.g. P. J. Lang, 1985)
1. Syntactic Reality Criteria	1. Situation Proposition
2. Semantic Reality Criteria	2. Meaning Proposition
3. Pragmatic Reality Criteria	3. Reaction Proposition

I would now like to go through these criteria as according to Stadler & Kruse (1990). The *syntactic reality criteria* relate to the sensory apparatus. That is, how is the experience perceived so that it has a character and feeling of realness? The semantic reality criteria relate to the cognitive apparatus, they define the "what" of a situation, the meaning of the perceived reality. And the third group of reality criteria, the *pragmatic reality criteria,* relates to action and interaction.

1. Syntactic reality criteria

The *syntactic reality criteria* relate to the sensory apparatus. They define the "how" of a situation; how is the experience perceived so that it has a character and feeling of realness? The following issues are relevant to this question:

a) Sensory modalities and submodalities

The more precisely and explicitly one asks a patient about his/her different *sensory modalities* (visual, acoustic, kinaesthetic, olfactory, and gustatory) and then about the respective *submodalities* (e.g. brightness, contrast or colour, to name only a few) the more the hypnotic hallucination will become real.

An example of applying these in a hypnotic age regression or time progression is when one asks the patient: "*How* do you begin to remember? Do you *see* yourself as a small child, clearly and in detail? What hair-colour do you have? Can you more clearly *hear* the voice of your mother or father, can you *smell* that particular smell (e.g. in the kitchen you lived in your childhood). And now simply *feel* how it is to be that small child?"

These questions are surely familiar to you. Grinder, Delozier & Bandler (1977) investigated the *Patterns of the Hypnotic Techniques* of Milton H. Erickson and found that it is obviously important to identify the primary representation system of the patient, to pace it, and then to make it overlap with the other sensory systems. This is however not at all new: the German hypnotherapist Max Dessoir had as early as in 1896 (e.g. pg. 71) already pointed out this facts and made use of it.

b) Inter-modality

The more senses are simultaneously involved in a particular perception - seeing, hearing, feeling, smelling - the more this perception is taken for real. In a reversed sense: Imagine you can see your neighbour, but you can't hear him, although you can see his mouth moving. And when you try to touch him your hand goes straight through him. I guess then you will have a problem.

This means that in order to build up a strong inner reality in age regression or time progression one might start from the first sensual impression, for example a visual one, and then proceed as follows: "And now that you can *see* it, can you also *hear* anything? Can you *smell* something? And what do you *feel* when you see/hear/smell?"

c) Spatial Orientation

Spatial orientation refers to position, to the three dimensions of length, height and width. It refers also to invariability and movement. Under the following circumstances, a perception is experienced most real:

- the more the object of perception, for instance a person, can be precisely located in a three dimensional room;
- the more he himself is perceived as a three dimensional object;
- the more he remains constantly in the same shape and form in case of a change in perspective;
- the more he is moving autonomously.

To stimulate this spatial experience one can ask from which perspective the patient can see himself or someone else, from which direction can he hear the voice, from the front, from behind, from left or right or from above; and what happens when the perceived person begins to move etc.

Excursion:
Near-senses, far-senses and their relation to the affective meaning

Before going on I would like to make a special point: from a therapeutic point of view it is not unimportant to which modality of the sensory system you point first or which one you leave out:

One can group the sensory modalities according to how they create personal meaning, how easily they arouse emotions or not, how likely we can associate or dissociate the experience. Think for example that you almost daily see brutal scenes or cruel situations on the TV - and this has no meaning for you, it hardly arouses any emotions in you. The *visual modality* is the most neutral one, the one you can most easily disconnect or dissociate from your entire experience. This is also true for the *auditory modality;* you can rather easily separate yourself from what you hear (if the voice does not carry emotions paraverbally).

With these 2 "far-senses", seeing and hearing, whether you get the full meaning, the full emotional impact or not, is highly dependent on the manipulation of *spatial orientation* and *submodalities:* The more distance you can create from what you see or what you hear, the more you can repress or dissociate your emotions. The more you transform colored pictures into black and white, the more you hear just words or sounds, far away, and not with intonations and the special characteristics of the voice, the more you get just the neutral, emotionfree content. To make my point, let's consider the opposite: imagine you hear the very special soft voice of your mother very close to your ear and you remember seeing some very special characteristics of her face, the

color of her eyes, her hair ...

This kind of fine tuning of the meaning by manipulating spatial orientation and submodalities gets more and more complex and difficult with the *kinaesthetic* feelings, the tactile feelings and even more with the internal perceptions aroused by strong emotions. Finally, it is even not possible to have a *gustatory* or *olfactory* impression without making sudden and involuntarily emotional attributions. Something tastes wonderful, delicious, terrible, or the many different shades in between. Concerning the smelling sense, you readily say this smells good or bad. You certainly know, whenever you want to do a rapid ageregression you must ask the patient to get a special smell of his/her childhood, to remember the taste of a special food of his/her childhood, or to get in contact with a special mood, a particular emotion (which is not repressed) of this time of his/her life. Erika Fromm calls this the "golden thread of affect".

These latter 3 sensory modalities, the near-senses: tasting, smelling and feeling are very important in order to associate an experience, to get the patient in contact with the affective meaning of it.

And you know, whenever it seems appropriate to dissociate a patient from his/her emotions (because they are too strong and overwhelming as with panic disorders or PTSD) you turn him/her away from the kinaesthetic or olfactory toward the visual or acoustic properties of this experience. The submodalities of the visual or acoustic senses are much easier to manipulate than that of the kinaesthetic, olfactory or gustatory senses.

Let me also bring two other basic points back into focus:

First: From the standpoint of radical constructivism the above criteria do not exist in the transphenomenal physical reality; in that reality there is no colour, contrast or defined shape, there are only electromagnetic waves without any perceptual definition. And our preference of three dimensional spatial orientation is only one of many possibilities. All these criteria are only parameters of order for our cognitive system and used by it to create reality in a self referential manner. These criteria are only real as long and as far as they are viable for us, that is, useful for our survival.

Second: Findings from neuropsychology have shown us that in the cerebral cortex of humans similar processing occurs during imagination as during perception of the external world. For example, the local blood flow to the cerebral cortex where visual information is processed increases during both the perception of visual material and during the imagination of visual material (Roland & Friberg, 1985). In addition, it has been shown that evoked potentials, which measure the electrical activity of the brain, are similar in both forms of stimulation, i.e. perception and imagination (overview from Farah, 1988). And finally we know from pain research that no external nociceptive stimulation is required, if and as soon as a form of neurologic pain pattern is established (e.g. Coderre et al., 1993).

The foundation of our psychotherapeutic and hypnotherapeutic work is built on by both the plasticity of our construction of reality and the neurophysiological equivalence

of the "really" perceived and the "imagined" reality. Imagine the other extreme: that the reality of humans would be definitely fixed and we were defined only by the external environment - detached from all of our wishes, dreams, goals and motivational conditions; imagine that it would not be possible to have another view or another perspective and no new experience except that which was presented to us - this would be a kind of radical determinism.

Of course, there are some cases where the "real" reality is so deeply impressive or unmanageable - such as in very adverse psychosocial situations or extreme traumatizing events (like the Holocaust was for so many), that there is hardly a possibility for change or to find another perspective. We as therapists then have but one possibility, namely to try to change the meaning of the actual situation together with the patient. And this fits exactly in the second group of the reality criteria, the semantic reality criteria.

2. Semantic reality criteria

The semantic criteria define the "what", i.e. the *meaning* of a perceived, imagined or hallucinated reality. They refer mostly to the expression, meaning and evaluation.

From our daily experience we know that a perceived object will more likely belong to our reality if it shows a certain expression, if it is meaningful or attractive to us. Many things we don't perceive simply because they lack expression, are meaningless or without any attractiveness, and in consequence they don't exist for us. *Emotions* play an important role in these groups of semantic reality criteria, as they contribute among other factors to the special meaning and the validity of the perceived object. Emotions stimulate arousal, hold attention and focus perception.

Now, for the development of a new, alternative reality in hypnotic hallucination, the following issues seem relevant:

When you were successful in constructing an object of perception by means of the *syntactic* reality criteria, then the more it will become real, the more it would *be expressive,* the more it would *carry subjective meaning,* and/or the more *attractive* it is for the patient. Emotions are very important in this respect. Emotional attributions always contribute most to successful constructions of reality. Therefore, do not only look at the meaning but also evoke an affect. Fairy tales, even shock and surprise, are some of the means to accomplish this. So, in order to enhance the success of hypnosis, do not only build up a perception and ask after the meaning of it, but also arouse an affect to which it is connected. Meaning and affect make the form alive, animate the object of perception, and vivify the reality.

Of course, this semantic level of the construction of reality is much more complex, more difficult, and more unpredictable than the formal syntactic components. Since there are not always clear instructions, this semantic construction depends upon the creativity of the therapist and the resources of the patient. The specific therapeutic contents therefore are always the cocreations of both parties, the therapist and the patient.

One can find in the literature a range of examples that highlight this form of cocreation - remember for example Pierre Janet´s "Marie" or Erickson's "February Man" (Erickson & Rossi, 1989). In both cases, however, also the criteria of the following third group play an important role.

3. Pragmatic reality criteria

This third group of reality criteria, the pragmatic reality criteria, relate to *action* and *interaction.* Think for a moment about in how many of Erickson´s cases he ordered his patients to act and interact not only in hypnotic hallucination but also in vivo, in reality. The active confrontation with the physical and social environment is part of an effective therapy for many patients - not only in explicit behaviour therapy - as we construct our reality also by action and interaction. It is obvious: The more immediately you can act with the meaningful object, or the more you are able to interact with someone as a person, the more you experience them as real. Particularly the following subcriteria are of importance here:

a) *Effect:* An object will be seen as more real the more effect it has, or the more efficacious it is, that is, the more a relationship between cause and effect can be clearly seen. This is what Bandura (1977) elaborated in his theory of self efficacy.

b) *Touchability:* The more a perceived object can be experienced through touching, is part of an action, or when it resists an action, the more realistically it is experienced. Piaget (e.g. 1975) for example described in detail how a child experiences and creates his/her reality by doing and touching things.

c) *Anticipation:* There appears to be a big difference in the experience of an event, depending on whether the event can be anticipated or not.

d) *Intersubjectivity:* The more people perceive an object, or the more people are involved in an event, the more real it is experienced. This group-dynamic effect is called the cocreation or the social construction of reality. We observe it in situations where hypnotic phenomena are easier to induce when more people are present. That's the reason why Liebeault, Charcot, Wetterstrand, and even Erickson preferred to treat patients in a group setting.

In our example of age regression or time progression, this means we need to ask the patient to do something with the object or the person focused on during hypnosis. If possible this even means asking the patient to touch the hallucinated object, to make contact with the hallucinated person, to talk to him/her, to argue with him/her, to ask for help, etc. That is, to do everything that one would do with a real object or person.

Therapists who work with traumatised patients, for example, know how important it is to obtain as clear a memory as possible of the traumatic event: what happened when, with whom, and how exactly it happened. Also Freud postulated as the main goal of psychoanalysis the bringing into consciousness of repressed material. Remembering the above criteria for the construction of reality we now can understand the practical relevance: we can reevaluate a traumatic event or a traumatising person only then when

we literally use all our senses, when we can see, hear and feel again what has happened. Then we are able to make contact, able to interact. Only then we can change reality through action and interaction. To do so we have to see, hear and feel the meaning of the event and its emotional value. And only when we begin to perceive the traumatic situation in detail and understand the destructive meaning, are we capable of coping better with the whole situation. Perception, meaning and action are determined by each other, and together they contribute to a perception of reality that makes sense and enables us to act effectively so that we can understand the meaning of our lives.

Conclusion

In conclusion I want to make some general points about the implication of radical constructivism for therapeutic hypnosis:

If we cannot experience reality as something objective or as something independent from ourselves, then the suggestion model à la Bernheim doesn't make sense. This Suggestion Model can be compared best to the information processing model, because it assumes that the suggestive stimulus must be, at the very least, understood semantically or even iconologically, in order to be transformed adequately by the reaction. This would presuppose the cognitive system to be semantically open, which from the viewpoint of radical constructivism is not the case.

The view of radical constructivism agrees more with a rapport model of hypnosis. This holds:

1. Humans are self organising systems, and as such are semantically closed. Therefore they can only be influenced by energy input. Hence no meaning or content can be exchanged.
2. Hetero-suggestions get their meaning only via auto-suggestions. So we never know what meaning a patient attributes to our suggestions.
3. Therefore it is important to establish the meaning of a given suggestion together with our patient, and to construct a joint reality of this suggestion.

In order to do this we need a close and trusting therapeutic relationship, which we traditionally call rapport. However, I am not the first one and I will not be the last one who states that rapport is a key concept in clinical hypnosis and hypnotherapy (Moll, 1892; Banyai, 1991; Peter, 1996).

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