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Patterns of subjective experiences in dyadic  
interactions

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## Theses

In my doctoral research I studied the patterns of subjective experiences in dyadic interactions with questionnaires which measured the alteration of consciousness, the judgment of the interaction, and the characteristics of the relationship. One of the interactions was hypnosis, which can be considered as a model of dyadic interactions, so one part of my analyses was the processing of the experimental data from the Hypnosis Laboratory at the Department of Affective Psychology of Eötvös Loránd University. One of the main objectives of my research was to capture and to typify the patterns of subjective experiences during hypnotic interactions and to compare these patterns to the subjective experiences of other dyadic interactions.

In the *social-psychobiological approach* (BÁNYAI, 1991, 1998, 2008a), hypnosis is conceptualized as an altered state of consciousness with potential social and biological adaptive value, arising in a special social context in the subject, as a result of reciprocal interactions between him/her and the hypnotist. In this process, the hypnotic induction is functioning as the instrument of mutual cognitive and interpersonal attunement. According to this model, the healing effect of hypnosis is based on the short-term but intense relationship of hypnotist and subject that resemble the basic intimate relationships with mutual regulatory functions, so hypnosis can be considered as the model of interpersonal adaptation as well (BÁNYAI, MÉSZÁROS, and CSÓKAY, 1982, 1985; BÁNYAI, 2008b).

In our laboratory, we use an interactional, multidimensional social psychophysiological experimental approach since the beginning of the 1980s. According to this paradigm, we record and analyze various data of the subjects and the hypnotists in parallel. We record the previous attitudes and expectations, the verbal and nonverbal behavioral manifestations, the subjective experiences of the hypnotic sessions, the data on the relational dimension and the various signs of interactional synchrony on the physiological, behavioral, and experiential level as well (BÁNYAI, 1998, 2008a). This approach required the modification and improvement of the questionnaires and methods used for the exploration of subjective experiences in hypnosis. The modified version of the *Archaic Involvement Measure* (originally suitable only for subjects) was developed in our laboratory for hypnotists as well (BÁNYAI et al., 1990; BÁNYAI, 2008); the measurement of the phenomenology of the alteration of consciousness in case of hypnotists was applied for the first time by our laboratory (*Phenomenology of Consciousness Inventory, PCI*, PEKALA, 1982, 1991a,b; SZABÓ, 1989), and we developed a questionnaire which directly asks the participants to judge the interaction itself (*Dyadic Interactional Harmony* questionnaire, DIH; JÓZSA, 1997; VARGA, 2004; VARGA et al., 2006). Another innovation developed in our laboratory is the Parallel Experiential Analysis Technique (PEAT: VARGA, BÁNYAI, and GÓSI-GREGUSS, 1994), which is the interactional modification of the method of SHEEHAN and MCCONKEY (1982) and which makes the simultaneous, dyadic analysis of the free reports of subjective experiences of hypnotists and subjects possible. With the application of this method, we were able to demonstrate the synchronization of subjective experiences of hypnotists and subjects (VARGA, BÁNYAI, and GÓSI-GREGUSS, 1994; BÁNYAI, 2008a).

The systematic analysis of free reports revealed that in case of the subjects, the experiences regarding the alteration of their consciousness is not strongly related to their hypnotic susceptibility (VARGA, 1991; 2004). Another interesting result was that even in the standardized, experimental setting, hypnotists are also deeply involved and report the alteration of their consciousness as well, almost independently from their hypnotic susceptibility (VARGA, BÁNYAI, and GÓSI-GREGUSS, 1995, 1999, 2004).

The questionnaires mentioned above were used in my research as well. Moreover, one of my aims was to confirm the reliability and validity of these methods on a large sample and

beyond hypnotic context. These questionnaires are used by our team mostly in hypnotic context, but I wanted to analyze the reliability and validity of these instruments in various hypnotic and other kinds of experimental settings and in natural, everyday interactions as well. For the sake of this, I aimed to identify, describe, and systematically compare the patterns of subjective experiences characteristic of various situations.

The other main objective of my research was to grasp the interrelations of the experiential variables (the judgment of the interaction, the relational dimension, and the alteration of consciousness) measured in the experimental hypnotic interactions on the level of the dyad, i.e., the analysis of the joint patterns of subjective experiences of hypnotists and subjects. In addition to this, I tried to identify and describe the types of the dyadic patterns of subjective experiences and I analyzed their relationship with the hypnotic susceptibility of the hypnotist and the subject. On the basis of our previous results, I expected that various types or patterns of experiences of mutuality could be identified at the level of the dyad, but these would not be closely related to the hypnotic susceptibility of either the subject or the hypnotist.

## METHOD

### Materials

For the quantification of the subjective experiences regarding the trance state, I used the *Phenomenology of Consciousness Inventory* developed by PEKALA (PCI, 1982, 1991a, b). This 53 item self-report questionnaire has 12 dimensions and 14 subdimensions; stimulus conditions associated with altered states can be quantified as to PCI intensity and pattern parameters. The dimensions and subdimensions are as follows: I. *Altered Experience*: 1. *Body Image*, 2. *Time Sense*, 3. *Perception*, 4. *Unusual Meaning*; II. *Positive Affect*: 5. *Joy*, 6. *Sexual Excitement*, 7. *Love*; III. *Negative Affect*: 8. *Anger*, 9. *Sadness*, 10. *Fear*; IV. *Attention*: 11. *Direction*, 12. *Absorption*; V. *Visual Imagery*: 13. *Amount*, 14. *Vividness*; VI. *Self-Awareness*; VII. *State of Awareness*; VIII. *Arousal*; IX. *Rationality*; X. *Volitional Control*; XI. *Memory*, and XII. *Internal Dialogue*. The PCI also contains five pairs of reliability items. A later version consists of 5 factor-based scales on the basis of the factor analysis of the 26 dimensions (KUMAR, PEKALA, and CUMMINGS, 1996): 1. *Dissociative control*; 2. *Positive affect*; 3. *Negative affect*; 4. *Visual imagery*, and 5. *Attention to internal processes*.

For the characterization of the interaction, I used the *Dyadic Interactional Harmony* questionnaire developed in our laboratory. The questionnaire is not specific for hypnosis, so various types of interactions can be compared, and it is easily applicable for parallel processing of the data of the interacting partners. The DIH has four scales: *Intimacy*, *Communion*, *Playfulness*, and *Tension*. The DIH is able to characterize the degree and pattern of harmony between the interacting participants (see the process of the development of the questionnaire in JÓZSA, 1997; VARGA, 2004 and VARGA et al., 2006).

For measuring the relational dimension of the hypnotic interactions, I used the modified, Hungarian version of the *Archaic Involvement Measure* (AIM, NASH, and SPINLER, 1989). The original version quantifies the positive, transference-like experiences of hypnotic subjects (AIM+). The factor structure of the Hungarian version was: 1. *Admiration and bonding*, 2. *Fear of negative appraisal*, and 3. *Dependency needs* (BÁNYAI, VARGA, and GÖSINÉ GREGUSS, 2001). In accordance with the interactional approach and to the social psychobiological model of hypnosis, BÁNYAI and her colleagues (BÁNYAI et al., 1990; BÁNYAI, 2008) developed methods for measuring the *negative aspects* of archaic involvement (AIM-) and they adapted the original questionnaire to be able to measure the archaic involvement of *hypnotists* as well. In case of hypnotists, we use the above mentioned two

scores referring to positive and negative involvement as well (AIM+ and AIM-). In case of the hypnotists' questionnaire, a 4 factor structure was revealed: 1. *Bonding and positive relationship*; 2. *Need to care and concern*; 3. *Fear of negative appraisal*, and 4. *Need to control* (BÁNYAI, 2008; TAUSZIK et al., 2006).

In the experiments described here we used the Hungarian versions of four scales for measuring hypnotic susceptibility: The two individual scales were the *Stanford Hypnotic Susceptibility Scales, Forms A and C* (SHSS:A and SHSS:C, WEITZENHOFFER and HILGARD, 1959, 1962), and the two group scales were the *Harvard Group Scale of Hypnotic Susceptibility* (HGSHS, SHOR and ORNE, 1962) and the *Waterloo-Stanford Group Scale of Hypnotic Susceptibility, Form C* (WSGC, BOWERS, 1998a, b). The first publication on the Hungarian versions is GREGUSS et al. from 1975, the detailed description of the scales can be read in MÉSZÁROS 1984, and the Hungarian version of the WSGC was made by Anna GÖSINÉ GREGUSS in 1999. These standard scales measure hypnotic susceptibility on a 0-12 scale. According to the original definition by WEITZENHOFFER and HILGARD (1959), scores 0-4 on the scales mean low, scores 5-7 mean medium, and scores 8-12 mean high hypnotic susceptibility.

## Procedure

In my analyses, I processed the data of hypnosis experiments conducted at our laboratory: 521 subjects from group hypnoses and 389 dyads from individual hypnoses (389 subjects and 21 hypnotists; each hypnotist had several subjects). Some of the individual, experimental hypnotic sessions were the standardized application of one of the hypnotic susceptibility scales, while the others were partly standard (i.e., the classic standard scales combined with other tasks), and some of them were partly free (i.e., free induction, free analgesia suggestion, tested by a standardized cold pressor test, standardized age regression and trance-logic suggestions, free dehypnosis).

In addition to the hypnotic interactions, I analyzed other interactions as well: Most of the data of these interactions were collected by psychology students of the ELTE University, as part of their work for their BA or MA thesis, carried out under the supervision of their professor, observing the ethic rules of psychology. Only healthy, adult, anonymous volunteers participated in the studies, after informed consent. In case of these interactions, depending on the nature of the situation studied, we used the PCI, or the DIH questionnaire, or both (the AIM was only used in case of hypnotic interactions). The situations/interactions analyzed besides hypnosis were as follows: 1. *Waking experimental situations* (PCI: 180 subjects, DIH: 278 dyads); 2. *Sexual interactions* (285 heterosexual pairs); 3. *Playing music in a band* (PCI 26 subjects); 4. *Playing sports* (PCI: 29 subjects, DIH: 25 dyads); 5. *Role-playing gamers* (40 subjects); 6. *Working* (DIH: 88 dyads); 7. *Dancing* (DIH: 47 dyads); 8. *Recreation* (41 dyads).

## RESULTS

For the statistical analyses I used the SPSS 17.0 program. Since the variables were usually not normally distributed and the homogeneity of variances were often not equal in the samples, I used nonparametric tests and in the comparisons I applied the Bonferroni-Holm correction (HOLM, 1979), while in the interpretation of the results, I took the effect sizes into account as well (COHEN, 1992).

Summarizing the **reliability** analyses, we can say that all three questionnaires proved to be adequately reliable: 1. The four scales of the *Dyadic Interactional Harmony* (DIH) questionnaire had reliability coefficients between .76 and .94 regarding the whole sample (N=2622); 2. In case of all the main and subdimensions of the *Phenomenology of*

*Consciousness Inventory* (PCI) (N=1880) the reliability coefficients reached or approached the .70 threshold of acceptability at least in one subsample; 3. The original version of the *Archaic Involvement Measure* measuring positive involvement (AIM+) and the factors of the questionnaire were adequately reliable, producing Cronbach alphas between .83 and .94 in cases of both the subjects and the hypnotists (N=1372), while the scale measuring negative involvement (AIM-) had lower reliability in case of subjects (.61).

Regarding **validity** of the questionnaires applied after hypnosis, it was important to analyze the influence of the **role** (subject or hypnotist) and that of the level of **hypnotic susceptibility**, because based on the literature and our previous results, I hypothesized that these variables can influence the judgment of the interaction (DIH), the alteration of the state of consciousness (PCI), and the archaic involvement (AIM) as well. The comparisons with the Mann-Whitney test revealed significant, well-interpretable differences with considerable effect sizes regarding the judgment of the interaction between hypnotists and subjects on the four scales of the *DIH* questionnaire: Subjects judged the hypnotic interaction to be more intimate, communional and playful, but less tense than did the hypnotists. These more intense positive experiences of the subjects reflect that hypnosis is a rare, out of ordinary, but mostly pleasant interaction for them, while for the hypnotists, it is more ordinary and routine, mainly because most of these sessions were standardized measurements of hypnotic susceptibility; nevertheless, intense individual experiences appeared in hypnotists as well. Considering that the sessions were relaxation hypnoses, it is understandable that the subjects reported less *Tension* than did the hypnotists.

I analyzed the relationship between the judgment of the interaction and the hypnotic susceptibility of subjects by the rank correlation method. They were significant and positive in cases of all four *DIH* scales, but they were either low or just around the .3 threshold for medium effect size. This implies that the hypnotic susceptibility of the subjects and the subjective judgment of the interaction by themselves or by their hypnotists have no direct, linear relationship to each other, so they capture different features of the hypnotic situation. Using this bigger sample (n=363 dyads), I could demonstrate again that the subjective judgment of the interaction is connected to other factors than the hypnotic susceptibility of the hypnotized subject as well: In fact, these other factors may be more important than hypnotic susceptibility (see our previous results e.g. in VARGA, 2004; JÓZSA and VARGA, 2011; VARGA et al., 2009). These results confirmed the results of our recent, detailed analysis (VARGA et al., 2012) which studied the relationship between hypnotic susceptibility and the judgment of the interaction on a dyadic level, and found no close linear relationship between the two features (using the hypnotic susceptibility of the hypnotists, and the difference between the hypnotic susceptibility of the subject and that of the hypnotist as variables as well). This result is important regarding the clinical use of hypnosis and the measurement of hypnotizability (for details see VARGA, 2008).

We used the Phenomenology of Consciousness Inventory (*PCI*) in several group and individual hypnosis sessions. This made it possible to **compare the alteration of consciousness in different hypnotic situations**. According to the pair wise comparisons (Cohen d) in the HGSHS situation, the PCI showed very similar results to its developers' data (PEKALA and KUMAR, 1987), which strongly supports its validity using this scale. In the present study, we used the PCI after the administration of another group scale, the WSGC, and we found well interpretable differences in the experience patterns of the two group scales. As there are more cognitive-perceptual test suggestions in the WSGC, it is a more difficult test than the HGSHS. Therefore, the average hypnotic susceptibility score of the WSGC sample was far, by almost two points lower than that of the HGSHS sample. According to the different nature of the two group scales, their difference approached or reached the threshold of medium effect size in case of the *PCI Altered experience* and its subdimensions, the

*Amount of Visual Imagery and Rationality*, the HGSHS group showing more intense alterations. These results reflect the difference between the two scales on the one hand, and the difference in hypnotic susceptibility between the two groups on the other hand; thus, the validity of the PCI is strengthened in case of another hypnotic scale. In the present study, the relationship between alteration of consciousness and hypnotic susceptibility was successfully demonstrated in case of the HGSHS, the WSGC, and the SHSS:A: The hypnotic susceptibility of the subjects correlated significantly with 11 PCI main dimensions in case of at least one of the three hypnotic scales. The strongest positive relationship could be found with *Altered experience* and *Altered State*.

As could be seen, the *PCI* reflects the differences among the hypnotic scales we used and the hypnotic susceptibility differences of our samples well. Although my present analyses are not focused on the relationship between subjective experiences and hypnotic susceptibility, the above mentioned data of the validity analyses suggest that *there is a* relationship between the pattern of subjective experiences and hypnotic susceptibility. This relationship was demonstrated in several studies of PEKALA's research group as well (BARNES, LYNN, and PEKALA, 2009); on the basis of their correlational and regression research, they developed a method to predict hypnotic susceptibility on the basis of the phenomenological patterns of subjective experiences (*PCI* patterns), and this way, to identify the important factors in the hypnotic trance experience, and to find the distinctive features of the trance types of highs, mediums, and lows (KUMAR and PEKALA, 1988; KUMAR, PEKALA and CUMMINGS, 1996; KUMAR, PEKALA and MARCANO, 1996; KUMAR, PEKALA and McCLOSKEY, 1999; PEKALA, 2002; PEKALA and FORBES, 1997; PEKALA and KUMAR, 1989, 2000; PEKALA et al., 2006; 2010a, b). The relationship between hypnotic susceptibility and the patterns of subjective experiences was demonstrated in our previous research as well (VARGA et al., 2001, 2009ab).

Another important result of the recent study is that according to the pair wise comparisons (Cohen d), the subjects reported the most intense experiences of the alteration of their consciousness in case of the partly-standard and the partly-free individual hypnosis sessions. It is a new result with the *PCI* in the literature, and it reflects the nature of the hypnotic situations well: At the subjective level, the alteration of consciousness was strongest when the interaction of hypnotist and subject was more flexible and informal than in case of the standard scales. This result confirms the discriminant validity of the *PCI*, because it adequately reflects the nature of the context in which it was used.

Another important result is the demonstration of the **experiences reflecting alteration of consciousness of hypnotists** in the present sample. These results obtained with the help of questionnaires are very similar to our previous results from the detailed content analysis of free reports of hypnotists. The next quotation is a good example for this: "When I hypnotize, I am at least as hypnotized as my subject" (experience of a female hypnotist scoring 0 on the hypnotic susceptibility scales). I compared the experiences of hypnotists and subjects along the *PCI* dimensions with Mann-Whitney tests, and as a summary we can say that: 1. The experiences of subjects are more intense on the group level; 2. the experience of inward directedness of attention was much more intense in case of subjects; 3. the experience of alteration of consciousness is more intense in case of subjects, mostly due to the alteration of body image and perception; 4. the experiences of the hypnotists can be characterized by more strongly kept volitional control and self-awareness with higher arousal level. These results reflect the difference between the two roles, they demonstrate – in an experimental context – those former theories which came mostly from therapeutic settings and suggested the idea of mutual hypnosis (DIAMOND, 1980; TART, 1967, 1969; SCAGNELLI, 1980; VAS, 1993), and they support the data about hypnotist involvement (VARGA, BÁNYAI, and GÓSI-GREGUSS, 1995, 1999, 2000).

The analysis of the **relationship between hypnotic susceptibility of subjects and their positive archaic involvement (AIM+)** revealed a significant, positive rank-correlational relationship between them, ranging from .38 to .57 in case of standard scales. These correlations are not significantly different from the data obtained by the authors who developed the scale and used it with the HGSHS (NASH and SPINLER, 1989). According to my results from large samples, AIM is a valid questionnaire with other hypnosis scales as well. An interesting and important result is that this positive linear relationship between hypnotizability and archaic involvement is not present in case of the partly-standard and partly-free sessions: In these cases, the correlation is close to zero. These interactions made it possible for a more informal and flexible hypnotic relationship to develop, which was not organized solely around the measurement of susceptibility, so it is well interpretable that the influence of hypnotic susceptibility disappears from relational involvement. These interactions were much more complex than the standard ones, so several factors could overwrite the effect of hypnotic susceptibility. This result is also important because these sessions were more similar to therapeutic ones and because they demonstrate that the subjects can go through intensive relational experiences almost independently from their hypnotic susceptibility; furthermore, the subjective experiences regarding the alteration of consciousness were the most intense in this sample.

Because the AIM characterizes the relationship between hypnotist and subject, it was hypothesized that the relational involvement of the subjects would be different in group settings than in individual ones: Since the individual setting makes a much more personal relationship possible, a stronger involvement could be expected from the subjects in this case. This assumption was supported by the data of the original authors (NASH and SPINLER, 1989), and it is further confirmed by the present analysis on the basis of 518 questionnaires from group- and 386 questionnaires from individual hypnosis sessions. According to the comparisons with the Mann-Whitney test, the subjects reported significantly stronger positive than negative archaic involvement in individual settings, while in group hypnosis negative involvement was slightly more intense, although the effect size was low in both cases.

An important aspect of the results is that on the basis of the analysis of the data from 21 hypnotists, it was a successful reproduction of our previous results demonstrating that **archaic involvement is a mutual phenomenon** (BÁNYAI, 2008; BÁNYAI and TAUSZIK, 2009; BÁNYAI et al., 1990), since in the present sample, the hypnotists were characterized by a similar degree of archaic involvement as the subjects. Although according to the comparison with a Mann-Whitney test, the subjects as a group reported significantly more intense positive archaic involvement than the hypnotists, the range of the data is very similar in the two groups. It demonstrates that the variability of involvement among hypnotists is as high as among subjects: It is possible for hypnotists even in experimental settings to experience almost the maximal relational involvement the scale is able to measure. This result is consonant with our data from free reports (VARGA, BÁNYAI, and GÖSI-GREGUSS, 1995, 1999, 2000), so these different methods of measuring subjective experiences (free reports and questionnaires) show similar results regarding this aspect as well.

Another important field of my research beside hypnosis was the analysis and systematic comparison of **subjective experiences of other experimental and everyday interactions**. I tried to analyze the patterns of subjective experiences with the PCI in interactions which were expected to produce the alteration of consciousness. I compared these patterns to the data from hypnosis experiments and from other, waking, experiments conducted at the Department of Affective Psychology of Eötvös Loránd University. Whenever the nature of the situation made it possible, we used the DIH questionnaire as well. I chose the following situations for analysis: sexual interaction, playing music in a band, playing sports, and role-playing (out of these, only sexual interaction was dyadic). Different



factors could have evoked the alteration of consciousness in the different situations. The results of the comparisons made with Kruskal-Wallis and Mann-Whitney tests showed that: 1. The situations were well distinguishable on the basis of the PCI patterns of experiences, and 2. the differences reflected the nature of the situations well (see Fig. 1). These results strengthen the discriminative validity of the PCI.

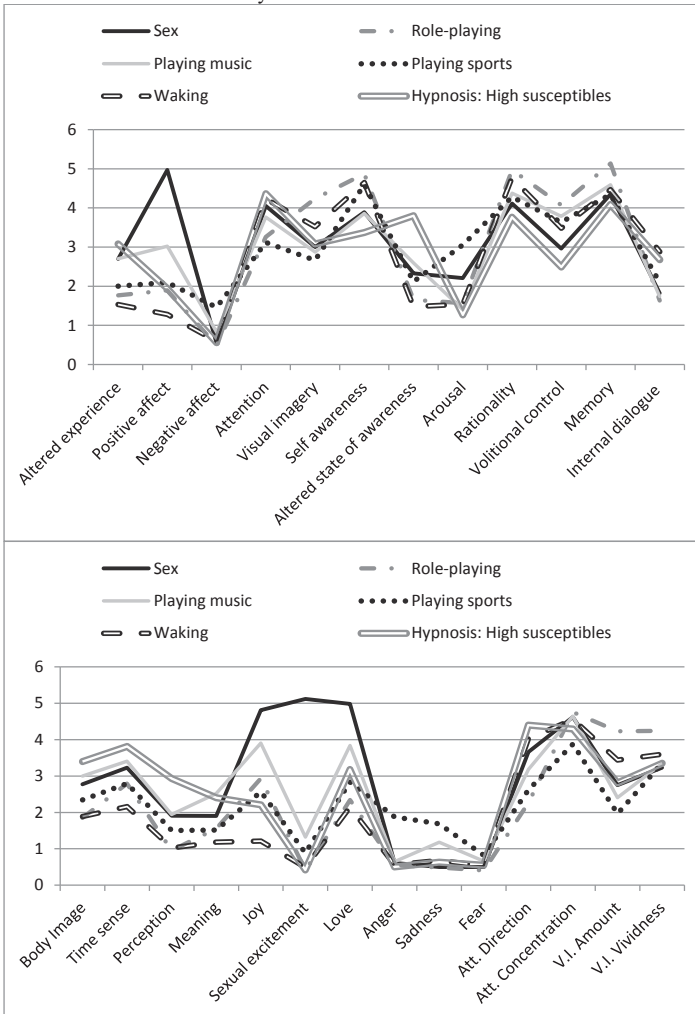


Figure 1 PCI patterns of the studied situations

I studied the *phenomenology of the dyadic interactions* in greater detail, so I compared the sexual interactions, the hypnosis of high susceptibles and the waking control sample by parallel analysis of the PCI and the DIH. Hypnosis and sexuality was connected by MOSHER (1980) as well, utilizing and adapting the features originally described as the three dimensions of hypnosis by SHOR (1962/2008)—hypnotic role-taking, trance, and archaic involvement—in his research regarding sexuality. But he was not the first one to suggest a connection between hypnosis and eroticism/sexuality. Maybe the best known case is FREUD, who rejected hypnosis—which he used frequently at the beginning—because he thought it created a context in which erotic affections emerge too easily (GRAVITZ, 2004). This idea had not lost its actuality later; for example, ORNE (1965) reported that counter transference is more frequent in hypnotherapy than in other types of psychotherapy, and that the involvement of hypnotherapists is exaggerated from time to time, what is more, “all too frequently the use of hypnosis is primarily in the service of the therapist’s needs” (p. 235). The opinion of BARBER is similar (1998): He wrote that the problematic effects arising from transference and counter transference are greatly magnified when hypnotic methods are used.

The results of the **comparisons of hypnosis, sexual interaction, and waking control** with Kruskal-Wallis and Mann-Whitney tests along the scales of DIH matched up with the hypotheses: 1. The comparison of *sex and waking control* showed that the differences were significant on all four scales of the DIH with exceptionally high effect sizes (from .87 to 2.26), experiences of *Intimacy*, *Communion*, and *Playfulness* were more intense in case of sex, while *Tension* was lower; 2. comparing *sex and hypnosis* of high susceptibles the greatest difference appeared on the *Intimacy* scale ( $d=3.07$ ) in favor of sex, together with more intense experiences of *Communion* and *Playfulness*. These results fit well together with the results of the comparisons of the three interactions along the PCI patterns characterizing the alteration of consciousness: on 20 out of the 26 PCI dimensions experiences of sexuality were significantly different from waking experiences (effects sizes were usually medium or high), the difference was greatest on the *Positive affect* dimension and on its subdimensions (effect sizes were between 1.96 and 4.32). The subjective experiences regarding sex and hypnosis of high susceptibles were significantly different on 19 dimensions of the PCI, effect sizes were mostly medium or high: in case of sex *Positive affect* is far more intense ( $d=2.90$ ), while *Altered experience*, *Altered state of awareness*, *Attention* and its *Direction* and *Internal Dialogue* is lower.

With the comparison of the phenomenology of three interactions – sex, hypnosis and waking control – it was demonstrated that on the basis of its subjective experience pattern, sexual intercourse can be interpreted as a special altered state of consciousness which is distinguishable from hypnosis and the waking state by the PCI. The exceptionally powerful positive emotions and affects are in the center of the specific altered experiences during sexual intercourse. Only sexual intercourse can provide these experiences of such intense positive affects on everyday basis. This fact has important practical implications, because positive emotions, social relations, social support, physical and psychological well-being, health and mortality are closely connected (for a summary see e.g. KULCSÁR 2005; HOLT-LUNSTAD, SMITH, and LAYTON, 2010; XU and ROBERTS, 2010). Sexuality is interpreted as a resource in some modern theory and research as well, which connect sexuality and sexual satisfaction directly to well-being, happiness, flow, and better health (ROSEN and BACHMANN, 2008; MAÄTTÄ and UUSIAUTTI, 2012; CSÍKSZENTMIHÁLYI, 1997). The pleasure-providing function of sexuality is specific to humans, it generates stronger pair bonding (BIRNBAUM and REIS, 2006; RICHTERS et al., 2006)

Positive affects (with the exception of the Sexual excitement subdimension) were more intense during hypnosis as compared to the waking control, which result fits the social-psychobiological model of hypnosis well (BÁNYAI, 1991, 1998, 2008a); according to the

model, hypnosis makes it possible for the therapist and patient to quickly engage in an intensive interpersonal relationship. As an important result of the present study, the consistent intensification of positive emotions was demonstrated during experimental hypnosis sessions, where hypnotist and subject met each other for the first time in their lives, mostly within the confines of standard procedure of measuring hypnotic susceptibility, often in a group situation. Thus, the theories and research on the beneficial effects of experiencing positive emotions mentioned above can be directly applied to hypnosis as well.

On the basis of 2304 questionnaires I conducted a discriminant validity study of the *DIH*, using data from *experimental settings* (n=1330): Hypnosis, joint Rorschach (WILLI, 1969; BAGDY, 2002; BAGDY, BAKTAY, and MIRNICS, 2006), Visual Imaginative Synchrony (VIS, VARGA S., VARGA, 2009a, b), and the waking control sessions from one of our hypnosis experiments (waking Hangol-6); and *everyday interactions* (n=974): working, sexual intercourse, dancing, playing sports, and leisure. According to the results, the differences in the nature of these dyadic situations were reflected in the subjective evaluation of the interaction on the four scales of the DIH (see Figs. 2 and 3). Kruskal-Wallis and Mann-Whitney tests revealed significant differences between experimental and everyday interactions on all four scales of the DIH: Everyday interactions were evaluated as more intimate, communal, and playful (effect sizes were high), while less tense than experimental interactions (effect size was low). The everyday interactions studied here usually happened between people who knew each other well, while in case of the experimental interactions, they usually met the first time in their lives. This is one of the differences that is reflected in higher *Intimacy*, *Communion*, and *Playfulness* scores, even if we leave out the sexual intercourse subgroup from the everyday interaction sample (which subsample could have biased the results of the whole sample in this direction).

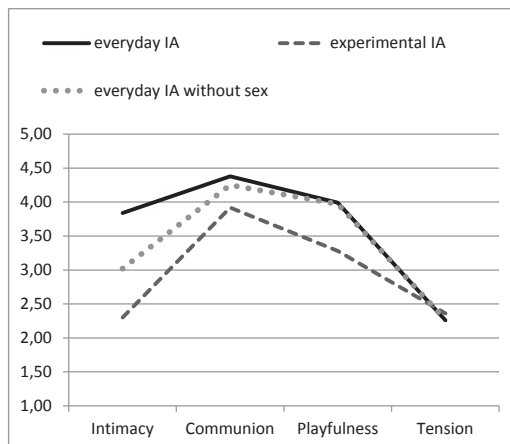


Fig. 2. General DIH patterns of experimental and everyday interactions

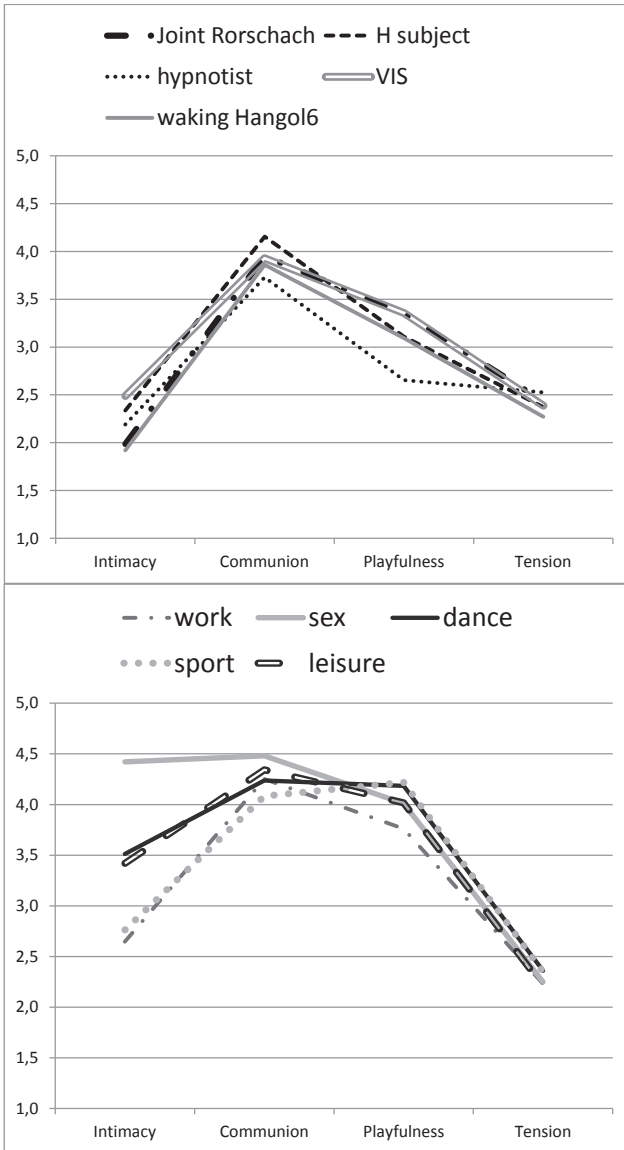


Fig. 3. Specific DIH patterns of experimental and everyday interactions

The dyadic interactions studied here were least distinguishable on the *Tension* scale of the DIH, most likely due to a floor effect: All of the situations required cooperation, and the data came from volunteers, who were usually motivated and enthusiastic. It is reasonable for a questionnaire like this to be able to measure the negative aspects of interactions, but the samples studied did not favor the demonstration of differences in tension on a group level. This tendency was present with the PCI negative affect dimensions as well, because on the level of group averages they were judged as minimal.

The use of natural, everyday interactions makes these results important, because one of the usual barriers of research on dyadic interactions and interactional synchrony is the exclusive study of artificial interactions, which makes it hard to generalize the results. My results demonstrated that the questionnaires applied in the study are appropriate for using them reliably and validly regarding natural, everyday dyadic interactions as well.

The main objective of my research was to identify and characterize the phenomenological patterns of experimental hypnosis sessions on the basis of joint analysis of subjective experiences of hypnotists and subjects reported on the three questionnaires introduced above (AIM, DIH, PCI). My main question was whether it is possible to define types of hypnotic interactions with specific experience patterns on the basis of the difference or harmony between the judgment of hypnotist and subject regarding their interaction using DIH.

The cluster analysis on the basis of the differences of scores of hypnotist and subject on the four DIH subscales revealed four well distinguishable clusters, which were not different regarding the hypnotic susceptibility of subjects and there was just a slight difference between cluster 2 and 4 regarding the hypnotizability of hypnotists. This result strengthens our previous data showing that in case of subjects there is no close, direct relationship between the behavioral manifestation of their hypnotic susceptibility and their subjective experiences (for a summary see VARGA, 1991; 2004). So the phenomenological patterns typical of the four clusters can occur together at any level of hypnotic susceptibility of subject or hypnotist. But it is worth comparing the clusters along the subjective experiences of the relational dimension (AIM) and the alteration of consciousness (PCI).

As a summary of the detailed comparisons of the clusters, we can say that the subjects in the four clusters did not differ from each other by the most important indices of alteration of consciousness regarding hypnosis (e.g. PCI *Altered experience* and *Altered state of awareness, Body image, Perception, Attention*). So the differences between the four clusters in case of subjects were rather based on the difference in the emotive value and degree of their experiences, which draws our attention to the relational dimension of hypnosis and to the necessity of interactional research.

In case of hypnotists, the clusters are a bit different from each other on the basis of their degree of consciousness-alteration and emotional experiences reported on the PCI: Trance experience and positive affect of hypnotists were strongest in Cluster 4, contrarily, hypnotists in Cluster 3 reported the weakest alteration of consciousness and emotional involvement. The alteration of consciousness and the emotional involvement of hypnotists in Cluster 1 was medium, but they reported the highest negative emotions; while in Cluster 2, hypnotists were characterized by their attention focused strongly outwards, with intense self-awareness and rationality, together with only mild alteration of consciousness and low emotional involvement. The analysis of the AIM revealed that the subjects' archaic involvement is very similar in the four clusters, while hypnotists' archaic involvement is different in the clusters.

So the results confirmed that the cluster analysis conducted solely on the basis of the hypnotist-subject differences in the judgment of their interaction on the four DIH scales resulted in 4 clusters which are well distinguishable along the other indices of subjective

experiences (AIM, PCI) of hypnotists and subjects, so they are valid constructs. The relationship between the subjective experiences of hypnotists and subjects was similar in the four clusters: where the subject had intensive experiences, the hypnotist had moderate ones, and vice versa:

**Cluster 1:** Slightly involved subject, tense, emotional hypnotist;

**Cluster 2:** The intense trance experience and emotions of the subject is guarded by a rational hypnotist;

**Cluster 3:** Relationally strongly involved subject, leastly involved hypnotist;

**Cluster 4:** Strongest trance experience and emotional involvement of the hypnotist, the subject is not involved emotionally.

This result implies that during experimental hypnosis sessions in the synchrony of subjective experiences the compensatory pattern is dominant.

My results regarding these clusters can be connected to the theories of interpersonal adaptation, although the initial studies on behavioral synchrony were focused on behavioral elements which were mutual, simultaneous, or happened in the same rhythm, so they studied reciprocity (CONDON and OGSTON, 1966, 1967; BERNIERI et al., 1988, 1994, 1991, 1996; CAPPELLA, 1981, CHAPPLE, 1982) and linked it to other concepts such as rapport (TICKLE-DEGREN and ROSENTHAL; 1990), emotional communication and empathy (e.g. HATFIELD, CACIOPPO and RAPSON, 1993; CHARTRAND and BARGH, 1999; LAKIN et al., 2003; LEVENSON and RUEF, 1997; BUDA, 2006), or affiliation and cooperation (BERNIERI et al., 1994, 1996; HOVE and RISEN, 2009; WILTERMUTH and HEATH, 2009; VALDESOLO, OUYANG and DESTENO, 2010). Reciprocity is in the center of biological and social norms theories of interpersonal adaptation as well, because they try to explain the phenomenon of innate synchronization with concepts like central oscillators (CHAPPLE, 1982; FELDMAN, 2003, 2006, 2007; MOORE and CALKINS, 2004), mirror neurons (RIZZOLATTI et al., 1996; GALLESE, KEYSERS and RIZZOLATTI, 2004; KULCSÁR, 2005), evolutionary and human ethological (e.g. TRIVERS, 1971, CSÁNYI, 1999, 2006) or social exchange processes (pl. LAWLER and THYE, 1999; CROPANZANO and MITCHELL, 2005), or even with perceptual and cognitive automatisms (e.g. CHARTRAND and BARGH, 1999; HATFIELD, CACIOPPO and RAPSON, 1993; MARTON, 1970, 2001, 2002).

The definition of interactional synchrony later widened, and from that time theories were considering not only the presence or absence of synchrony/reciprocity/mutuality, but they were talking about the optimal degree of synchrony and the compensatory mechanisms or complementarity behind reaching that degree. This was especially the case in those theories which saw the essence of interpersonal adaptation processes in reaching an optimal equilibrium, usually emphasizing the change in the arousal level during interactions and the role of the affective labeling of this change. Such theories include e.g. ARGYLE and DEAN's intimacy equilibrium model (1965), PATTERSON's arousal-labeling theory (1976), and CAPPELLA and GREEN's discrepancy-arousal theory (1984). These theories assume that the arousal change due to the discrepancies from expectations and its affective evaluation is the basis for reciprocity or compensation. The presence of reciprocity or compensation is governed by rules of social roles as well: In asymmetrical role relationships (e.g., doctor-patient, hypnotist-subject, etc.) complementarity is more common, while symmetrical relationships (e.g., friendship) favor reciprocity (BURGOON et al., 1995). The phenomenological patterns of hypnosis interactions revealed in the present study support the compensatory/complementary nature of the subjects' and hypnotists' experiences. One of the reasons for this can be the fact that both relaxational and active-alert hypnosis produce marked arousal changes in a dyadic situation, which is experienced by subject and hypnotist. According to the above mentioned theories, this arousal change is automatically labeled and also automatically affectively evaluated by the participants. Furthermore, in the sense of

enactive intersubjectivity (DE JAEGER, and DI PAOLO, 2008; FUCHS, and DE JAEGER, 2009), the partners coordinate their sense-making during the interaction, which process is called participatory sense-making, and the result of this complex process is such a pattern of subjective experiences which can only be revealed by the *joint analysis* of the experiences of both partner. Behind this phenomenological pattern, the mutual setting of the optimal involvement level can be supposed. This is an important issue, because neither of the phenomena mentioned above (e.g. interactional synchrony, reciprocity/complementarity, enactive intersubjectivity etc.) is specific to hypnosis, but during hypnosis the initiation and deepening of them is facilitated by the trance state developing in a dyadic interactional context. These processes play an important role in hypnotherapy, because this altered state makes it possible for the hypnotist to direct the attention of the patient to the desirable direction, accompanied by the intensification of such mechanisms that otherwise operate in mother-child or father-child relationships. This aspect of hypnosis is mentioned by several theorists; one of them is the social-psychobiological model of hypnosis (BÁNYAI, 1991, 1998, 2008a) and the description of maternal and paternal hypnosis styles (BÁNYAI et al., 1990; BÁNYAI, 1991; 2008a, VARGA et al., 2008). The names of the styles were given after Sándor FERENCZI, who mentioned mechanisms like these in connection with hypnosis as early as in the beginning of the 20<sup>th</sup> century (1909/2000). Other theories connected to this area is VANDENBERG's (1998) idea about the relation between hypnosis and development and the common processes underlying both and the study of VARGA (2012) about the factors facilitating the correctional relational experience provided by hypnotherapy. Trance and intense emotional involvement together (which was supported by the recent analyses and in the case of hypnotists, too) make it possible for hypnotist and subject to resonate onto each other's state on several levels, including bodily and imaginative changes as well (VARGA S. and VARGA, 2009a,b; VARGA S., 2011).

A study analyzing real hypnotherapeutic sessions could answer complex questions like what kind of a relationship exists between behavioral and phenomenological synchrony. It would be possible to identify the background of the compensatory experience patterns only on the basis of questionnaire-data with the detailed analysis of free reports. This could be the improvement of my study as well, since in the present analyses I compared the phenomenological experiences to only one behavioral factor, hypnotic susceptibility. I jointly analyzed (both statistically and professionally) the data on the different aspects of subjective experiences from the questionnaires, and in accordance with the interactional approach, I studied the experiences of hypnotists and subjects together. One weakness of my research is that although there are 21 hypnotists in the sample, which is quite good compared to the possibilities, it is a small number in a statistical sense, and it is far from a balanced sample regarding sex, age, professional experience, hypnotic susceptibility, and the number of sessions they participated in. The interpretation of some of my results is limited because of these factors (e.g. the role of the hypnotic susceptibility of hypnotists), but it is almost impossible to mobilize a hypnotist sample which is balanced in all of the above mentioned aspects. Methodological questions arise from the fact that my analyses are based on data which can be either interpreted as retrospective snapshots of the interactional experiences or global, momentary judgments of them, and in both cases they are very far from the real, dynamically ever-changing process which is the basic characteristic of human interactions.

In spite of the methodological difficulties, I think my analyses, which were focused on the phenomenological aspects of synchrony, applied an interactional approach and jointly studied the experiences of both participants of the dyadic situations produced novel results which were absent from the international literature.

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