Visual Imaginative Synchrony

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Theses of Doctoral Dissertation

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1. Introduction

The Visual Imaginative Synchrony (VIS) is an interactional synchrony phenomenon, which involves a natural form of interpersonal adjustment, involving the harmonization of imaginative activity which is identifiable by an external observer.

A couple of years ago in my hypnotherapeutic work I had the chance to encounter the collective experience of VIS with one of my patients. While working with traumatic childhood memories, pictures similar to the past ones started to reveal themselves without any direct hypnotic suggestions. It wasn't for a while until the collective nature of the experience became apparent to both of us. Apart from its diagnostic value with regard to the therapeutic relationship, experiencing a different aspect of interpersonal adjustment even amplified the feeling of understanding and safety from the therapeutic process.

The significant role of visuality in human functioning and the importance of the experience gained in the therapeutic process as a hypnotherapist led to objective measurement of VIS in a standardised research situation.

2. Interactional Synchrony and hypnosis

By interactional synchrony is meant the synchronizing of various individual rhythms in an interpersonal situation, and their coordination in time, synchronization which plays a central role in the formation of human relationships (Zucker, 1983; Warner, 1991). Research shows that the different manifestation of interactional synchrony - in addition to behavioural elements - can be shown both in *physiological* variables (Bányai, 1985; Grammer et al, 1998; Brunel & Martiny, 2000; Pelech, 2002; Biró, 2003; Sagaguchi et al, 2005; Richardson et al, 2005; Wiltshire, 2007) and in subjective *experiences* (Grammer et al, 1998; Varga et al, 2002; Varga, 2004; Kimura & Daibo, 2006).

These elements that appear in all close human relationships are fundamental features of any social interactions (Capella, 1991). They are automatic and unconscious elements (Burgoon et al, 1995) that are posited to influence intensively the experiences of the participants in the interactions (Burgoon et al, 2003; Kimura & Daibo, 2006), and affect the quality of intimacy as perceived by the interactional partners (Varga et al, 2002; Varga, 2004).

This synchronization is an essential element of interpersonal behaviour, and is of adaptive value for the individual (Burgoon et al, 1995; Brunel & Martiny, 2000). The role of interactional synchrony is central to the control of interactions (see e.g. Capella, 1994; Chartrand & Bargh, 1999), to the formation and harmonization of interpersonal attachment even in the early years (e.g. Beebe et al, 1982; Field, 1985), to the self-development (Caplowitz Barrett, 1997), to cognitive and emotional development (Gergely & Watson, 1999; Stern, 1999), to the personal presence and the nature of bounding in adult intimate and significant relationships (Harrist & Waugh, 2002; Feldman, 2007), and to inter-subjectivity and self-regulation (Baker, 2000; Biró & Bányai, 2007). In a harmonic interaction the participants experience bonding, safety, and social adaptation; they can handle and correct interactional errors or misunderstandings that may occur (Tronick, 1990).

The quality of significant attachments, the evenness of interactions, intimacy and consequently interactional sychronity are combined with the quality of psychological and physical well being.

The theoretical and practical aspects of hypnosis provide an ideal frame for the examination of elements and rules of interactional synchrony, it allows an insight into the functioning of ordinary relationships with significant, interactional synchronic effects. Though its effects are individual, its foundations are everyday. Due to methodological and ethical concerns, important relations of everyday life cannot really be examined in in vitro situations. Hypnosis that acts as model of intimate relationships makes these relationships that are based on attachment and togetherness able to analyse (Varga, 2004).

During hypnosis the hypnotist and subject experience a close and intimate relationship – the social-psychobiological model of hypnosis considers this as the key momentum of the therapeutic benefit (Bányai, 2002). Besides influencing the feelings of intimacy and security, the quality and degree of interpersonal adjustment in the formation of synchrony has a significant impact on the therapeutic prevalence of hypnosis as well. In the interpersonal synchrony, the newly created subjective reality, the safe therapeutic alliance is built and shaped by both the hypnotist and the subject in co-operation. The internal focus is mobilised by the therapist's adjustment to the patient, a collective awareness develops, the experiences harmonise on different levels of their symbolisation (Baker, 2000). The increase in the subjective depth of hypnosis can often be observed after interactional synchrony phenomena. That reflects automatic, unconscious processes that are the signs of being on the same wavelength (Bányai, 2000). Interactional sychrony forms a bridge in between two persons' feelings, that could become an instrument of collective rythm for the therapist in interpreting the subject's experiences (Bányai, 1991, 2000). During hypnosis, not only the patient but also the hypnotist may become deeply involved in the process. The hypnotists' spontaneous trans-experiences affirm the direction of research that on behalf of examining and understanding the relationship says that it is not only the subject's but also the hypnotist's experiences that are worth examining (Varga et al, 1999). The therapist's and the patient's intense feelings collaboratively shape the relationship (Varga, 2004).

The hypnosis research laborarory of ELTE that follows an interactional approach focuses mainly on *interaction* (Bányai et al, 1982, 1985). Extensive research is conducted on the behavioural, physiological and experiential aspects of subject's and hypnotist's reactions, and on the sychrony in between the interacting parties (Bányai et al, 1982, 1985; Bányai, 1985; Bányai et al, 1990; Varga et al, 1993, 1994; Bányai, 1994, 1996; Józsa, 1997; Bányai, 1998; Varga et al, 1999; Bányai, 2000; 2002; Varga et al, 2002, 2004; Varga, 2004; Biró, 2004, 2005; Varga et al, 2006; Biró & Bányai, 2007; Gősiné-Greguss, 2008; Varga et al, 2008). Though in a great number of the cases the hypnotic relationship is accompanied by collective intense visuality (Varga et al, 1993, 1999), only few research has been focused on visual sychrony, on the visual aspects of the collective experience itself. Apart from scientific data, there is only one French example on the phenomenon in the theraputic literature where a hypnothterapist decribes visual sychronity experienced with a patient during hypnosis (Balken, 2007).

The present doctoral dissertation concentrates on the experiential side of interactional synchrony, the measurement of subjective experience of Visual Imaginative Synchrony and its evocation under laboratory circumstances all have been attempted.

I developed a standard procedure for evoking Visual Imaginative Synchrony in a provoked situation under laboratory circumstances, the nature of visual synchronisation has been observed within an interactional framework. The relation of visual synchrony identifiable for an external observer could be matched to the trait-like aspects of the interactional partners, and to the measurements of the experienced state of consciousness, to the interactional situation and to the relationship itself. The procedure had been applied in both waking and hypnotic states. Complementing the measurement of evoked experiences, the spontaneous experiences of Visual Imaginative Synchrony have been tested by a newly developed questionnaire. By means of questionnaires that asked for retrospective, free descriptions, the emotional aspect of conscious collective visual experiences could be revealed.

3. Standardised observation of VIS experiences under laboratory circumstances

3.1. Elicitation of imaginative activity

In order to elicit VIS in a controlled manner, a stimulus word list has been compiled with a newly developed standardized procedure, which consists of co-validating - validated on three independent dimensions (thoroughness, lifelike representation and consistency) -, therapeutically valid expressions that move the average population on a medium level. The stimulus words used in the waking state were ”tower, earth/soil, ball, walk, valley”, in hypnosis „ship, landscape, road, music, autumn”.

3.2. VIS test

The VIS test has been developed in order to disclose the imagery experienced by the participants, whereby the research subjects reproduced their experiences by drawing on an A4-size sheet. The subject is asked to draw on the upper half of the paper, while the description of visual experiences is written on the lines provided below. The combination of drawing and description gives more information about the imagery so that different characteristics become measurable, such as proportion, focus, the position in space, the evoked emotions, experiences, and possible memories. In the waking state both the subjects and the experimenter completed the tests, while in hypnosis this was done either by the subject and the experimenters or by the subject and the hypnotist according to the research design. By means of VIS test the visual experiences become accessible for external observers as well.

3.3. Interactional approach in waking and hypnotic states

As synchrony phenomena cannot only be observed in hypnotic state, during the operationalization of VIS we developed a procedure that may be applied in both waking and hypnotic states. In waking settings the Experimenter (E) and the Subject (S) formed the interacting dyad, corresponding to Hypnotist (H) and Subject (S), the interactional partners in hypnosis. The topic is intimate both due to the imaginative activity and to the nature of synchrony phenomena thus an unprejudiced attitude is a basic condition in the construction and realization of the research both towards professionals and subjects. The development of informed consent happened in accordance with the above, as well as the confidential data processing expected in psychological research.

3.4. The research context

3.4.1. First study: waking context

In our first study that was conducted in 2007, the methodology developed for measuring VIS had become more definite. In this study we worked solely with waking states, the visual concordance of 48 dyads was examined in 240 (48 x 5) situations. Along with the hypnotic context, Es worked with Ss in waking states. Although the majority of the Ss were university students in order to avoid familiarity, none of them majored in psychology.

3.4.2. Second study: hypnosis and waking contexts

The hypnosis context research made part of a wider study "Affective Prosody in Waking and In Hypnosis: Comparative Studies" in 2007-2008. In hypnosis and in the waking state the Ss had to solve several tasks under standardized circumstances, one of them was the VIS procedure. ***4 Hs and 5 E worked with 40 Ss in the different situations***. According to the design of the wider research the VIS test took place in four different research situations.

- In *situation "A"* hypnosis took place, the Ss worked with a H all along, including the VIS procedure. The VIS test was recorded with 21 dyads, in 104 situations.
- In *situation "B"* hypnosis took place as well, but here during the tasks, including VIS test the H was replaced by an E, thus the S completed the VIS test with the E before the dehypnosis procedure. 17 dyads worked on the VIS test in 84 situations.
- In *situation "C"* the whole experiment took place in waking state, the H stayed in the room all along, including the test. In this configuration 21 dyads in 105 situations solved the VIS test.
- In *situation "D"* the whole experiment took place in waking state as well, but the H was replaced by the E for the tasks, so the Ss completed the VIS test with them. The VIS test was completed with 18 dyads in 89 situations.

In order to be able to exclude any influencing factors the studies took place in a silent experimental chamber under standardized, relatively stimulus-free experimental and technical conditions in university research room.

3.5. The VIS procedure

After receiving preliminary information about the circumstances of the study, each participant (Es/Hs and Ss) gave informed consent and completed the Vividness of Visual Imagery Questionnaire (VVIQ; Marks, 1973), which measures imaginative activity. In the waking state the E/H and the S listened together to 16-minutes of musical material consisting of seven pieces of different genres and moods. This compilation is replaced by the hypnotic inductions in the hypnosis experimental conditions, where the rapport and the induction foster the synchronization of the parties. Following either the music or hypnotic induction according to a **standardized script** the Es/Hs read **one test and five real stimulus words** in order to elicit the imaginative responses of both partners. After reading each stimulus word the S spent 20 seconds with eyes closed, and the E/Hs with eyes open, while they experienced the imaginative image invoked by the stimulus word. As the time was measured by the E/H, the S

only needed to concentrate on the stimulus word. After *each stimulus word* the interactional participants had approximately 1 minute to complete the VIS test.

3.6. Research Tools

In order to describe the relationship of VIS with other psychological measures, both Es/Hs and Ss completed the following tests:

- ***Vividness of Visual Imagery Questionnaire*** to measure imaginative activity (VVIQ; Marks, 1973),
- The 22-item version of the 19-item ***Archaic Involvement Measure*** (AIM; Nash & Spinler, 1989) adapted for waking state, which examines the negative side of archaic involvement between the interactional partners too (Bányai et al, 1990; Bányai, 1996),
- The Hungarian version of ***Phenomenology of Consciousness Inventory*** (PCI; Pekala, 1982; PCI-H; Szabó, 1989) was used to examine the pattern of experienced altered state of consciousness, which factor based evaluation included 5 sub-scales (Dissociative Control, Positive Emotion, Negative Emotion, Visual Imagination, Inner Attention Focus) (Varga 2004),
- ***Dyadic Interaction Harmony Questionnaire*** (DIH; Varga et al, 1999) to map the experienced interactional harmonization characteristic of the situation,
- ***Reading the Mind in the Eyes Test*** (RMET, Baren-Cohen et al, 2001) to measure the empathy-factor of the individual.

The whole procedure including the completion of the tests took approximately one hour in the first study and one and a half/two hours in the second.

3.7. Measurement of VIS: evaluation of VIS test dyads

The measurement of VIS involved evaluation of similarity in the VIS tests. As a first step three different raters were asked about each situation and rated the similarity of the VIS tests of the dyads. With the help of three independent raters we examined interrater agreement and scores higher than random choice. There was no guideline as to what the independent raters should base their judgment upon.

During the evaluation the rater had to rank the VIS tests assigned to him according to similarity. In the rating situation the raters made their judgement individually. Here the drawing and description of one S was evaluated compared to 4 pictures and descriptions of the E/H given to the same stimulus word where only one of them was a real pair. For sake of reliability the VIS test pairs of the dyads which achieved a high VIS rank score during the evaluation were measured again in a **re-test** by three new independent raters. For the re-test the original picture pair was kept while the other pictures and their descriptions were replaced by new pictures and descriptions given to the same stimulus word. In the situations which received a high VIS score at both test and re-test, **VIS was considered to be realized**. Hereafter these were called VIS positive (VIS+) situations, as where in a given dyad external observers unanimously or almost unanimously repeatedly and reliably identified harmonising of imaginative activity for the given stimulus word. Those dyads where at least one VIS+ situation was realized are considered **VIS+ dyads**.

3.8. Statistical analysis

When examining the relationship of occurrence of Visual Imaginative Synchrony with other test data the dyads were split into two groups. One of the subgroup consisted of dyads where a VIS positive situation existed with at least one stimulus word, while the other subgroup involved dyads where there was no VIS in even one case. In the comparison of the two groups the two-sample independent T test (t) and multi-point variance analysis was applied.

3.9. Results

In the first study, working exclusively with waking situations, **22.9 % of the dyads and 5.4 % of the situations** proved VIS+.

In the second study, we worked in four different situations. The **VIS+ ratio** was the following **in the different contexts**:

- In the hypnotic setting with the H 23.8 % of the dyads, and 4.8 % of the situations;
- In the hypnotic setting with the E 35.3 % of the dyads and 8.3 % of the situations;
- In the waking state with the H 33.3 % of the dyads and 6.7 % of the situations;
- In the waking state with the E 11.1 % of the dyads and 2.2 % of the situations proved VIS+.

Based on the results, the emergence of **VIS is not specifically connected to hypnosis, it does not depend on the constancy of the relationship** (it can easily be evoked by a new interactional partner) **and it seems to be independent of the reported experience of altered state of consciousness and of other trait-like variables.**

Characteristics of the VIS+ relationship in the waking state were:

- the S reports the interaction as less intimate or playful, experiences a low level of communion and a high level of eroticism,
- the E/H experiences a low level of dissociation.

Characteristics of the VIS+ relationship in hypnosis were:

- the S experiences a high level of communion with their partner, finds the relationship playful and experiences a lower level of eroticism, the S is less likely to report on the negative aspects of archaic involvement,
- the E/H experiences a low level of dissociation and eroticism, is involved in the process to a lesser extent, has no dependency need, and is not afraid of negative judgment.

Results regarding sex/gender and hypnotic susceptibility:

- In hypnosis VIS+ is more likely to emerge in between interactional partners of the opposite sex,
- The degree of hypnability did not influence the emergence of VIS in the dyad, neither from the subjects' nor from the hipnotists' point of view.

4. Spontaneous VIS experiences measured by questionnaires

Besides the standardised measurement of VIS, we also aim to map the intimate aspect of Visual Imaginative Synchrony that can hardly be defined and transmitted via paper and pencil questionnaires under laboratory circumstances. As opposed to the provoked, "here and now" nature of the standardised interactional process where imaginative activity is identifiable by external observers, the qualitative analysis of VIS examined **spontaneous experiences** in a rather *subjective, retrospective manner based on free descriptions*.

4.1. Subjects

The newly developed VIS Questionnaire was filled out by 67 subjects. Three respondents defined more then one experiences, therefore *71 questionnaires* were analysed at the end. Due to the contactability of respondents the research population is heterogeneous, as a consequence of data collection the the sample is not representative.

4.2. Qualitative Procedure/Analysis

4.2.1. VIS Questionnaire

The Visual Imaginative Synchrony *Questionnaire* is a ***newly developed questionnaire*** that we designed to measure the qualitative aspects of VIS. The questionnaire asks about the imaginary experiences, the situational context of VIS and about other possible comments. Both the *English* and the *Hungarian version* of the questionnaire have been used in our study. Every VIS experience had to be documented in a separate questionnaire. Like in the standardised study of VIS, an unprejudiced attitude was a basic condition in the construction and realisation of the qualitative research.

4.2.2. Coding and date procession

A ***newly developed coding sheet*** has been introduced in the content analysis, by means of which the VIS questionnaire results have been analysed according to the following cathegories: *relational context, interactional context, nature of experience, emotions and state of consciousness evoked be the recall of imaginary experiences.* After evaluating the answers given to the VIS questionnaire, the raters filled out the coding sheet as well. For sake of reliability a coding sheet was filled out relating to each questionnaire by ***3-3 independent raters***. The raters were university students, none of them majored in psychology and neither of them participated in the previous stages of our VIS study. After evaluating the VIS questionnaires, the coding sheets were analysed. The results of the coding sheets relating to the questionnaires were processed and a prevalence analysis was executed on anwers coded with high (2-3) level of interrater anwers.

4.3. Prevalence rates

Summarising the prevalence rates, according to the qualitative study characteristics of VIS experiences were:

- In most cases, interactional partners experience VIS in ***intimate interpersonal situations***.
- Parties who are experiencing VIS are mostly in the ***same physical location***.
- Parties consider VIS to be a ***peculiar but comfortable, and harmonious experience***.
- In cases where the respondent decribed their experience while answering the questions, the most prevalent feeling was ***joy and wonderment***.
- VIS is more frequently experienced in ***waking*** than in altered states of consciousness.

5. Discussion: the significance of the new measurement of interactional synchrony

Based on our results we can claim that VIS can be reliably *identified by external observers* in standardized waking and hypnosis research contexts. The operationalization procedure of VIS we developed, may be applied in both *waking and hypnotic states*. By ensuring the environmental circumstances the carefully designed experimental situation can *easily be completed*, the interactional partners found the procedure appealing, that provokes involvement without difficulty and motivates participation. Besides designing the situational context for experiencing VIS, the *structured process of evaluating* its existence had also been developed. In our series of studies on VIS, the evaluation procedure was based on the comprehensive assessment of the raters that has potential in enlarging applicability of results to the clinical field in the future.

The results of the VIS questionnaire on spontaneous VIS experiences suggest that VIS results evoked and measured under laboratory circumstances are not only artefacts. ***VIS is an existing phenomenon, its phenomenology is well-known in everyday life***. When describing spontaneous VIS experiences, respondents reported on the experiential prominence of visual synchrony.

Our research results can be integrated into the theoretical and experimental framework of the literature on interactional synchrony. VIS is a new kind of interactional synchrony phenomenon, that's significance as compared to the other interactional synchrony phenomena, is revealed both in the regulation and development of relationsips and in the establishment of attachment. This harmonisation – the Visual Imaginative Synchrony along with other sychrony phenomena – relates to the relational experience and to the experienced intimacy (Bányai, 2000, 2002; Varga, 2004) in therapeutic processes as well. The optimal level of synchrony provides a protected space for the patients which enables the corrective re-experience of basic relational models. VIS offers a new approach for the therapist in allowing greater emotional insight and a deeper understanding of the patients' internal world, its existance and nature convey diagnostic relevance both in terms of the therapeutic relationship and the patient's functioning. The observation of VIS experienced in both hypnotic and waking states, and the scientific research on its nature and on its proportional patterns manifested in relationships, help the therapists to work with experienced sychrony phenomena in a conscious and controlled way.

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