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# Interaction between multisensory information and emotional activation in video-facilitated psychotherapy

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## Abstract

**Background:** Emotional activation is regarded as central in psychotherapy. We have developed a method called VideoTalk, in which patients video themselves at home according to the therapist's instructions, and the videos are watched together in the therapy session. The aim of the study was to find out whether watching and listening to a video in psychotherapy readily activates the patient's emotions.

**Methods:** The video material was analysed by theory-based content analysis using the interacting cognitive subsystems (ICS) theory. The ICS theory suggests a link between sensory information and emotions and describes two levels of meaning: propositional and implicational. The implicational level gains information from the propositional level and directly from perceptions and is central to the activation of emotions. Five patients participated in our schema therapy-based intervention. Our material included videos of 10 therapy sessions, in which the patient and the therapist watched a video made by the patient at home in a state of helplessness. Watching the video in the session was performed in parts, and between watching periods, there were observation phases consisting of discussion about what the patient had seen and heard on the video and how it affected them. Our data included 38 observation phases, and in 35 of these, the patient verbalised an emotion after watching the video. The implicational level was involved in almost all observation phases in which the patient verbalised emotions.

**Results:** Our findings are in line with the hypothesis that added multisensory information via video enhances input to the implicational level and therefore emotional activation in psychotherapy. This is a possible mechanism by which the use of VideoTalk could facilitate the psychotherapy process.

## KEYWORDS

activating emotions, directed content analysis, psychotherapy, sensory perceptions, video work

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## 1 | INTRODUCTION

We have previously developed a video-assisted method for the facilitation of the psychotherapy process (Koffert et al., 2019; Nordström et al., 2021). Our hypothesis was that the sensory information derived from the video would have an activating effect on the arousal of human emotions in psychotherapy. The activation of emotions is relevant in psychotherapy (Peluso & Freund, 2018). Interacting cognitive subsystems (ICS) is a theory that describes the role of sensory information in the activation of emotions (Barnard & Teasdale, 1993). We now further tested our hypothesis using the ICS theory as a starting point with video material derived from schema therapy sessions with the VideoTalk approach. In the following, we provide an introductory framework for the role of emotional activation in psychotherapy, the ICS theory, the video-based psychotherapy method we developed and the specific aims of the study.

### 1.1 | The importance of emotional activation for the effectiveness of psychotherapy

Conscious emotional experience helps us to gain a more accurate understanding of our relationship with our environment. Emotional awareness helps people to understand the meaning of their experiences, and this knowledge helps us to better assess our relationship with the world around us (Lane, 2020). A recent meta-analysis by Peluso and Freund (2018) shows that emotional functioning is associated with the effectiveness of psychotherapy and that there is a strong relationship between the client's and the therapist's emotional expression and psychotherapy outcomes. Greenberg (2004) describes therapists as being like emotion coaches who work to enhance emotion-focussed coping by helping people become aware of, accept and make sense of their emotional experiences. Emotion needs to be focussed on, validated and worked with directly in therapy to promote emotional change (Greenberg, 2016). Thus, a key element to making progress in psychotherapy is clients' emotional experience (Thoma & McKay, 2015).

The theory underlying psychodynamic therapy (PDT) holds that coherent narratives from the patient's life (past and present) make a psychological symptom dispensable and that emotions play an important role in the construction of coherent narratives (Lane, 2020). In the past, traditional cognitive therapy was strongly based on a rationalist theoretical framework, and the need arose to highlight the role of emotions, interaction and developmental activities in the construction of the human mind (Beck, 2019; Beck & Haigh, 2014; Hayes & Hofmann, 2017). Contemporary approaches also recognise the importance of experiential ways of working to bring about change in psychotherapy (Hayes & Hofmann, 2017). Emotion-focussed therapy (EFT) regards emotions as the basic datum of human experience and as providing information, action tendencies and motivation (Lane, 2020). In the emotion-focussed approach, emotion is seen as a fundamental element in the construction of the self and is a key determinant of self-organisation. In addition to

### Implications for Practice and Policy

1. Emotional functioning is associated with the effectiveness of psychotherapy, and it is therefore important to develop psychotherapeutic techniques activating emotions.
2. We have developed a structured, video-assisted approach to psychotherapy with a schema therapy framework, which involves the patient videotaping emotional situations at their home following the detailed instructions from the therapist.
3. Our findings suggest that using videos activates patients' emotions. The multisensory information via videos provides the possibility to approach the topic at hand going beyond the information being verbalised. Using video to help the patient catch, process and understand their own emotions could potentially enhance the therapy process as a whole.
4. Using video material has not been common in psychotherapeutic work, and patient-made videos have not been used as an integral part in psychotherapy. Patient-made videos may offer a new tool for psychotherapists to facilitate patients' emotional processes.

having emotions, people live in a constant process of making sense of their emotions (Greenberg, 2004, 2012). Emotions immediately assess what is going on around and inside us and therefore make it possible to give meaning to the sensory input and bodily signals that fill our minds (Lane, 2020).

Awareness of emotions involves paying attention to and reflecting on the related bodily experiences. Attentiveness and reflection enable the extraction of information from the emotional response that tells the person what the interaction means to them and what they need in that situation (Greenberg, 2015). Identifying and verbalising emotions can be the basis for a process of change. This basis can enable the patient to become aware of the thoughts behind their emotions and thus, if successful, give them the experience of contributing to their well-being. An environment that provides emotional safety and supports the patient's courage to take emotional and expressional risks is the best way to facilitate therapeutic change (Clinton et al., 2007).

### 1.2 | Interacting cognitive subsystems theory and how sensory perceptions relate to emotions

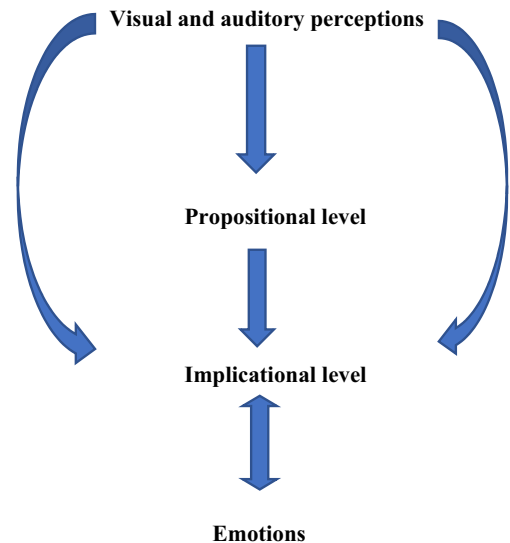
Barnard and Teasdale's (1993) ICS theory seeks to explain the interaction between cognitive processes and emotions. In ICS, information is thought to be processed by a number of interrelated subsystems operating at different coding levels, based on how people mentally interpret and evaluate situations, interactions and

themselves. ICS is a macrotheory that aims to understand the judgements and interpretations people make in their minds and in their interactions. The relationship between cognition and emotion is not easy to define because the relationship is complex and interactive, yet ICS aims to provide a comprehensive approach to better understand emotions through sensory perception. This was the basic rationale for choosing the ICS theory as a starting point in this study.

In the ICS theory, the propositional and implicational systems are the key subsystems for emotions. The activation of the implicational level is a prerequisite for the activation of emotion. Information is transmitted from the visual and auditory senses to the propositional level through intermediate stages. From the propositional level, information is transferred to the implicational level, where information is also transmitted through bodily experience and the senses of smell and taste, as well as directly from the senses of sight and hearing. Thus, sensory perceptions influence the arousal of emotions both through the propositional level and directly at the implicational level. Subsystems process information partly in parallel and partly in sequence depending on other factors affecting the overall system, and the implicational system may receive information from the propositional system or vice versa. The information in the propositional system is easier to express in words and more verifiable in terms of truth ('I didn't pass the exam') than the information in the implicational system ('I am totally stupid and unsuccessful'). Information in the implicational system, on the contrary, is less precisely verbalisable and less consistently verifiable than in the propositional system. In imaginative terms, the information in a non-fiction book is precise, while in poetry, the information is more open to interpretation. In this study, the ICS model is restricted to processing visual, auditory, propositional and implicational information, as illustrated in Figure 1.

According to Barnard and Teasdale (1993), it is also possible for emotions to appear as 'hot' or 'cool'. This means that a person can discuss her/his emotion without arousing the emotion, which is referred to as a 'cool emotion'. This can not only be a challenge when working in therapy but also an opportunity to examine the emotion more objectively. In this case, the information is processed only in the propositional system. However, for emotional change to take place, a 'hot emotion' needs to be aroused so that information flows and is processed in a collaborative way between the propositional and implicational systems. In the ICS approach, emotions are thus the result of the integration of information from multiple cognitive subsystems in an implicational subsystem, rather than being the result of a single cognitive evaluation.

The ICS theory has previously been used in research to provide additional information for understanding psychological phenomena. Research suggests that unified theories of cognition and emotion can contribute to the development of research and treatment (Cowdrey et al., 2017). The ICS theory has also been used in studies of human desire and the unconscious mind, which sought to compare the theory with other theories (May et al., 2004; Romanowska, 2021). However, our understanding is that the ICS theory has not previously been studied in the context of patient work, but more in theoretical frameworks.



**FIGURE 1** Link between perceptions and emotions. Adapted from Barnard and Teasdale's (1993) interacting cognitive subsystems theory.

### 1.3 | The VideoTalk method in practice

We have developed a structured, video-assisted approach to psychotherapy with a schema therapy framework, which involves the patient videotaping emotional situations at their home following the detailed instructions from the therapist. The patient and the therapist watch the video together at the next therapy session, making observations about the video. This structured work consists of 15 therapy sessions, and video themes are as follows: an important incident of the patient's choice, speaking to the parents about unmet needs, helplessness, coping and plans for the future. We have named the method VideoTalk (Koffert et al., 2019).

Internal models (schemas) guide our cognitive processing and are fairly permanent mental structures in the cognitive framework. People organise information according to internal models, and such models are also used to understand new information. People can learn to think of themselves as incapable ('I can't, I'm incapable') if their needs have not been met in childhood, despite their efforts, or have been met with criticism (Young, 1999). A judgemental, unresponsive atmosphere can enable the emergence of a maladaptive internal model, or schema. The maladaptive schema can be activated when a person encounters adversity in their life, making the situation stressful and overwhelming for the individual, which would not necessarily happen to someone who has not developed a similar internal pattern of thinking. In VideoTalk work, it is possible for the patient to get in touch with the emotions that arose during the childhood experiences. The aim of the work was to increase the patient's awareness and understanding of their own thinking and how they see themselves and their abilities. In this way, the goal was to improve their psychological well-being by teaching and reinforcing a more adaptive and self-compassionate internal model.

Patients are not required to have any previous experience or skills related to visual work or photographing, and a normal smartphone is very practical for the VideoTalk method. The length of the video is not determined beforehand. The video recording depicts a situation at home, and the video work aims to intensify the psychotherapy and teach patients to act in problem situations faced at home. The video made at home by the patient reveals to them, and to their therapist, the emotional state they have experienced and described in a safe, authentic environment. Strengthening patients' autonomy and sense of coping by guiding them to be active and responsible implementers of their treatment is central to the video-assisted method. Work carried out by the patients themselves forms the ground for the therapy. In the VideoTalk method, people can see themselves 'from outside', making their observations more concrete: voice, pauses, breathing, tone of voice and speech, body movement, facial expressions and postures that would not be visible without video. Video recordings document patients' difficult emotions at home in their own daily life environment. This makes it possible to share the emotions with the therapist and to allow patients to face their difficult emotional experiences again in a safe environment in the therapy session. Patients' experiences of VideoTalk treatment have been positive (Nordström et al., 2021).

#### 1.4 | The aim of the study

In clinical work, we have found that video work seems to enhance the therapeutic process, and we wanted to investigate whether watching and listening to video content with the psychotherapist activates the patient's emotions. We also wanted to find out whether the ICS theory can be applied to the data in our study and whether the progression of the cooperation between the patient and the therapist is propositional and implicational according to the ICS theory.

## 2 | METHODOLOGY

The patients who participated in the study, four females and one male aged 19–34 years, had first contacted public health care services, and a psychiatrist had then recommended psychotherapy for them. They all had a psychiatric diagnosis made by the psychiatrist (Table 1), and all patients suffered from depression and/or anxiety. The sample was collected for a pilot study. However, despite the relatively small number of patients, the study's multifaceted approach yielded a large amount of video data. Pilot studies are used to evaluate the adequacy of their planned methods and procedures, and a suitable sample size in qualitative research is an important marker of quality of research (Creswell & Creswell, 2018; Vasileiou et al., 2018). The schema therapy-based intervention with VideoTalk was carried out by an experienced psychotherapist (TK) who also

TABLE 1 Patients' age, gender and psychiatric diagnoses.

ID	Age, gender	Diagnosis
1	33 years, female	Bipolar disorder, type II, partly in remission Panic disorder Social phobia
2	34 years, male	Recurrent depressive disorder, partly in remission Social phobia
3	26 years, female	Recurrent depressive disorder, current episode moderate Panic disorder
4	22 years, female	Moderate depressive episode Panic disorder Anorexia nervosa, partly in remission
5	19 years, female	Obsessive-compulsive disorder

has a qualification in schema therapy given by the International Society of Schema Therapy.

Theory-based content analysis provides us with tools to analyse our own video material against the ICS theory. The analysis proceeds on the terms of these data, and these empirical data are linked to known theory. During analysis, the researcher's thinking is guided alternately by theory and data. Often, the units of the analysis are derived inductively from the data through close reading, whereas their interpretation and grouping are guided by the selected theory (Barnard & Teasdale, 1993; Hsieh & Shannon, 2005; Mayring, 2000). Data-driven theoretical analysis can provide practical results, and the method can also increase the accuracy of the analysis of qualitative data (Assarroudi et al., 2018).

The research process began with a careful study of the ICS theory (Barnard & Teasdale, 1993) to understand the core issues and a thorough review of the research data. The data consisted of 10 therapy sessions in which the patient and the therapist discussed videos made by the patient at home as instructed by the therapist. In this study, we focus on the theme of helplessness, which is one of the VideoTalk working topics and suits the purposes of investigating expressions of emotions particularly well. Helplessness, with its accompanying negative emotions, stagnates the patient's functional ability. Thus, the goals of the therapy session were to find negative emotions that block the patient's ability to function and to decrease the shame related to feeling helpless, which are both essential goals in psychotherapy in general.

The therapist informed the patients that the next session will be about *helplessness* and instructed them in the following manner: 'When next time you come across a thing you want to do but cannot accomplish (e.g. related to studies or household work), make a video where you speak freely about what is going through your mind' (Koffert et al., 2019). The therapist also stressed that it was important that during videoing, the patient was able to speak freely without being disturbed. In Finnish language, the definition of *avuton* 'helpless' is insecure, indecisive, incompetent, inept,

TABLE 2 Incidence of basic and social emotions.

	Patient 1, Therapy session 1	Patient 1, Therapy session 2	Patient 2, Therapy session 1	Patient 2, Therapy session 2	Patient 3, Therapy session 1	Patient 3, Therapy session 2	Patient 4, Therapy session 1	Patient 4, Therapy session 2	Patient 5, Therapy session 1	Patient 5, Therapy session 2
1 Sadness				x	x x	x x			x x	x x x
2 Fear						x				x
3 Surprise										x
4 Anger		x								
5 Happiness		x								
6 Shame	x x					x	x	x		
7 Guilt								x		

Note: Items 1–5 show the basic emotions, and Items 6–7 show the social emotions verbalised by the patients after watching the helplessness video with the therapist during the therapy session. Each patient had two therapy sessions to watch the helplessness videos.

TABLE 3 Mood and background emotions verbalised by the patients after watching the helplessness video with the therapist during the therapy session. Each patient had two therapy sessions to watch the helplessness videos.

	Patient 1, Therapy session 1	Patient 1, Therapy session 2	Patient 2, Therapy session 1	Patient 2, Therapy session 2	Patient 3, Therapy session 1	Patient 3, Therapy session 2	Patient 4, Therapy session 1	Patient 4, Therapy session 2	Patient 5, Therapy session 1	Patient 5, Therapy session 2
Anxiety					x x x		x x		x	x x x
Nervousness			x							
Worry					x					x
Confusion						x x				
Discouragement	x				x x x					
Fatigue				x x	x x	x				

needy and pitiful (Finnish online dictionary, 2023). However, there can be cross-cultural differences in defining and understanding helplessness. Günsoy et al. (2020) have studied the role of culture in appraisals, emotions and helplessness in response to threats. According to their results, Turkish participants anticipated stronger anger, shame and helplessness in response to reputation threats than self-respect threats, whereas differences were smaller or non-existent in comparison with participants from the United States. However, in this pilot study, we will not focus on the cultural aspects of helplessness experienced by Finnish patients. There were two videos on helplessness for each patient who participated in the study. The duration of the home videos ranged from 1 min 1 s to 13 min 24 s (Table 4). The helplessness videos were viewed together with the therapist during the therapy time (2 × 45 min).

Next, the observation phases (OPs) were selected from the research data by two of the authors: EN and SL. Altogether, there were 38 such phases. In this study, an OP is defined as a period that begins when the therapist stops the video they are watching with the patient and starts a discussion about the video, and ends when the therapist and the patient stop their discussion and the therapist starts the video again to continue watching. The time range of these OPs was from 1 min 25 s to 30 min 5 s (Table 4). Emotions were classified in the study as (a) basic emotions, (b) social emotions and (c) mood and background emotions (Adolphs, 2002).

- Basic emotions: happiness, sadness, fear, surprise, disgust and anger.
- Social emotions: pride, guilt, shame, maternal love, sexual love, embarrassment, infatuation, admiration, jealousy, contempt, gratitude, despair and longing.
- Mood and background emotions: depression, anxiety, mania, cheerfulness, contentment and worry.

EN transcribed verbatim all the videotaped helplessness therapy sessions. EN and SL both carefully studied each OP and identified all emotions verbalised by the patient as well as the propositional and implicational levels of the patient's speech as described in the ICS theory. Then, they compared their findings and reached a decision considering each OP, after which the classification was negotiated by the whole research group. TK, who was the psychotherapist in the intervention, was not involved in analysing the results. The emergence of the propositional and implicational levels in the verbal discussion illustrates the progression of the patient's and therapist's working in the helplessness-themed therapy session. Importantly, the research team worked closely together, reflecting on and reviewing the progress of the analysis and thoughtfully evaluating each stage of the research as well as the interpretation of the ICS theory.

All participants were informed about the study both orally and in writing before giving their consent to the video recording. The Ethics Committee of the Southwest Finland Hospital District gave ethics

TABLE 4 Duration of videos made in patients' homes, number and duration of observation phases for all patients and the main categories of the study.

	Patient 1	Patient 1	Patient 2	Patient 2	Patient 3	Patient 3	Patient 4	Patient 4	Patient 5	Patient 5
Home video duration	2 min 11 s	7 min 12 s	1 min 18 s	1 min 22 s	6 min 8 s	2 min 36 s	1 min 1 s	1 min 32 s	3 min 36 s	13 min 24 s
Duration of observation phases (min-max)	3 min 15 s-17 min 48 s	3 min 8 s-18 min 54 s	3 min 15 s	8 min 58 s-13 min 3 s	1 min 29 s-10 min 15 s	2 min 27 s-15 min 40 s	2 min 16 s-30 min 5 s	8 min 4 s-16 min 31 s	2 min 05 s-23 min 20 s	1 min 25 s-5 min 42 s
Number of observation phases	3	4	1	2	7	5	2	3	3	8
A. Verbalisation of emotion and verbalisation of the propositional and implicational levels			//	//	////	////	/	////	////	////
B. Verbalisation of emotion and verbalisation of the propositional level	/	/	/	/	/	/	/	/	/	/
C. Verbalisation of emotion and verbalisation of the implicational level	/	//	//	//	///	/	/	///	///	///
D. No verbalisation of emotion	/	//	//	//	///	/	/	///	///	///

approval to the study. The study followed the ethical principles of the Declaration of Helsinki.

### 3 | RESULTS

#### 3.1 | The prevalence of emotions in the study

In our study data, patients verbalised their emotions in a total of 35/38 OPs, in 24 of which they verbalised more than one emotion. In 15 OPs, patients verbalised a basic emotion, and in six OPs, they verbalised a social emotion. Of the basic emotions, patients verbalised sadness 10 times; fear twice; and surprise, anger and happiness once. Of the social emotions, patients verbalised shame five times and guilt once. The incidence of basic and social emotions is illustrated in Table 2.

Among the mood and background emotions (Table 3), patients verbalised worry and confusion twice, discouragement four times and fatigue five times. Nervousness was verbalised once, and anxiety was verbalised nine times.

#### 3.2 | Main categories of research

In this study, we identified the levels that occur in the OPs and formed four main categories from our findings: (a) verbalisation of emotion and verbalisation of the propositional and implicational levels; (b) verbalisation of emotion and verbalisation of the propositional level; (c) verbalisation of emotion and verbalisation of the implicational level; and (d) no verbalisation of emotion. The occurrence of the main categories is shown in Table 4.

Figures 2–5 illustrate the OPs of the research data, showing on the left the ICS theory model and on the right the progression of

the verbalisation between the patient (P) and the therapist (T) as they go through the patient's helplessness video in the therapist's office. The coloured arrows (yellow, blue, green and red) indicate the similarities of the discussion with the theory as follows: perceptions, yellow; propositional level, blue; implicational level, green; and emotions, red. In the examples, black arrows show the progression of the patient's and therapist's work.

Figure 2 shows how, after watching the video (yellow arrow), the patient responds to the therapist's question, feeling incapable and reflecting on an implicational level on their own wishes and neglected needs. They notice and think about what they would like but find it difficult to express themselves in the way they wish. They also conclude that the other person cannot read their thoughts. The patient thus makes the observation that their needs are being ignored (green arrow), working at an implicational level. The therapist then leads the patient to think about what they looked and sounded like in the video. The patient feels that they do not remember, in which case the therapist helps them to move on. The patient works on a propositional level by concretely observing their appearance in the video (blue arrow). They also verbalise their basic emotion of sadness and identify their fatigue (red arrow). In this example, the patient is helped by the video work and, with the support of the therapist, is able to access both their emotions and their needs. In the study, verbalisation of emotion and verbalisation of the propositional and implicational levels were implemented in 18 of 38 OPs.

In Figure 3, after watching the video (yellow arrow), the therapist asks an initial question, after which the patient finds it difficult to identify the person in the video. At first, the person in the video seems to be a complete stranger to them. The patient moves on to the propositional level (blue arrows) after the therapist's question, 'In what way are they a stranger?' In response, the patient observes hearing their own voice and, together with the therapist, they also

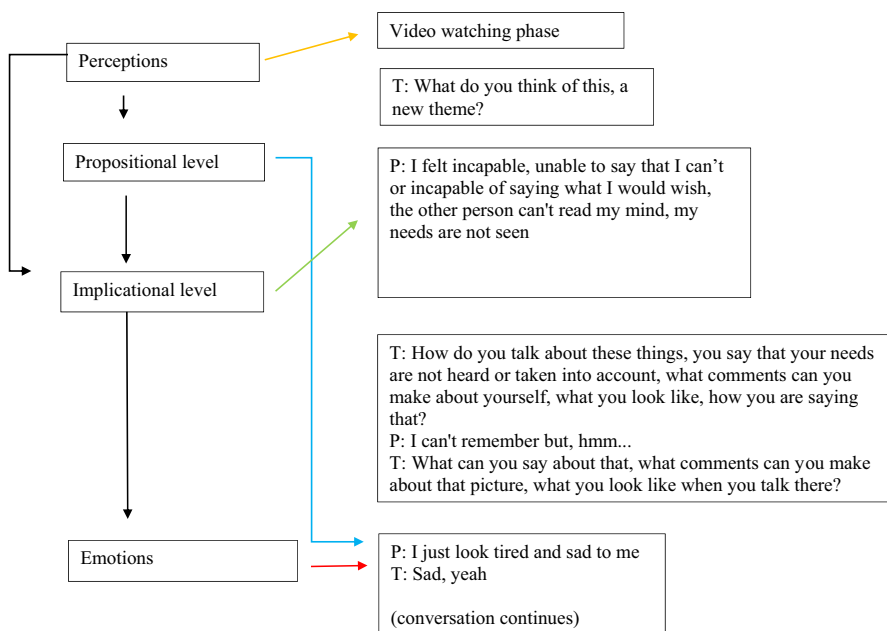
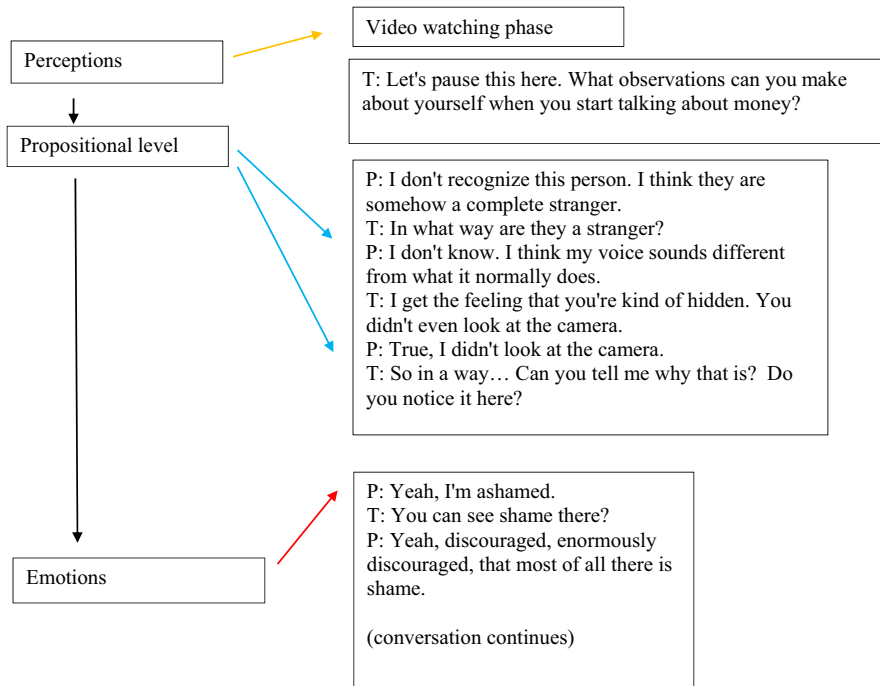
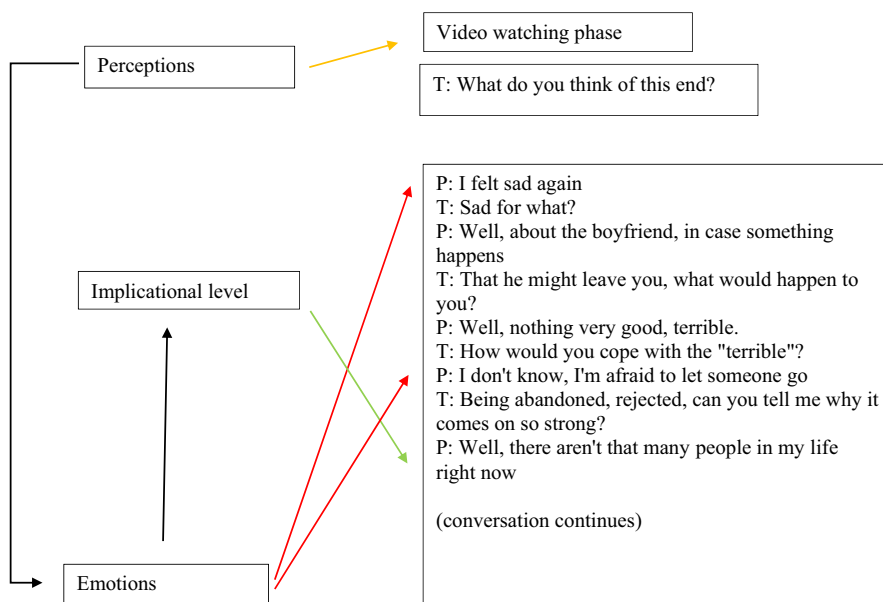


FIGURE 2 (Patient 3). Verbalisation of emotion and of the propositional and implicational levels.





**FIGURE 3** (Patient 1). Verbalisation of emotion and the propositional level.



**FIGURE 4** (Patient 5). Verbalisation of emotion and the implicational level.

observe that the patient does not look at the camera in the video, thus continuing to work on the propositional level. The patient then verbalises the basic emotion of shame (red arrow). Another verbalised emotion was discouragement. In the OP, the video work with the support of the therapist activates the patient, allowing them to make very concrete observations that would not be possible without the video. In the OP, the patient is therefore able to move forward in processing the theme of helplessness. In the OP, there is no verbalised implicational level work. In the study, verbalisation of emotion and verbalisation of the propositional level were implemented in three of 38 OPs.

In **Figure 4**, after watching the video and making observations (yellow arrow), the patient directly verbalises their basic emotion of

sadness (red arrows) after the therapist's initial question. The patient considers the possibility that the boyfriend might leave them. After verbalising the emotion, the patient works on the implicational level (green arrow) after the therapist's leading question. The patient finds the situation terrifying but is able to capture the thoughts behind the emotion and their fear of abandonment, thus articulating their fear of the situation. They also observe that their social network is quite small, saying that there are not many people around them. There is no propositional level in the OP. In the study, verbalisation of emotion and verbalisation of the implicational level were implemented in 14 of 38 OPs.

In **Figure 5**, after watching the video and making observations (yellow arrow), the patient moves directly to the implicational level

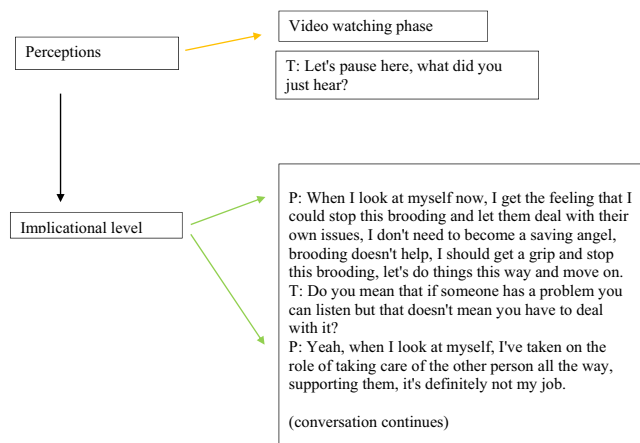


FIGURE 5 (Patient 1). No verbalisation of emotion.

(green arrows) after the therapist's initial question, 'Let's pause here, what did you just hear?' They start to reflect and question their own behaviour and also to think about a new way of acting after seeing themselves in the video. The therapist asks a further question, and the patient responds by recognising the role they have taken on and no longer wish to play. They feel that in the past, they have supported others all the way, even though they now think it is not their role to do so. In the OP, the patient does not verbalise their emotion, but the underlying emotion could be anger. Anger would help the patient to draw boundaries with other people and hope that they would take care of their own affairs in future. No verbalisation of emotion, in our study, occurred in three of 38 OPs.

### 3.3 | Direct verbalisation of the patient's emotions

We also found that in 10 (regardless of the main categories) of all 38 OPs, the patient directly verbalised their emotions after the end of the video and the therapist's initial question. This is illustrated in Sections a-c. The therapist's opening questions included, 'What would you say about this ending?', 'What now, what did you hear, what perceptions?' and 'What would you say about this?' The therapist's question wording is short and open; the opening questions do not lead the patient in the direction of naming the emotion. In the other OPs that ended with verbalisation of the emotion, a longer discussion and work between the patient and the therapist was needed.

- a. 'I'm sad again'
- b. 'I have a guilty conscience'
- c. 'Terrible explanation, positively surprised'

## 4 | DISCUSSION

In this study, we investigated whether receiving multisensory information from a video made at home by the patient activates their emotions and whether Barnard and Teasdale's (1993) ICS theory was

applicable to our study data. Furthermore, we investigated whether the propositional and implicational levels can be found in the progression of the patient-therapist verbalised collaboration according to the ICS theory. Theory-based content analysis supported the objectives of the study.

In our study, patients verbalised one or more emotions in 35/38 OPs, and in 15 of these sessions, the emotion verbalised was a basic emotion. The implicational level was verbalised in 32 of 35 OPs containing a verbalised emotion, meaning that almost every time an emotion was verbalised, the implicational level was also involved. Mood and background emotions are often present in therapy, but their verbalisation can nevertheless make the patient's condition more concrete for themselves even if the primary emotions have priority in therapy. Thus, for example, seeing oneself as tired or discouraged could facilitate the experience of self-compassion or the understanding of one's own needs, which is supported by video work. Moreover, in our study, the patients were able to articulate 10 times their emotions immediately after the therapist's initial question. Thus, it would seem that video work, in line with our findings in clinical work, plays a role in activating the patient's emotions and possibly speeding up the emotional process in therapy.

Our findings support the idea, in line with the ICS approach, that emotions are the result of a combination of information. From our data, we were able to find the propositional and implicational levels in the patient-therapist verbalised collaboration and thus to monitor the progress of the therapy. However, the ICS theory does not require verbalisation of the propositional and implicational levels, which we examined in our study. There was variation between patients in how they accessed and verbalised their emotions, and both levels were not present at the same time in all cases. Previous research has also highlighted potential shortcomings of the ICS theory. Applying a computer metaphor, it can be said that the ICS theory is similar to a complex robot that encodes, copies and releases the results of its work (Romanowska, 2021). Thus, according to Romanowska (2021), in this theory, essentially unconscious processes are vulnerable to the risk of being understood literally, not as theoretical concepts or hypothetical models, but as actually operating mechanisms. In this case, she argues, there is a potential loss of flexibility, openness and adaptability.

There is evidence that multisensory information can lead to a stronger emotional response compared with just one kind of sensory information. Emotional information can be conveyed by various means of communication, such as propositional content, speech intonation, facial expression and gestures, and inputs from one modality can alter perception in another (Ethofer et al., 2006). The ability to perceive emotion appears to be very good, owing to the use of multiple sources of information (facial and vocal cues; Massaro & Egan, 1996). Klasen et al. (2011) used functional magnetic resonance imaging to study the response to a combination of emotional faces and voices. Their results show that facial and vocal emotions do not merge at the perceptual level of audiovisual integration but in later processing stages in the limbic system. Ethofer et al. (2006) found that subjects rated fearful and neutral facial expressions as being

more fearful when accompanied by a fearful voice as compared to the same facial expressions without a concomitant auditory stimulus, whereas no such influence on rating of faces was found for happy voices.

The somatosensory cortex has been known for its central role in processing sensory information from various parts of the body, and it also plays an important role in each stage of emotional processing (Kroph et al., 2019; Šimić et al., 2021). Structural and functional changes in the somatosensory cortex have been found in individuals suffering from mental disorders associated with abnormal emotional regulation, such as major depression, anxiety disorders, schizophrenia and bipolar disorder (Kroph et al., 2019).

Our findings would suggest that increased sensory information can activate emotions. It is difficult to get in touch with emotional experience without working with implicit information processing or information activated from outside the verbal system (Bennett-Levy et al., 2015). Video and other audiovisual methods are increasingly being used due, among other things, to geographical and global challenges. It is possible that more accurate emotion judgements result from multimodal (face, voice and touch) than unimodal (face only) presentations (Garrido-Vasquez et al., 2011; Schirmer & Adolphs, 2017). Although video is increasingly used in health care, we are not aware of any studies on the use in therapy of videos made by patients at home (Backhaus et al., 2012; Crowe et al., 2021; Hickey et al., 2022; Norwood et al., 2017). In therapy, video has been studied in early interaction and social phobia, but emotional activation has not been examined in these studies (Kennedy et al., 2017; Kim et al., 2002; Orr & Moscovitch, 2010; Rodebaugh et al., 2010).

There are other forms of therapy that use sensory information in addition to verbal communication. Music, literature and film, and art as a whole, have been used to evoke emotions in individuals (Johnson-Laird & Oatley, 2018). Through integrative methods, art therapy is thought to have a more comprehensive impact on the person than only verbal modes of expression (Kapitan, 2017). Awareness skills, in turn, strengthen the ability to recognise bodily sensations, one's own movements, thoughts and emotions (Segal et al., 2018). In therapy, the aim of using photographs, films and videogames is to try to achieve a more versatile therapeutic process in which the senses may be sensitised, and emotions and memories and the issues to be addressed could be more strongly present (Berg-Cross et al., 1990; Calisch, 2001; Ceranoglu, 2010; Loewenthal, 2013).

This study has its limitations. There was only one therapist in our study, the therapist who had developed the method, so we cannot draw conclusions as to how the method would work when used by other therapists. It is also possible that the patient's emotions would be aroused by talking about their own helplessness without the video. In this respect, a comparison group without using video would provide more information. In addition, in this study, we only looked at the emotions verbalised by patients. Non-verbalised emotional experiences were ignored and excluded from the study.

In the light of our findings, it seems that video work in psychotherapy activates the patient's emotional functioning. Activating the senses with video assistance provides the possibility to approach the

topic at hand going beyond the information being verbalised. The patient may recognise their own emotional experiences in a way that increases their understanding of themselves and their concrete understanding of the impact of such experiences on their own functioning and well-being. Thus, using video to help the patient catch, process and understand their own emotions could potentially enhance the therapy process as a whole.

## CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflict of interest.

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