

# Expressive Therapies Continuum Assessment



Assessing clients' information processing pattern

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## *Preface*

The following research, conducted in the art therapy department of i-psy, Amsterdam, Netherlands, is written in English to appeal to the intercultural setting of the organization. Furthermore in order to practice and to participate in art therapy research on an international level and to bring together research findings from across the world, a common language for interaction, such as English, is a necessity.

I would like to thank the art therapy department of i-psy, in Amsterdam, for helping me to facilitate this research during my third year internship. Moreover I would like to thank the Stenden lecturers, who guided me and challenged me to venture into the field of research.

## *Summary*

This research, conceptualized within the frame of a bachelor thesis, took place in the organization i-psy, in Amsterdam. The Expressive Therapies Continuum (abbreviated ETC) assessment instrument, including its new rating scale have been tested in pre- and posttest manner, in order to ascertain the sensitivity in detecting a clients' information processing pattern, when forming images, change within it and a possible direction of change towards well-being or ill-being. A single case design has been used to realize this qualitative form of observation research. A single client took part in an art therapy treatment spanning a period of four months which was framed by each three ETC assessment sessions.

The pre- and posttest data from the ETC assessment aided to determine the amount of change that the therapists' observation of the client allowed to ascertain. An official interpretation of the ETC assessment data doesn't exist yet. Therefore an analysis of content from the available information on the ETC assessment in Hinz' book (2009) has been realized to determine to what extent the clients' information processing pattern, change within it and a possible direction of change can be ascertained. As additional measures the Routine Outcome Monitoring were used and a client questionnaire has been designed to compare the results to the data collected through the ETC assessment and the content analysis.

One argument in favor of a high sensitivity of the ETC assessment instrument and it's new rating scale was found. Contrarily three arguments were established that the ETC assessment is only sensitive to some extent. The results point out that there is still need for further research before the ETC assessment instrument can be implemented into the art therapy practice.

## *Summary in Dutch*

Het voorliggende onderzoek werd gerealiseerd binnen de organisatie i-psy, te Amsterdam, volgens de richtlijnen van een bachelor scriptie. Het Expressive Therapies Continuum (ETC afgekort) assessment en de nieuwe rating instrument staan in de focus van dit onderzoek. Binnen deze vorm van kwalitatief observatie onderzoek werd het ETC assessment in een gevalstudie van een cliënt ingezet. De cliënt neemt deel aan een beeldende therapie behandeling van vier maanden die zowel begint als ook eindigt met drie ETC assessment sessies. Het werd onderzocht in hoeverre het ETC assessment instrument sensitief is in het herkennen van het informatieverwerkingspatroon van een cliënt, veranderingen daarbinnen en een mogelijke directie van de verandering naar welzijn of onwel.

De therapeut houdt zijn observaties van de beeldende expressie van de cliënt binnen de drie voor- en nametingsmomenten tijdens het ETC assessment bij. De voor- en nameting worden met elkaar vergeleken om de hoeveelheid verandering in de beeldende expressie van de cliënt vast te stellen. Op dat moment bestaat er nog geen officiële interpretatie van het ETC assessment. Een inhoudsanalyse van de bestaande informatie over het ETC assessment in Hinz' boek (2009) werd verricht om uit te zoeken in hoeverre vastgesteld kan worden op welke manier de cliënt informatie verwerkt of daarbinnen veranderingen plaats hebben gevonden en of de mogelijke veranderingen in de richting van welzijn of zich in de richting van onwel bewegen. Twee andere instrumenten, de Routine Outcome Monitoring en een vragenlijst voor de cliënt, worden ingezet om verdere informatie te verkrijgen en de resultaten met de data van het ETC assessment en de inhoudsanalyse te kunnen vergelijken.

Een argument ten gunste van een hoge sensitiviteit van het ETC assessment instrument en drie argumenten dat het ETC assessment en de nieuwe rating instrument op de een of andere manier sensitief is worden gebleken. De resultaten duiden erop dat verder onderzoek nodig is voor dat het ETC assessment instrument in de beeldende therapie praktijk geïmplementeerd kan worden.

**Keywords:** [Expressive Therapies Continuum Assessment, assessment, assessment rating scale, pre- and posttest assessment, client, art therapy treatment, information processing pattern]

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## Chapter 1 Introduction

### 1.1 Context

I-psy is part of the Parnassia Bavo Group. Another affiliated company of the Parnassia Bavo Groep is PsyQ. Over the last few years as part of economizing their company PsyQ began to exclude art therapy from their care program. Art therapy is considered to be a discipline, which focusses on exploring treatment decision by attuning interventions fitting to the individual client. In this context Smeijsters (2008) evaluated that art therapy is at risk of losing out when it comes to developing evidence-based mental health guidelines.

Over the last few decades the field of neuroscience has joined forces with other disciplines such as psychology. Neuroscientists make use of methods such as non-invasive functional neuroimaging for example researching clients' brain functions while performing psychological tasks. Cognitive neuroscience gathers information on the organization of brain functions, including sensory processes, perceptual, motor or affective operations and the plasticity and recovery of function following damage to the nervous system.

In the field of music therapy professionals have already started researching the relevance of findings in neuroscientific studies on music for music therapy. According to Christensen (2012) music neuroscience has established itself as a research area of importance. Koelsch (2009) reviewed different researches showing that when listening to or producing music extensive networks in the brain, which are involved in emotional, cognitive and sensorimotor processing, are activated. Even though the link between these processes and its possible beneficial influence on the psychological and physiological health of individuals can only be assumed and still needs to be researched further.

Husky (2009) describes that advances in the field of neuroscience have also set the stage towards clarifying explanations for the benefits of art therapy. Furthermore art therapy and neuroscience are named as one of the important areas on the American Art Therapy Association (abbreviated AATA) research agenda (Kaiser & Deaver, 2013).

The Expressive Therapies Continuum theory, hereafter referred to as ETC, developed by Kagin and Lusebrink already lays a link between processes involved in visual expression and findings in the field of neuroscience. The ETC has been first presented at the ninth Annual Conference of the American Art Therapy Association conference in the United States of America in 1978. In the Netherlands the awareness of the ETC is growing as the book by Hinz (2009), which creates an overview of existing information concerning the ETC, is now used in the training to become an art therapist at the Stenden University of Applied Science, as well as a number of others. Furthermore Hinz travelled to the Netherlands in 2015 in order to give workshops to students and tutors in the field of art therapy. In the HAN University of Applied Science in Arnhem and Nijmegen, where Hinz also collaborates in research with the art therapy tutor de Moor, an ETC research work group has been brought to life to further research different aspects of the ETC.

#### 1.1.1 Theoretical basis of the Expressive Therapies Continuum

The theoretical structure of the ETC is based on information gathered from different fields such as art therapy, art education, psychology and neuroscience. The ETC theory is based on the assumption that different art mediums, used during expressive activities, can evoke different levels of visual information processing in the brain.

The ETC theory organizes the interaction with art media in four levels (kinesthetic/sensory, perceptual/affective, cognitive/symbolic, and creative level), which are presented in a developmental hierarchy as the information processing develops from simple to complex. Each of the first three levels consists of two component functions, whilst one of these components is loosely aligned with activity of the left brain hemisphere (kinesthetic/perceptual/ cognitive component function), the second one is

contrarily aligned with the right brain hemisphere activity (sensual/ affective/ symbolic component function). Lusebrink (2010) links the first three levels of the ETC to the three hierarchical levels of sensory information processing in the brain, described as the occipital, temporal and parietal lobes. Fuster (in Lusebrink, 2010, p.170) established that "visual expressions involve complex sensory information from the parietal lobes that is forwarded, along with emotional input from the limbic area, to the prefrontal cortex with its regulatory functions". The creative level forms the fourth level in this sequence. In this level integration of function levels and self-actualization is emphasized "through inventive and resourceful interaction with the environment" (Hinz, 2009, p.171). The creative experience is thought to be able to take place on any level of the ETC, at any component function or by integrating different components, in a single experience or through a sequence of experiences.

Also every component of the ETC has a healing and an emergent function. The relationship between the components on the first three levels is bipolar. As information processing with one component level increases, it first increases functioning on the opposite component, then decreases it, and eventually can block opposite components. The clients' approach to art activities is thought to be parallel to the way the client behaves or deals in daily life with his or her thoughts and emotions.

The overall treatment goals are supporting the clients' therapeutic process and wellbeing by opening up blocked functions, emphasizing underused and reducing overused component functions. The aims are based on the assumption that well-functioning individuals are able to process information on all levels and with all components of the ETC in a balanced fashion.

In the context of supporting the clients' wellbeing, experiencing the creative component function plays a particular role in the therapeutic process. Next to the synthesis of function levels by being able to use information from all component sources in a balanced fashion, the experience of the creative component function is thought to emphasize self-actualization. The term self-actualization refers to Maslow's description of the hierarchy of needs. In this hierarchy self-actualization is the highest level of need human's move toward and in which one tries to realize ones full potential through self-improvement. Manheim (in Hinz, 2009) researched in 1998 the role of creativity in personal growth and the relationship to the artistic process. The increased sense of openness, self-acceptance and the emotional and spiritual enhancement of the participant's lives through the artistic process was shown. Hinz (2009, p.171) describes the healing function of the creative component by saying that "art therapy can support self-actualization by providing experiences that model, teach and support spontaneity and openness in expression as well as courageousness in confrontation with the unknown."

## 1.2 Analysis of the problem/ situation and theoretical exploration

Boyko (2005, Abstract, § 1) states that "in spite of the intuitive sense that creative processes must have an impact on the brain, little research exists documenting brain-based changes as a result of the art therapeutic process". The ETC theory lays a link between expressive activities and different levels of information processing in the brain. It is theorized that due to the plasticity of the brain changes of ETC levels, ETC components and art media foster changes in the information processing pattern of a client. Pascual-Leone (cited in Lusebrink, 2010, p. 173) claimed that "the brain undergoes continuous changes in response to modifications in its input afferents and output targets" and that "changes in activity across a distributed neural network may be able to establish new patterns of brain activation and sustain functions". According to Hinz in the context of proving the effectiveness of art therapy, brain imaging technology, which is able to administer changes in neural pathways, used to process information, when forming images, would be needed. But new technology such as neuro-imaging could so far not be put to use to research cognitive processes while using art materials, as the technology still needs to be refined in a way which allows the client to move while using the art materials (L. D. Hinz, personal communication, 30 January, 2015).



Looking at present possibilities, within the frame of a bachelor thesis, the question is which means other than neuroimaging technology can be used to determine possible brain-based changes or more precisely changes in the clients' information processing pattern, when forming images. Boyko made a step in the named direction by conducting a research in 2005 using neuropsychological measurement in a single art therapy case study to research brain-based changes as a result of the art therapeutic process. The study described significant change in two areas of measurement but also voiced issues of reliability of the Silver Drawing test as an instrument for assessment, when it comes to test-retest designs. Betts (2005, Abstract, § 3) states that her research "indicates that the field of art therapy has not yet produced sufficient research in the area of assessments and rating instruments".

Kapitan writes in 2010 that art-based assessment can be divided into different categories such as standardized assessments, formal, informal and ongoing procedures of assessing information. Wadeson (cited in Kapitan, 2010, p.39) writes that in a standardized assessment "an instrument is used to produce a specific result, often a diagnosis. In this sense formal assessments offer a predictive potential". In order to standardize an assessment first its reliability and validity needs to be tested (Kapitan, 2010).

Hinz (2009) describes that the ETC can be used as a framework for assessment, aiding to determine how a client processes information, when forming images. Via the ETC assessment information on the following elements of the clients' expressive process are gathered: preferred art medium, interaction with the art medium, stylistic or expressive elements of the final art product and quality of verbal comments. The gathered information can then be used to aid the therapist in determining clients' information processing pattern consisting of the preferred method(s) of information processing, overused, underused or blocked ETC component functions. This information can provide suggestions on where to begin a course of therapy, the direction of therapeutic work and the best choice of therapeutic art media. This description of the ETC assessment coincides with formal procedures to gather prescriptive, descriptive or evaluative information to create treatment plans among others (Kapitan, 2010).

Wadeson (cited in Kapitan, 2010, p.39) describes that assessments can also be seen as "a comparison of past behavior and present observations". In order to compare the information processing pattern of a client before and after an art therapy treatment the observations during the assessment would need to be rated. Verhoeven (2011) emphasizes that in order to avoid subjectivity when creating an observation instrument a systematical measuring procedure to score the observation is needed. Just recently Hinz developed a new rating scale that allows the therapist to score the observations, made during the assessment of a client. According to Hinz this rating scale, even though never put to use in this context, may allow to compare pre- and posttest data (L. D. Hinz, personal communication, 30 januari, 2015). A formal interpretation of the rating scale doesn't exist yet. Therefore the gained data can only be linked to the ETC theory attempting to determine and compare client's information processing pattern.

In order to gather further information the focus of this research is on the use, analysis and predictability of the ETC assessment and its new rating scale. The study is going to be facilitated during a third year internship at i-psy Amsterdam, as part of the creative therapy bachelor study. While conceptualizing this research the comparison of two clients was planned in order to create more reliable data. In the very beginning of this research it became apparent, due to the fact that the assessment tool has never been used before in this manner, that the time needed for preparation, analysis of the data and realization of the therapy sessions, only allowed to conduct this research with a single client.

### 1.3 Aims

This thesis is going to provide a first documentation of using the new rating scale of the ETC assessment, to compare pre- and posttest data. This research is aiming to examine the sensitivity or predictive potential of the ETC assessment in determining a client's information processing pattern, when comparing two different points during a treatment.

The pre- and posttest is going to frame a four month art therapy treatment that is based on the ETC approach. As there isn't a guide on how to analyze the new rating scale yet, this research will provide a first attempt at linking the pre- and posttest data to the ETC theory. The ETC assessment has so far been used to support client's wellbeing by gathering information in order to determine a suitable starting point and direction for therapy among others. In the ETC theory it is hypothesized that well-functioning individuals use the different ETC components in a balanced fashion. Therefore this study is going to explore the predictive potential of the ETC assessment in determining change in a client's information processing pattern as well as the sensitivity of the instrument indicating a direction of change towards well-being or ill-being. In the context of proving the effectiveness of art therapy having an assessment instrument that could indicate change and the direction of change would be an asset even though a causal link between the art therapy treatment and the changes would nevertheless still need to be researched. The results of this research may give indications on the possibilities and limitations in the use of the ETC assessment tool, the formality of the procedure, aspects that need to be researched further and the relevancy of implementing the assessment in the art therapy practice.

### 1.4 Main and guiding questions

The main question this thesis attempts to answer is:

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*To what extent is the ETC assessment, using the new rating scale, sensitive in detecting a client's information processing pattern, when forming images, as well as change and a direction of change within it?*

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In order to answer the main question, the following guiding questions must first be answered:

1. Which amount of change can be determined, when comparing the ETC pre- and posttest assessment data of the client?
2. To what extent can the rated ETC pre- and posttest results be linked to indications of the clients' information processing pattern, possible changes and a direction of change within it, when analyzing the content of the paragraph "Information Gathered from Assessment Tasks" in chapter 10 (Hinz, 2009)?
3. Which direction of possible change does the pre- and posttest Routine Outcome Monitoring by the psychologist show, compared to what was determined through the ETC assessment?
4. Which indications of the clients' preference in information processing and possible change within it can be made based on the client questionnaire, compared to what was determined through the ETC assessment?

### 1.5 Databases

The databases that were consulted for this research are:

- Google search
- Google scholar
- Stenden library database
- Stenden library online database

The search terms that were used are:

- Neuroscience
- Music therapy and neuroscience
- Art therapy and neuroscience
- Plasticity of the brain

- Expressive Therapies Continuum
- Expressive Therapies Continuum Assessment
- Art therapy assessment
- American Association of Art therapy
- Routine Outcome Monitoring

Furthermore a workshop and consultation with Hinz on the 30<sup>th</sup> of January 2015 as well as Hinz' book (2009) are the main sources for the theoretical basis of the ETC theory presented in this study.

## 1.6 Preview of aspects of the report ('bookmark')

In the following two chapters firstly the method used to conduct this research and secondly the research instruments, which were used, are described. The relevant definitions and the operationalization of terms used in the main and guiding questions are given. Furthermore the way, in which the data was gathered and analyzed in order to answer the main and the guiding questions, is described.

The third chapter sheds light on the collected research data by answering each of the four guiding questions in written, graphical or tabular form. In the fourth and final chapter conclusions are drawn from the dataset in order to answer the main question. Furthermore the research approach is discussed and possible recommendations are made. Additional data can be found in the appendix of this research.

## Chapter 2 Method

### 2.1 Typecasting of research

This research can be typecasted as a naturalistic observational research (Sheskin, 2007). The design that has been used to facilitate this research is a single case study with a pre and posttest design. The single case design has been used by many art therapist researchers in order to introduce or further explore a new concept (Diamond, cited in Husky, 2009). The concept being introduced is the new ETC assessment instrument by Hinz, which is being tested in regard to its sensitivity in detecting change in the visual information processing pattern of a client before and after a four month art therapy treatment period. The concept in question builds on the theory from Lusebrink (1978), which hypothesizes that different art medium, used during art therapy, can evoke different levels of visual information processing in the brain.

### 2.2 Research unit/population

The research unit of this case study is the new ETC assessment instrument by Hinz, put to use during the assessment of a single client. The variable of interest that is described in this case study is the sensitivity of the ETC assessment instrument by Hinz in detecting changes in the information processing pattern of a client. The assessment in question frames the clients four month art therapy treatment, which is based on the ETC approach. This research can only make statements about this individual case and doesn't aim to lay a causal link between the treatment received and possible changes detected during the ETC assessment.

#### 2.2.1 ETC assessment and its new rating scale

Art-based assessment can be divided into the following categories "research-based standardized assessments to collect and describe aspects of different populations, formal and informal evaluation procedures to develop treatment plans and informal, ongoing assessment incorporated into the exchange of information between client and therapist" (Kapitan, 2010). An assessment using the ETC theory as a framework has been presented by Hinz in 2009, based on earlier exploration of the subject by Lusebrink. The new rating scale presented in this study has been developed by Hinz in 2014 but hasn't been published yet. Hinz agreed that the instrument could be used for this study (L. D.

Hinz, personal communication, 30 januari, 2015). Whereas the assessment elements are the same as in Hinz' book (2009) the new rating scale introduces a systematical measuring procedure. The therapists' observation of the client's visual expression can be categorized in 26 tested elements each with several answering possibilities in numbers or words to rate the observations.

### 2.2.2 Information processing pattern

The term information processing pattern used in this study refers to the strategy or tendency that can be determined by the therapist over the course of the three assessment session, of which ETC component functions are preferred, overused, underused or blocked, when forming images during art therapy (Hinz, 2009). Even though it is hypothesized that the strategies a client uses to form images also provide information about how clients generally approach other life situations. The pattern of information processing, attempted to determine in this study, only refers to strategies within the realm of image formation or visual expression. Furthermore Lusebrink (2010) links the first three levels of the ETC to the three hierarchical levels of sensory information processing in the brain and the component functions loosely correspond with activity on the right or left hemisphere of the brain. In this context the term information processing pattern loosely refers to a repeated route of "activity across different neural networks in the brain" (Pascual-Leone cited in Lusebrink, 2010, p. 173).

### 2.2.3 Sensitive to what extent

The wording of the question "to what extent" is used when arguments in favor and in opposition to a certain point of interest are explored. The point of interest that is explored is the sensitivity of the ETC assessment instrument. In four guiding questions the sensitivity or predictive potential of the ETC assessment and its new rating scale is going to be explored. It is aimed to find arguments either in favor or in opposition of a high sensitivity of the ETC assessment in determining the information processing pattern of a client, when forming images, change within it and a possible direction of change.

In the first guiding question, based on the first use of the ETC assessment in a pre-and posttest manner, the amount of change is going to be determined. If the amount of change can be determined in a numerical measure it will be seen as an argument in favor of a high sensitivity of the ETC assessment otherwise the data found opposes a high sensitivity of the ETC assessment.

In the second guiding question through the means of a content analysis it is researched to what extent the information processing pattern, possible change and a direction of change can be determined? If the elements can be fully determined it will be seen as an argument in favor of a high sensitivity of ETC assessment. If it is only possible to a certain extent both arguments in favor and in opposition will be named. If the data doesn't lead to indications an opposing argument to a high sensitivity of the ETC assessment is found.

In the third and fourth guiding question on the one hand the data sets of the Routine Outcome Monitoring and the ETC assessment and on the other hand the data sets of the client questionnaire and the ETC assessment are compared. For both questions it will be concluded that if both data sets show the same indication on the subject in question an argument in favor of a high sensitivity of the ETC assessment is found. If a comparison is only possible to a certain extent arguments in favor and in opposition will be named. If the data sets reveal different indications or a comparison is not possible an opposing argument to a high sensitivity of the ETC assessment is found.

### 2.2.4 Client

The client was chosen combining purposive and convenient sampling methods (Verhoeven, 2011). In order to be eligible, the prospective client needs to be an adult between the ages of 20 to 60, of average IQ and part of the i-psy Amsterdam art therapy department client pool. Out of ethical reasons it was decided that the client needs to be newly referred from the i-psy treatment coordinator so this new art therapy treatment

program could be started rather than interrupting an already established course of treatment. The client needs to be referred in December 2014 as the research is starting in January 2015. The client newly referred in December 2014 and fitting to the specifications above was recruited for this research. The client underwent an intake phase with the coordinating psychologist. The following information from the psychological intake phase is revealed from the electronic patient dossier of the client. The client is a woman, 53 years of age, and has been diagnosed with Major Depressive Disorder (abbreviated MDD). The episodes of the MDD are yearly recurrent and last for several months. The severity of functional impairment of the MDD was judged to be moderate (296.32, 5<sup>th</sup> ed., DSM-5). The symptoms of the client are:

"Rumination, dissatisfaction, feelings of emptiness, troubled sleep, depressed mood, low appetite, changes between high and low energy, passive reactive pattern, high negativism, feelings of worthlessness where the future is concerned, difficulties in finding reassuring thoughts, perfectionistic, no suicidal thoughts."

The diagnosis of the client is described but not specifically taken into account during the recruitment of the client, the assessment tests, treatment decisions, analysis of the data or conclusion of the research. The reason for this decision is that the ETC is seen as a foundational theory and a framework for art therapy treatment aiming to gather information on the visual information processing pattern of any client. According to Hinz (2009) by customizing treatment goals based on the information gathered using the ETC theory an effective entry point for intervention within the art medium can be found focusing on clients' strengths and weaknesses, when it comes to information processing, rather than using the diagnosis as a point of entry. A possible link between the information processing pattern of a client, psychopathological symptoms observed during the art process and links to the clients' diagnosis are described by the 2013 AATA art therapy and neuroscience focus group as another field still in need of research (Kaiser& Deaver).

### 2.2.5 Forming images

The information processing pattern of a client is assessed based on the therapist's observation of the client forming images in the context of visual expression in an art therapy setting. The ETC pre-and posttest assessments frame a four months art therapy treatment, which was based on the ETC framework. The client attended weekly one hour individual art therapy sessions. The ETC theory is seen as a framework for art therapy treatment. The approach encompasses that the entry point for therapy is the most comfortable component process, determined during the assessment. Treatment proceeds by focusing on the clients' strengths as well as either increasing emphasis on the underused component function of each bipolar level of the ETC or focusing on a function that can help the client to emerge functioning on a higher level. In order to change direction or incorporate other or new component functions the therapist can suggest a new medium, change to another type of question or assignment with a different emphasis. It is indicated that materials with more fluid properties, as well as tasks with a low level of structure and complexity are more likely to evoke sensual, affective or symbolic image formation and materials with more resistive properties as well as tasks with a high level of structure and complexity are more likely to evoke kinesthetic, perceptual and cognitive functioning. The therapist treatment approach to each session has been, based on chapter 11 "Individual interventions" (Hinz, 2009). The approach has been recorded by scoring in one of seven categories such as "Task(s) and material(s) are chosen by the client" or "Therapist suggests implementation or use of a new material to provoke a new way of information processing". The observations of each session are recorded in four categories, which are also used in the assessment (see § 2.3.1). An example of the record sheet is given in appendix G. The records of the therapist choices within the 16 art therapy sessions as well as the observations are presented on request.

Next to the art therapy treatment the client also takes part in a weekly psychological treatment following a schema-focused cognitive therapy approach. The

therapy approach and the length of treatment, used to facilitate this research, have been recorded but aren't taken into further consideration, as this study doesn't attempt to lay a causal link between the results of this research and the treatment in question.

## 2.3 Research instruments

In order to explore the sensitivity of the ETC assessment, the ETC assessments itself as well as the Routine Outcome Monitoring assessment (abbreviated ROM) are put to use in a pre- and posttest manner. When realizing the ETC assessment obtrusive, mostly non-verbal form of behavioral observations has been chosen (Dooley, 2001). Furthermore an unobtrusive type of measure, a content analysis on the existing information of the ETC assessment in Hinz' book (2009), as well as a client questionnaire, are carried out. In the following the research instruments used to answer each guiding question are described.

### 2.3.1 ETC assessment tool

In order to answer the first guiding question the ETC assessment tool, which is also the variable of interest, is put to use in the three pre- and three posttest ETC assessment sessions of the recruited client. Three assessment sessions are chosen as three is the minimum amount to be able to look for a trend (Kaplan, 2003). The four categories to score the therapist's observations are:

1. Preferred medium
2. Interaction with medium
3. Stylistic or expressive elements of the final art product
4. Verbal communication

In the ETC assessment 26 elements, which can be found in appendix A, are rated. Verhoeven (2011) describes this form of observation method within the field of qualitative research as systematical, structured, unconcealed, non-participating, direct observation of selected persons in a certain setting. The 26 tested elements have different rating methods. The tested elements one, two and three can be scored using a Likert scale ranging from one to five. The range is associated with the two poles of the ETC continuum corresponding with the terms familiar to unfamiliar materials, fluid to resistive materials and fluid to resistive interaction with the materials. The tested elements, 4 to 21 as well as 25 and 26, offer three to five different answering possibilities that can be scored. As a guide on how to use the ETC assessment instrument doesn't exist yet, it has been decided for the purpose of this study that it is possible to either score one of the different answering possibilities or to score between two scores. The elements 22 to 24 are scored in a different manner. The elements 22 and 23 focus on the presence or absence of different ETC-components when engaging in the art process and verbal communication during or after the art process. Based on the hypothesis that a well-functioning individual uses input from several ETC-components (Hinz, 2009), it has been decided for the purpose of this study that it is possible to score more than once within these two elements. The element 23 lays an emphasis on the content and symbolism of the client asking for a written description of what the therapist saw and the client shared in the questions at the end of the assessment.

The data of the three pre- and the three posttest assessments are going to be compared in this study to highlight possible changes and determine the amount of change.

### 2.3.2 Content analysis

In order to answer the second guiding question it will be determined if and to what extent indications of the clients' information processing strategies, possible change and a direction of change towards well-being or ill-being can be made. Verhoeven (2011) describes that the analysis of content is a form of qualitative research that can be realized on a macro level as well as on a micro level. As there isn't a guide on how to analyze the assessment scores yet the only point of reference at this stage is the information presented with in chapter 10 "Assessment and clinical applications" (Hinz,



2009). The micro level of interest that is going to be analyzed is the paragraph "Information Gathered from Assessment Tasks" in chapter 10 (Hinz, 2009). In the paragraph a summary of the four assessment categories and most of the 26 tested elements is given. Also an introduction on how the gathered information can be interpreted in the context of information processing strategies is described.

Verhoeven (2011) writes that in order to analyze documents a choice of variables to systematically gather information is necessary. The content is reviewed focusing on the following six points of focus:

1. The tested element is mentioned in chapter 10 and all the scores from the assessment are described and related to possible indications of client's information processing strategies.
2. The tested element is mentioned in chapter 10 and only one or a few scores from the assessment are described and related to possible indications of client's information processing strategies.
3. The tested element is mentioned in chapter 10 but the scores from the assessment are not mentioned or differ and the relation to clients' information processing strategies is only made partly or not, as the focus lays on other facets.
4. The tested element isn't mentioned in chapter 10.
5. The tested element is mentioned in chapter 10 but for this element the description of the therapist rather than a score is asked. The possible analysis of the therapist's description is not further mentioned or related to client's information processing strategies.
6. The tested element is mentioned in chapter 10 and indications on how the scores can be interpreted in the terms of well-being or ill-being are given.

The results this step within the analysis of content will be displayed in appendix C.

### 2.3.3 Routine Outcome Monitoring

The Routine Outcome Monitoring (abbreviated ROM), carried out by the psychologist, is used to answer the third guiding question and to add to the pre and posttest data. ROM is a scientifically valid quantitative measuring assessment that is standard use in a lot of the mental health organization in the Netherlands (Net Q For Monitoring Health, 2015). Maarten et al. (2013) describes that for the assessment generic as well as disorder-specific instruments are used to have a regular point of evaluation. Furthermore it is aimed for both the client and the therapist to get more insight into the complaints and functioning of the client. Based on the results the direction of treatment can either be justified as beneficial or if necessary adapted towards improvement. In order to be able to interpret the assessed data "reliable ratings from reference populations are essential" (Maarten et al., 2013). In the organization i-psy Amsterdam the ROM measurement is taken during the intake phase and is then repeated every six months in order to evaluate the treatment. In i-psy the 4 K's questionnaire is used when carrying out the ROM measurement. The questionnaire gives insight into the following four categories:

1. complaints
2. quality of life
3. costs
4. customer satisfaction

The total scores of the first two categories are relevant to this research. In the 4 K's analysis report of the ROM-measurement the categories "complaints" and "quality of life" are already compared with relevant norm groups. Through this comparison not only possible change can be detected but also the direction of change towards well-being or aggravation can be determined. The results are going to aid in a comparison of the determined direction of change in the ROM-measurement as well as in the ETC assessment, ascertained through the analysis of the data in guiding question 2.

### 2.3.4 Client questionnaire

Focusing on the fourth guiding question a client questionnaire has been designed in order to get input from the clients' experience and to test the preference in information

processing at the end of the treatment and possible change within it comparing the beginning to the end of the treatment. The results are going to aid in a comparison of the determined preference of the different component functions and possible change within it determined in the client questionnaire as well as in the ETC assessment, ascertained through the analysis of the data in guiding question 2.

A standardized questionnaire doesn't exist yet. Therefore the only point of reference to create this questionnaire is the ETC theory presented in Hinz' book (2009) and the information presented with during the workshop by Hinz on the 30<sup>th</sup> of January 2015. The questionnaire, which can be found in appendix F, consists of 7 questions. Open as well as closed questions with a different structure of answering possibilities have been chosen. The questions with dichotomous or multiple answering possibilities are followed up with an open question asking the client to elaborate on the chosen answer.

In the first question the preferred media properties of the client towards the end of the treatment are explored. Hinz (2009) categorizes media properties in a continuum ranging from materials with more fluid to more resistive properties. This question coincides with the second and third element of the ETC assessment "Medium properties" and "Interaction with medium".

The second question and third question explore the preferred and least preferable ways of engaging in art expression at the end of the treatment. In these questions the client can choose one or more of the answering possibilities, which are each associated with a general task of each of the ETC components. The general task of each ETC component has been worded following the information presented with during Hinz' workshop in 2015. The client can choose more than one answering possibility as a well-functioning individual uses input from different ETC components (Hinz, 2009).

In the context of the pre- and posttest data of the ETC assessment the fourth question further explores if the client experienced any changes in her preference of the general tasks associated with the different ETC components, she would or would rather not engage in. A dichotomous answering choice as well as an open question asking for a further elaboration is given.

In the fifth question the amount of the clients' experience of the different tasks associated with each ETC component function is explored in more detail. A Likert scale, with an uneven amount of answering categories, has been designed linking three to five associated experiences or tasks of each ETC component function to the amount of time the client experienced them over the course of the art therapy treatment, ranging from never to very often. The different experiences named in this question have a high homogeneity among each other, which indicated the use of a Likert scale (Verhoeven, 2011).

The sixth and seventh question explore the clients' favorite and least favorite art media or process during the art therapy treatment in an open question. The questions are worded based on the workshop of Hinz in 2015, in which these questions are named as a way of further gathering information after completion of the assessment on the clients' preferences.

## 2.4 Procedure of gathering information

The gathering of the data took place in the art therapy department of i-psy Amsterdam. At the end of 2014 a suitable client agreed to take part in this research starting in January 2015. The following structure in gathering the research data can be shown:

- December 2014: Pretest ROM measurement
- January 2015: Three pretest assessment sessions
- February till June 2015: 16 individual art therapy sessions
- June 2015: Three posttest assessment sessions
- June 2015: Client Questionnaire
- July 2015: Posttest ROM measurement
- September 2015: Content analysis and data analysis
- January 2016



### 2.4.1 Information gathering guiding question 1

The treatment phase starts and ends with three assessment sessions. Each individual assessment session is conducted in the same way and took place in the same setting and conditions. Each session took one hour. In the assessment sessions, the client was presented with a continuum of art materials ranging from materials with more resistive properties to materials with more fluid properties such as stone, linoleum, collage materials, pencils, oil pastels, clay, pastels, acrylic paint, aquarelles, and colored ink. Also at the clients' disposal were different sizes and qualities of paper and appropriate tools to work with the two- or three-dimensional materials. In comparison to other art therapy assessments the ETC assessment is conducted in a non-directive and non-structured way in order to gather information on the clients' preferences in expression and functioning (Hinz, 2009). The client is free to choose tasks, topics and materials from the continuum presented with. A short instruction can be given about the materials, even though the use of unfamiliar materials is not encouraged as they are more likely to evoke frustration. During the assessment communication is not encouraged by the therapist, who sits aside to observe the approach, art process and product of the client. At the end of the assessment session the therapist interacts with the client to further gather information on the clients' experience. Questions that can be asked at this point are:

- "What was your favorite and least favorite process?,"
- "What was your favorite images today?,"
- "Would you assign a title to any of these images? If so, what would the title be?,"
- "What do you want to tell me about your image?" (Hinz, 2009).

Hinz described the role of these questions as a form of guidance and a point of focus for the therapist, when interacting with the client at the end of each assessment session (L. D. Hinz, personal communication, 30 January, 2015). Therefore the clients' answers won't be recorded separately but will be used as another source of input for the therapist, when filling in the ETC assessment scoring sheet, directly after each assessment session.

### 2.4.2 Information gathering guiding question 2

In order to answer the second guiding question an analysis of content, as a form of desk research, is going to take place starting in September 2015 after the ETC assessment data has been collected. The results are reviewed and analyzed in the light of the content of the paragraph "Information Gathered from Assessment Tasks" in chapter 10 (Hinz, 2009).

### 2.4.3 Information gathering guiding question 3

During the intake-phase of the client at the end of 2014 the psychologist, assigned to carry out the intake, instructed the client to fill in the 4 K's-questionnaire of the ROM measurement. Six month later, in July 2015, followed the second ROM measurement carried out by the psychologist, assigned to the treatment of the client. The 4 K's analysis reports of the first and second ROM measurement that frame the art therapy treatment phase were recorded in the Electronic Patient Dossier (abbreviated EPD) of the client.

### 2.4.4 Information gathering guiding question 4

After the three posttest assessment sessions a final gathering in the same setting took place in June 2015. The client filled in the questionnaire in the presence of the therapist. The questionnaire is carried out at the end of the treatment as it is based on the client's experiences of the art therapy treatment. The use of language has been adapted, where necessary, to allow the client to answer the questions without in-depth knowledge of the ETC terminology.

## 2.5 Analysis plan/ analysis techniques

In order to answer the main question the results of the four guiding questions are first going to be analyzed.

### 2.5.1 Analysis guiding question 1

Starting with the ETC assessment used to answer the first guiding question. As there isn't a guide on how to analyze and interpret the data yet in this first step only the amount of possible change that can be detected will be measured. Firstly it needs to be determined if there is change comparing the pre- and posttest results of each of the 26 tested elements of the ETC assessment. Therefore the mean of the results from each tested element are taken. The different means of each element from the three pretests are then compared with the mean results of the three posttest assessments. The data will be displayed in a table in appendix B, highlighting possible change with a different sign for the mean score for each the pre- and posttest assessment.

From this table the amount of change will be determined. The categories to score the amount of change comparing the pre- and posttest assessment are:

- 0 The score stayed the same.
- 0.5: The score changed to between the same score and the score beside it on its right or left.
- 1,0: The score changed to the score beside it on its right or left.
- 1,5: The score changed one and a half scores further to the right or left.
- 2,0: The score changed two scores further to the right or left.
- 2,5: The score change two and a half scores further to the right or left.
- 3,0: The score changed three scores further to the right or left.
- 3,5: The score changed three and a half scores further to the right or left.
- 4,0: The score changed four scores further to the right or left.

The chosen categories are based on the decision that it is possible to score between two scores, which is indicated by a difference of 0.5 and that there is a maximum of 5 answering possibilities, which allows a maximum change of 4 scores from the outer right or the outer left score. In the direction of change towards the right or left won't be marked. The tested elements 22 to 24 are scored in a different manner. The possible input from the different ETC components tested in the elements 22 and 24 is going to be described. For the element 23, which asks of a written description, firstly the three written descriptions in each of the three pre- and posttest sessions are each compared for common content or symbols. Afterwards the overall content and symbols of the pre- and posttests are described. The tested elements 22 to 24 are going to be scored in the following categories:

- Change without numerical measure
- No change without numerical measure

The total scores will be also displayed in a pie chart in chapter 3.

### 2.5.2 Analysis guiding question 2

To what extent is it possible to make indications of clients' information processing strategies, possible change and a direction of change within it will be determined by analyzing a paragraph in chapter 10 (Hinz, 2009).

When reviewing the data each of the six points of focus, listed in paragraph 2.3.3, will if possible be scored in the following categories:

- The amount of tested elements that fall in each of the six categories
- The amount of times the information in chapter 10 led to an indication on the client's information processing strategies in each category.
- The amount of times the information in chapter 10 led to an exclusion of certain information processing strategies in each category.
- The amount of times the information in chapter 10 led to no indication.

A table displaying the total scores can be found in appendix D. In chapter 3 it will be described as well as shown in form of a pie chart to what extent indications or contraindication on the information processing pattern of the client can be made. The

term “contraindication” refers to the elements of the ETC assessment for which an interpretation of part the scores was giving. The amount of contra-indications will be named but not further taken into account in the proceeding analysis of the data.

To what extent indications were possible also influences to what extent possible change can be shown. In a following step it is going to be analyzed when an indication based on chapter 10 could be made, how many times change or no change in the clients’ information processing pattern can be shown. The result will also be displayed in form of a pie chart in chapter 3. Ultimately if indications were possible the information processing pattern of the client will be listed comparing the pre- and posttest results. Based on a first literature review of the Hinz’ book (2009) the following categories, expressed through different wording could be found:

1. Preferred or input from ETC component functions
2. Overused or dominant ETC component functions
3. Underused or blocked ETC component functions

The possible occurrence of change between the pre-and posttest, based on the indications that could be made, will be described. The collected data will aid in a comparison of the clients preferences in information processing and possible change within it between two types of measure in the fourth guiding question.

Under the light of the ETC theory the data will be further analyzed to determine a possible direction of change. The overall goal of the treatment is based on the assumption that well-functioning individuals are able to process information on all levels and with the different components of the ETC in a balanced fashion. Based on the data it will be described if the indications led to believe that the client used predominantly certain component functions in the beginning and acquired new information from one or several component functions in a more balanced fashion towards the end of the treatment will be seen as a movement towards well-being whereas the vice versa case will be seen as a movement towards ill-being. In this context also the experience of the creative component function, with its emphasis on integrating component functions or experiences of self-actualization, at all or more frequently at the end of the treatment will be seen as a movement towards well-being and the vice versa case as a movement towards ill-being. The collected data will aid in a comparison of a possible direction of change between two types of measure in the third guiding question.

### 2.5.3 Analysis guiding question 3

The ROM measurement is used to answer the third guiding question assessing data prior to and after the art therapy treatment. The 4 K’s analysis report of the client can be found in appendix E. The total score of the categories “complaints” and “quality of life” are compared to norm groups in the 4 K’s analysis report. The total scores are therefore categorized from high to low amount of complaints or quality of life.

A change in the direction of well-being in the first category, complaints, would be if the score would change to a lower category. A shift towards aggravation would be indicated if the score change to a higher category then before. The possible categories are:

- very high: score above 28,
- high: score 23 to 28,
- above average: score 19 to 22,
- average: score 16 to 18,
- below average: score 12 to 15,
- low: score 8 to 11,
- very low: score below 8.

In the category quality of life, the influence of the complaints on the daily functioning is tested. A change in the direction of well-being in the second category, quality of life, would be if the score would change to a higher category. A shift towards aggravation would be indicated if the score changed to a lower category then before. The possible categories are:

- low: score below 2.25,
- below average: score 2.25 to 2.99,

- average: score 3 to 3.99,
- above average: score 4 to 5.5,
- high: score above 5.5.

The results will then be compared to the direction of change that was determined in the second guiding question, revealing if no change or the same direction of change was determined or not. In case a comparison is only possible to some extent the reasoning behind that will be described.

#### 2.5.4 Analysis guiding question 4

The data collected through the client questionnaire is analyzed by dividing the collected data into five points of focus. The first three points aid in ascertaining the clients' preference in information processing. For each point of focus the analysis of the data based on the ETC theory is presented.

##### **1. Preferred media properties at the end of the treatment**

According to Kagitcibasi and Lusebrink (in Hinz, 2009) fluid materials offer less control, less time to think and are more likely to trigger the affective component, whereas more resistive materials allow internal structuring and are indicative of a preference of the cognitive component. Based on the choice of the client an indication of the clients preferred way of information processing will be made. Furthermore the client is asked to elaborate on her choice. The answer of the client will be reviewed in the context if it confirms the indication of a preferred way of information processing via the cognitive or affective component.

##### **2. Preferred and least preferable ways of interaction with art media at the end of the treatment**

The given answering possibilities (see appendix F) are each associated with a general task of a ETC component function. Answer A is associated with the kinesthetic, B with the sensual, C with the perceptual, D with the affective, E with the cognitive and F with the symbolic component function. Furthermore the option that the client experienced none of the components named above is given. An indication of none, one or several preferred as well as none, one or several least preferable ways of interacting with art media will be given. In an attempt of creating a terminology the client could understand without in-depth knowledge of the ETC theory the term "least preferable" ways of interacting with art media has been created. At this stage it can only be hypothesized that the answer to this question may be linked to indications of possible underused or blocked ETC component functions. The clients' elaboration on the two questions in this category will be reviewed in the context if it confirms the indication made or offers different input. When reviewing the answer also the relevant chapters from Hinz' book (2009) on the ETC component in question will be used for further input.

##### **3. Favorite and least favorite art media/process**

The two open questions that fall under this category are reviewed, using the chapters 3 to 8 on the different ETC components in Hinz' book (2009), in order to review if the client answer is indicative of a certain preference in information processing. For the answers to the term "least favorite" art work or process it can also only be hypothesized that the answer to this question may be linked to indications of possible underused or blocked ETC component functions.

##### **4. Possible changes in preference from the beginning to the end of the treatment**

In question 4 it is asked if the determined preferred and least preferable way of interacting with the art medium at the end of the treatment has changed comparing to the beginning of the treatment. The client can score "Yes" or "No" for this question is then ask to further elaborate. The answer "Yes" will be seen as an indication of change in preference and "No" as no change in preference. The client is also asked to elaborate further, which will be reviewed using the chapters 3 to 8 on the different ETC components in Hinz' book (2009) in order to review if the client answer is indicative of a certain preference in information processing comparing the beginning to the end of the treatment.

### 5. Amount of experience of tasks associated with ETC component functions

In question 5 the client scores on a Likert-scale ranging from "Never" to "Very often". The columns of the Likert-scale are assigned numbers starting with the number 5 for the category "Very often", 4 for "Often", 3 for "Sometimes", 2 for "Rarely" and 1 for "Never". In case the client doesn't choose any of the categories the number 0 is assigned. Each ETC component has three to five tasks described, which the client can score. For the kinesthetic, sensual, cognitive and symbolic component three tasks must be scored. The perceptual component asks to score five tasks and the affective and creative component offer each four different elements to score. The tasks that are associated with each ETC component can be found in appendix F. For each ETC component the numbers of the scored categories are added and then divided by the amount of tasks that is offered to score. The average score for each ETC component will be named and it will be determined if the client experienced tasks from each ETC component or not.

The categories 1 to 4 will also be displayed in a table giving an overview of possible indications on the clients preferred, least preferable information processing strategies and change in preference that could be made. The data of the fifth category will be displayed in a bar graph.

The results will then be compared to the clients' preference in information processing and possible change within it that was determined in the second guiding question. The two data sets will be analyzed revealing if the same indications were made or not. In case a comparison is only possible to some extent the reasoning behind that will be described.

## Chapter 3 Results

### 3.1 Guiding question 1

*"Which amount of change can be determined, when comparing the ETC pre- and posttest assessment data of the client?"*

When analyzing the compared average scores of the three pretests and the three posttests ETC assessments change occurred in 16 of the tested elements, which is 62% of the data. For the other 10 of the tested elements, which accumulates to 38% of the data no change was measured (see figure 2). The score for each individual assessment session can be found in appendix A and the comparison the pre- and posttest data is displayed in form of a table in appendix B. Furthermore the data was analyzed determining for the 62% of the times that change was measured the amount of score points the pre- and posttest differed from each other (see figure 3). Apart from the 38% where no change was measured, the scores changed 0.5 score points 15%, 1 score point 27%, 1.5 score points 8% and 12 % of the times the change couldn't be measured numerical.

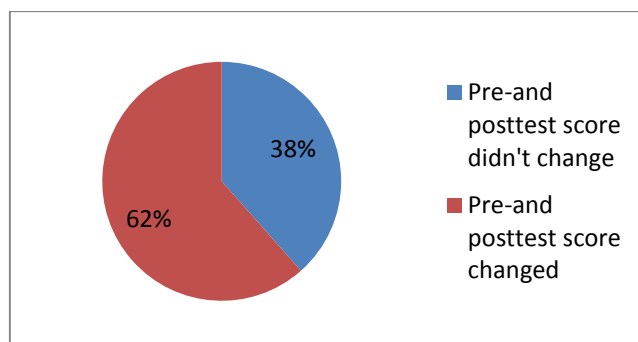


Figure 2 Amount of change

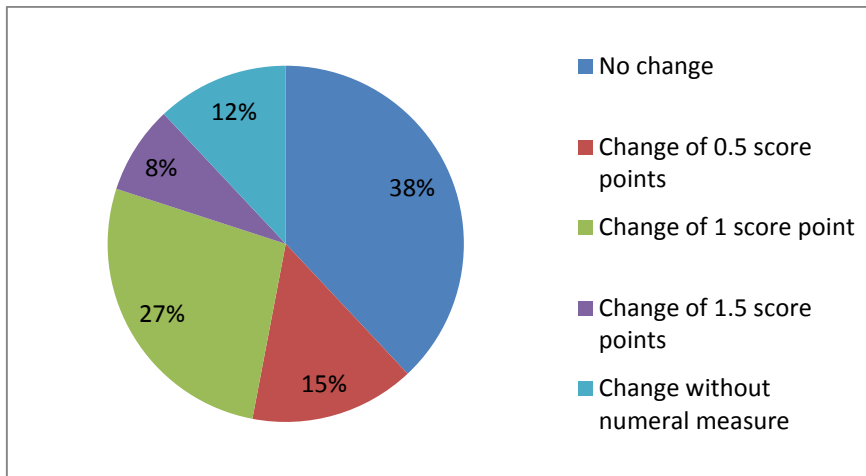


Figure 3 Amount of change in score points

### 3.2 Guiding question 2

*"To what extent can the rated ETC pre- and posttest results be linked to indications of the clients' information processing pattern, possible changes and a direction of change within it, when analyzing the content of the paragraph "Information Gathered from Assessment Tasks" in chapter 10 (Hinz, 2009)?"*

Out of the 26 tested elements of the assessment instrument 18 were mentioned separately in the paragraph "Information Gathered from Assessment Tasks" in chapter 10 (Hinz, 2009). Out of those 18 tested elements that could be further analyzed, 6 were described sufficiently leading to an indication of a certain ETC component function or strategy. Another 4, were partly described which led to a contraindication. The rated categories in the other 8 tested elements were described insufficiently or no link between the scores and possible indications of clients' information processing pattern was named. The analysis of content per tested element of the pre- and posttest data in written form is displayed in form of a table in appendix C.

The analysis of content has been further analyzed in numerical form, which can be found in form of a table in appendix D. Based on the analysis it could be determined that out of the 26 tested elements 10, or 38 % of the data, led to an indication or contraindication and for 16, or 62 % of the assessment elements no indication could be made based on the insufficient description. Out of the 10 elements that led to an indication or contraindication 7 showed an indication of change. Indications on the clients' information processing pattern and change within it could be made to some extent. The results are summarized in the figure 4.

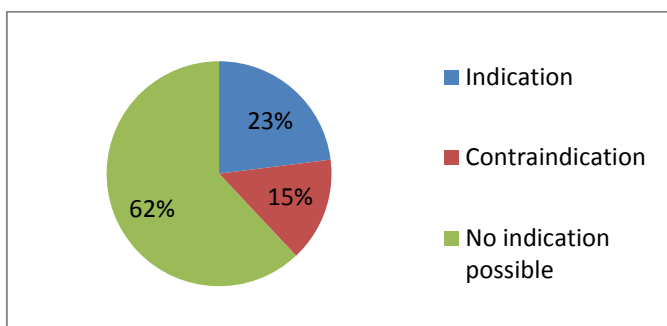


Figure 4 Amount of indications

In figure 5 the indications of the clients' preferences, over- or underuse of certain ETC components that could be made from the 6 tested elements or 23% of the data that



were described sufficiently, are listed. The 4 elements or 15% of the data that were described only partly leading to a contraindication are not taken into further account.

From the 23% of the data from which indications could be made, it could be determined that the most preferable ETC-components in the pretest assessment are the perceptual component, with 3 indications and the cognitive component, with 2 indications. Once it was indicated that the cognitive component is overused. An underuse of the perceptual component has been assessed once.

In the posttest assessment, based on the 23% of the data from which indications could be made, it was indicated 4 times that the most preferable ETC-component is the affective component. Furthermore also input from other components was used, such as the symbolic, kinesthetic, sensory and creative component, each indicated once. The dominant use of the cognitive component was indicated once.

Pretest assessment		Posttest assessment	
Involvement of different ETC components (c.)	Amount of indications	Involvement of different ETC components	Amount of indications
Preference/ input from		Preference/ input from	
Perceptual	3	Affective	4
Cognitive	2	Symbolic	1
		Kinesthetic	1
		Sensory	1
		Creative	1
Overuse/ Dominant use		Overuse/ Dominant use	
Cognitive	3	Cognitive	1
Underuse		Underuse	
Perceptual	1	-	

Figure 5 Indications based on content analysis

Based on the analysis of content a possible direction of change could be determined to some extent. Out of the 26 tested elements for 6 a description of which score of the rating scale may be associated with well-being or ill-functioning has been offered. Out of those 6 elements that offered an interpretation of the scores well-functioning or flexibility in the use of input from different component functions has been indicated once in the pretest as well as in the posttest. The preference of the client changed from input from two component functions to input from five different component functions. Furthermore input from the creative component has been indicated once in the posttest assessment. Both, the use of new component functions as well as the use of the creative component, indicate a direction of change towards well-being.

### 3.3 Guiding question 3

*"Which direction of possible change does the pre- and posttest Routine Outcome Monitoring by the psychologist show, compared to what was determined through the ETC assessment?"*

The total score of the category "Complaints" changed from 22 in the pretest to 17 in the posttest, which indicates significant change as the complaints in comparison to the norm group changed from the category "above average" to "average".

The total score for the category "Quality of life" can't be compared as the client didn't fill in all the questions in the posttest assessment, which led to a missing score. The total score in the pretest is 2.25, which scores in the category "below average" and is interpreted as a low quality of life compared to the norm group. For this category a

direction of change can't be determined due to missing data. For this category a direction of change towards well-being can be determined.

A summary of the total score for the pre- and posttest can be found in figure 6. All the scores of the 4 K's analysis can be found in appendix E.

ROM- measurement	ROM-scores pretest assessment	ROM-scores posttest assessment
1. Complaints Total score	22	17
1.1 Complaints vs. norm group	Above average	Average
2. Quality of life Total score	2.25	Missing
2.1 Quality of life vs. norm group	Below average	Missing

Figure 6 Comparison ROM pre- and posttest assessment

A direction of change could be determined to some extent. In the first category "complaints" the direction of change towards well-being could be determined. For the second category the direction of change could not be determined due to missing data.

In the following the direction of change that could be determined through the analysis of the ETC assessment in guiding question 2 as well as the Routine Outcome Monitoring, will be compared. In both data sets the direction of change could only be ascertained to some extent. Based on the existing data both types of measure reveal indications on a direction of change towards well-being.

### 3.4 Guiding question 4

*"Which indications of the clients' preference in information processing and possible change within it can be made based on the client questionnaire, compared to what was determined through the ETC assessment?"*

In the following the results of the client questionnaire are analyzed and summarized following five points of focus. An overview of the results of the first four categories is given in the table in figure 10 and the fifth category is depicted in form of a bar graph in figure 11.

#### 1. Preferred media properties at the end of the treatment

In question 1 the client scored that the preferred media properties at the end of the four month treatment are "fluid materials". According to Kagitcibasi and Lusebrink (in Hinz, 2009) fluid materials offer less control and are more likely to trigger the affective component. The client further elaborate on her choice by saying that working with fluid materials helps her to start working without first planning or thinking. In Hinz (2009) it is further described that resistive materials are likely to evoke internal structure whereas fluid media spread faster, offering less time to think about the expression. The client describes not having to think or plan, which may confirm the preference of the affective component.

#### 2. Preferred and least preferable ways of working at the end of the treatment

Looking at the preferred ways of expression towards the end of the treatment in question 2, the client chose the answering possibilities "Explore and experience different sensation", which Hinz named in her workshop in 2015 as a task of the sensory component function and "Involve yourself with and express affect", which is associated with the affective component. The client further elaborated that she enjoys it, when she doesn't have to do or make anything but for example can just stroke over sand or clay. The client describes an experience of stroking sand or clay, which Hinz refers to in her



workshop in 2015 as a manner of interaction associated with a sensory dominant experience.

In question 3 the client is asked to choose an experience that is the least preferable to her. The client chose the answering possibility "Form concepts, solve problems, categorize or differentiate meaning of objective", which Hinz named in her workshop in 2015 as a task of the cognitive component function. The client further elaborated that in her daily life she uses her cognition a lot and that involving her cognition, when she is doing art, is stress for her. The client refers to her cognition, which will be associated with the cognitive component function as the clients' least preferable function in the art process.

### **3. Favorite and least favorite art media/process**

In the context of this question the client was asked which art experience, looking back at the four months of art therapy treatment, stayed in her mind the most. The client named a clay work she did in the second posttest ETC assessment session. The client described working on a personal theme and having a great feeling through a new found balance. The balance in question she created by giving her thoughts and perfectionism a place through the use of structure, which then enables her to creatively and freely explore. The organization or structuring of the process can be associated with a preference of the perceptual component. Working with personal themes is associated with the use of the symbolic component functions (Hinz, 2009). The description of balance and a great feeling could be interpreted as using different component functions in a more balanced fashion, moments of perfect self-expression or self-realization, which are experiences associated with the creative component function.

In question 7 the least favorite art media or art process was asked, which the client couldn't name.

### **4. Possible changes in preference from the beginning to the end of the treatment**

When asked to score whether the preferred or least preferable way of interacting with art media changed from the beginning to the end of the treatment the client scored "Yes". The client further elaborated that in the beginning of the treatment she experienced frustration due to her perfectionism and thoughts, which could be associated with an overuse of the cognitive component in the beginning of the treatment. The client further named that from the very beginning she enjoyed choosing the art media and technique herself and by doing so learned to just start with a material that she felt like working with and to see what happens. She wrote that this way of working gave her space to experience what was in the presence, to make intuitive decisions and develop trust in the process. Intuitive decision making processes are named in Hinz (2009) within the creative transition area between the cognitive and symbolic component. A shift from using input from the cognitive component to the creative transition area may be indicated.

<b>Category</b>	<b>Indication</b>
Preference/ input from at the end of the treatment	Affective component Sensory component Symbolic component Perceptual component Creative component
Least preferable input from at the end of the treatment	Cognitive component
Comparison of preferences of the beginning to the end of the treatment	Change: Yes
	Beginning: Cognitive component

	End: Creative component (transition area between cognitive and symbolic component)
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Figure 10 Overview results of the first four points of focus

### 5. Amount of experience of tasks associated with ETC component functions

Furthermore the amount of the experience of different component functions was scored in form of a Likert scale. The average scores of the different tasks associated with each of the different ETC component function are presented in figure 11. The client scored that she experienced on average the creative component function "Very often" during the four month art therapy treatment. Hinz (2009) describes this component function as creative, synthesizing, self-actualizing experiences. The sensory component function the client experienced on average "Often". Component functions that the client experiences on average "Sometimes" during the treatment are the perceptual, cognitive, affective and symbolic component functions. Associated tasks of the kinesthetic component the client experienced on average "Rarely". Even though the client scored that she never experienced certain tasks, none of the average scores for each component functions fell in the category "Never". Therefore the client experienced tasks from each component function over the course of the art therapy treatment.

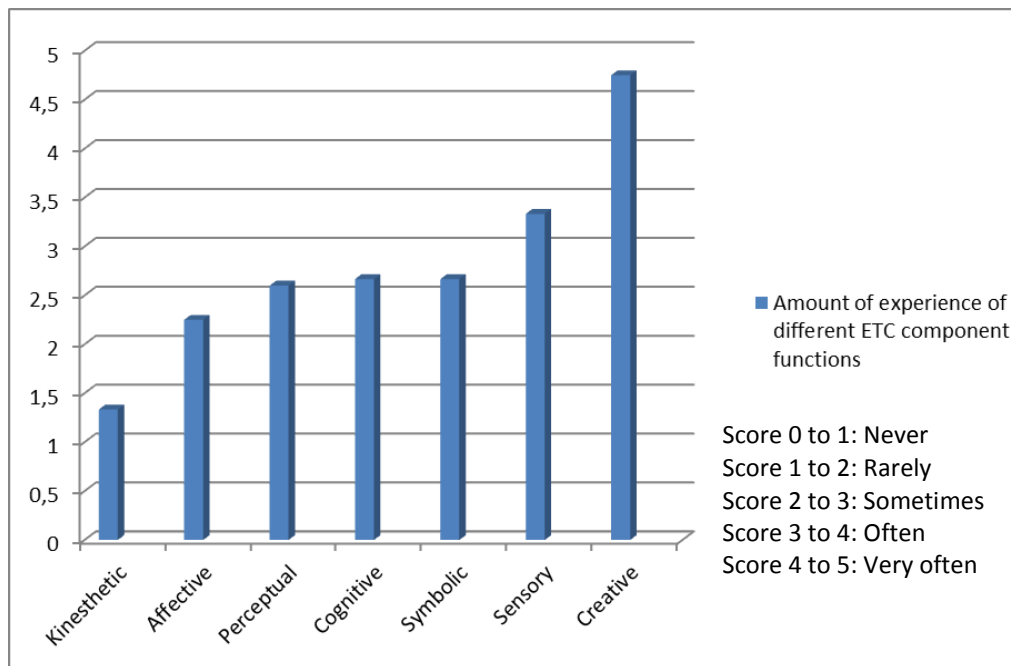


Figure 11 Amount of experience of different ETC component functions during four months art therapy treatment

Finally the collected data is compared to the results of the analysis of the ETC assessment in the second guiding question. In the second guiding question it could be ascertained that the clients' preference in information processing lay with the affective, symbolic, kinesthetic, sensory and creative component function in the posttest. Through the means of the client questionnaire it was determined that at the end of the treatment the client used input from the sensory, affective, perceptual, symbolic and creative component function. Both data sets reveal similar data, only the perceptual and kinesthetic components have been indicated differently. Furthermore in the client questionnaire it could be determined that the client uses all component functions ranging from "Rarely" to "Very often" (see figure 11), which differs from the indication of only four of the component functions in the second guiding question.

In the second guiding question it was further determined that the client changed from using input from two components, the perceptual and cognitive component, to gathering information from several new component functions. Both types of measure reveal the same data to some extent. Also in the client questionnaire it has been ascertained that the client uses input from the cognitive component in the beginning and input from the five component functions, named above, in the end. The client experienced the creative component function "Very often", which is indicative of well-being. Furthermore a shift from the use of the cognitive component function to using input from several new components may indicate a direction of change towards well-being. Based on the existing data the client questionnaire confirms a direction of change towards well-being to some extent.

## Chapter 4 Conclusion, discussion and recommendation

### 4.1 Conclusion

*"To what extent is the ETC assessment, using the new rating scale, sensitive in detecting a client's information processing pattern, when forming images, as well as change and a direction of change within it?"*

In the light of exploring clients' information processing in the brain, when forming images the ETC assessment and its new rating scale have been put to use to collect pre- and posttest data of a single client. The data has been further interpreted based on a content analysis of the information Hinz offered about the ETC assessment in 2009. Also the ROM-measurement as well as a client questionnaire have been put to use in a comparative manner to answer the main question of this research.

A first documentation of using the ETC assessment in a pre- and posttest manner data formulates the basis of this research. In the first guiding question based on the assessed data the amount of change overall and in score points could be determined. Subsequently it can be concluded that by using the new rating scale of the ETC assessment, which entails specific words and categories, the scored observations can be used to determine the amount of change between the pretest and the posttest in a numerical manner. An argument in favor of a high sensitivity of the ETC assessment is found.

Through the analysis of content in the second guiding question it was shown that the clients' information processing pattern, change within it and a possible direction of change could be shown to some extent. Roughly one-fifth of the tested elements of the ETC assessment were sufficiently described allowing for indications on the clients' preferred, overused, underused component functions in the pre- and posttest assessment to be made. The data also revealed to some extent that the determined information processing pattern featured changes. Through the analysis of content it could be further determined that roughly one-fifth of the scores of the different elements of the ETC assessment, offered for rating, beheld an interpretation of well-being or ill-functioning. A direction of change towards well-being has been ascertained to some extent. Even though it may be hypothesized that the scores e.g. "average", "appropriate" and "creative" are associated with well-being, at this stage a ranking of the scores of each ETC assessment element is not entirely possible. Also the determined results of the information processing pattern, change within it as well as a possible direction of change are based on only a small amount of the data, which were described sufficiently. Subsequently in the second guiding question arguments could be found that the ETC assessment is sensitive to some extent.

In the comparison of two types of measure, the direction of change towards well-being, determined in the ETC assessment could be confirmed by the ROM to some extent. The results of both instruments led to indications of a direction of change towards well-being but were also based on some missing data. In the ROM-measurement, the client didn't fill all the questions and for the ETC assessment possible interpretations of

the data exist only partly. This can be seen as another argument that the ETC assessment is sensitive to some extent.

In the fourth guiding question a client questionnaire has been put to use to compare to the ETC assessment data. Both data sets revealed a similar preference in information processing of the client, only differing by one component function. Also both types of measure reveal the same results to some extent on change within the clients' preference in information processing. The client questionnaire confirmed the direction of change towards well-being partly. The data is based on the ETC assessment that only partly offers interpretations of the data and the client questionnaire that uses a slightly different terminology to accommodate the client and gathers information looking back at the treatment rather than having two points of measure. This can be seen as another argument that the ETC assessment is sensitive to some extent.

Through the means of this research it can be concluded that one argument in favor of a high sensitivity of the ETC assessment and its new rating scale and three arguments that the ETC assessment is sensitive to some extent, were found.

## 4.2 Discussion

In the following the validity and reliability of the approach to this research and the collected data is going to be evaluated. This research formed a first exploration of an untested pre- and posttest art therapy assessment. A single-case method has been chosen. Even though this method has been used before when new hypothesis are tested, Boyko (2005) names as a limitation that little substantive evidence is created and misinterpretation due to a limited perspective is possible. Therefore only statements about this individual case can be made. The outcome of the research is not representative for a larger population and also can't be generalized at this stage.

The collected assessment data that was retrieved through the first guiding question as well as the analysis and interpretation of the data in the second guiding question are based on the observations of the therapist, who engaged in a dual relationship of therapy and research. Also an obtrusive way of observation has been used. Therefore the occurrence of a test effect, due to the fact that the client was aware of taking part in a research, may put a threat to the internal validity of the research data. Even though a dual relationship of the therapist as well as a test effect may exist, it may be argued that the client response or the observations made are not of direct relevancy, since this research didn't attempt to lay a causal link between the treatment and possible changes. Due to the fact that a precise interpretation of the scores in the ETC rating scale doesn't exist yet and the observations were scored based only on the information by Hinz (2009), the terms that could be scored left room for subjective interpretations. In the third and fourth guiding questions two different types of measure were put to use to check the results of the first guiding questions. Through the triangulation, created by using different methods, the reliability of the research data increased. Also the use of the ROM-measurement, a quantitative standardized instrument, increased the reliability of the data but in the ROM-posttest one set of data was missing due to a form of non-response. The client questionnaire has been designed based on the existing information of the ETC theory and input from Hinz in a workshop in 2015. Before putting the questionnaire to use it has been evaluated with a colleague and tutor. Nevertheless the questionnaire isn't standardized, which may leave the internal consistency of the questions as well as the reliability of the obtained data to be a subject of discussion.

Looking back at the aims of this research the rating scale of the ETC assessment instrument aided to determine the amount of change of the client, in numerical manner. This may indicate future potential to monitor clients' therapy progress in a pre- and posttest manner. The information processing pattern of the client, change within it and a direction of change could be ascertained to some extent. Nevertheless the ETC assessment instrument still lacks a valid interpretation of the ETC assessment rating scale. Based on the evaluation of the research and the presently available information detailed statements on the meaning and possibilities on the level of sensitivity of the ETC assessment that has been discovered, can't be made. Nevertheless it may be concluded

that too few arguments in favor of a high sensitivity have been found to formally implement the ETC assessment instrument into the art therapy practice yet. This confirms the earlier mentioned statement of Betts (2005) that further research in the area of assessments and rating instruments in the field of art therapy or in this particular case for the ETC assessment is still needed.

### 4.3 Recommendation

For the immediate future recommendations on doing further research in order to create an interpretation of the rating scale of the ETC assessment can be made. For a possible repetition of this research one way of avoiding subjective scoring of the observations in the future would be to let several researchers observe the same situation or to videotape the assessment sessions. Also a peer-examination of the data, which couldn't be realized in this research, may be advisable for future research. Another way, instead of using only the book by Hinz' (2009) as reference, would be to operationalize each possible score of the ETC assessment rating scale, in terms of observable behavior in art expression. Also a possible ranking of the scores needs to be explored. In other art therapy assessments such as the Diagnostic Drawing Series (abbreviated DDS) or Person Picking an Apple from the Tree drawings (abbreviated PPAT) firstly the normal range of visual expression and their pathological variations have been catalogued and investigated (Kapitan, 2010). Gantt (cited in Kapitan, 2010, p.38) names four conditions an assessment instrument historically has to abide by:

- a.) "The assessment should apply broadly to any client, regardless of ability, interest, or intelligence
- b.) It should offer useful and valid information about the client without additional observation or client input
- c.) It should be repeatable over time and compared to obtain a longitudinal view
- d.) Standardized ratings used in an assessment should allow for comparison across different clients or the same client at different times."

Nowadays it has been acknowledge that "the use of a single drawing or set of directives will never meet all of the condition because it reflects an ever-changing context. Which role the ETC assessment can take within this ever-changing context is subject to further exploration. Based on a statement of Hinz (2009) it is also left to argue if the ETC assessment can actually be used to gather information on the subtle differences in the use of the different ETC component functions in a pre- and posttest comparison. Hinz (2009, p.170) emphasizes that the ETC theory may be seen as analyzing people "in terms of fragmented, separate aspects, isolated from each" but actually rather emphasizes "individuals as organized persons, with processes from all components working together in a conceptual manner". Furthermore the ETC concept is based on a theoretical assumption and a link between clients' information processing, with reference to the ETC terminology, and actual activity in the brain or brain based changes could so far not be made. As mentioned earlier, presently very little research exists on art-based changes in the brain (Betts, 2005). When focusing on a broader context of research developments in the field of music therapy lead to believe that a further exploration of the effects of art or art therapy on the brain and the development of the necessary technology, to do so, is needed.

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## Appendix

### Appendix A Pre- and posttest ETC assessment

In the following the scores of the three pre- and posttest ETC assessment sessions can be found. In the left column the ETC assessment element that has been tested can be found and in the right column the score that the therapist assigned.

Signs and symbols of figure A-F:

Scores are underlined


<b>ETC assessment:</b> Pretest I <b>Location:</b> i-psy Amsterdam <b>Date:</b> 06.01.2015 <b>Medium used:</b> Pastel crayons, water, watercolor, watercolor A4 paper	
Tested element	Scoring
<b>1. Preferred medium</b>	
1. Preferred medium	familiair 1- 2- <u>3</u> - 4- 5 unknown
2. Medium properties	fluid 1- <u>2</u> - 3- 4- 5 resistive
<b>2. Interaction with medium</b>	
3. Interaction with medium	fluid 1- 2- 3- <u>4</u> - 5 resistive
4. Paper size	tiny- <u>small</u> -medium- large- extra large
5. Amount of medium used	constricted - <u>average</u> - expansive
6. Respect of time limits	worry- <u>appropriate</u> - no regard
7. Response to limits of creative process	stops prematurely- <u>appropriate</u> -persists inappropriately
8. Response to directions and instructions	worry- <u>appropriate</u> -no regard
9. Commitment and frustration tolerance	gives up easily- persists appropriately- fully engaged using different component functions for creative process - <u>stays to long with task</u>
10. Risk taking	Sticks to familiar-tries new with encouragement- <u>experiments freely</u>
11. Level of energy	Bored- <u>apathetic</u> - <u>interested</u> -engaged-excited
12. Response to mistakes made	Shuts down- <u>Persists</u> -Creates
13. Response to challenging media or processes	Shuts down- <u>Persists</u> - Creates
14. Response to the unknown	Avoid- <u>Await</u> - Approach
<b>3. Stylistic or Expressive Elements of the Final Art Product</b>	
15. Developmental level	Regressed- <u>Appropriate</u> - Advanced
16. Line and form quality	Poor- Tentative- <u>Assured</u> - Bold
17. Use of space	Less than ¼ - <u>Moderate</u> - More than 3/4
18. Color prominence	No color- low color- Moderate (3-4 colors) - <u>High colors</u>
19. Color Type	Low arousal- <u>Mixed Low and High</u> - High arousal
20. Color Fit	Bizarre- Appropriate- <u>Creative</u>
21. Level of integration	Poor gestalt - <u>Cohesive</u> - Excellent integration
22. Organization function	Kx- K- Crk-s - S- Sx Px- P- Crp-a - A- Ax Cx- C- Crc-sy - Sy- Syx
23. Content and symbolism	

Primary exploring the medium properties. She voiced that she didn't want to work with a topic or work out a certain form or symbol in order to not be influenced or frustrated by perfectionistic or judgmental thought processes of herself.

#### 4. Verbal communication

24. Quality of verbal comments (Representation of which ETC component)	K- S- A- <u>P- C-</u> Sy- Cr
25. Rate and volume of speech	Rapid changes, loud, ( <u>excessive talkativeness</u> ), pressured, flight of ideas - <u>Slow, deliberate speech</u> - Quiet, tearful, lack of spontaneous speech
26. Logic displayed	Bizarre- Irrational- <u>Thoughtful-</u> Creative


Figure A 1. Pretest assessment

<p><b>ETC Assessment:</b> Pretest II</p> <p><b>Location:</b> i-psy Amsterdam</p> <p><b>Date:</b> 14.01.2015</p> <p><b>Medium used:</b> Ecoline, straw, water spray bottle, pipette, crayons, eraser, A4 watercolor paper</p>	
Tested element	Scoring
<b>1. Preferred medium</b>	
1. Preferred Medium	familiär 1- 2- 3- 4- 5 unknown
2. Medium properties	fluid 1- 2- 3- 4- 5 resistive
<b>2. Interaction with medium</b>	
3. Interaction with medium	fluid 1- 2- 3- 4- 5 resistive
4. Paper size	tiny- <u>small-</u> medium- large- extra large
5. Amount of medium used	constricted - <u>average-</u> expansive
6. Respect of time limits	<u>worry-</u> appropriate- no regard
7. Response to limits of creative process	stops prematurely- <u>appropriate-</u> persists inappropriately
8. Response to directions and instructions	worry- <u>appropriate-</u> no regard
9. Commitment and Frustration tolerance	gives up easily- <u>persists appropriately-</u> fully engaged using different component functions for creative process - stays to long with task
10. Risk taking	Sticks to familiar-tries new with encouragement- <u>experiments freely</u>
11. Level of energy	Bored- <u>apathetic-</u> interested- <u>engaged-</u> excited
12. Response to mistakes made	Shuts down- <u>Persists-</u> Creates
13. Response to challenging media or processes	Shuts down- <u>Persists-</u> Creates
14. Response to the unknown	Avoid- <u>Await-</u> Approach
<b>3. Stylistic or Expressive Elements of the Final Art Product</b>	
15. Developmental level	Regressed- <u>Appropriate-</u> Advanced
16. Line and form quality	Poor- Tentative- <u>Assured</u> - Bold
17. Use of space	Less than ¼ - <u>Moderate</u> - More than 3/4
18. Color prominence	No color- low color- Moderate (3-4 colors) - <u>High colors</u>
19. Color Type	Low arousal- Mixed low and High- <u>High arousal</u>
20. Color Fit	Bizarre- Appropriate- <u>Creative</u>
21. Level of integration	Poor gestalt - <u>Cohesive-</u> Excellent integration




22. Organization function	Kx- K- Crk-s - S- Sx Px- P- Crp-a - A- Ax <u>Cx- C- Crc-sy - Sy- Syx</u>
23. Content and symbolism	The client experiment with media properties and explained the different steps she undertook. No further content or symbolism is named other than experimentation.
<b>4. Verbal communication</b>	
24. Quality of verbal comments (Representation of which ETC component)	K- S- A- <u>P- C-</u> Sy- Cr
25. Rate and volume of speech	Rapid changes, loud, excessive talkativeness, <u>pressured</u> , flight of ideas - <u>Slow, deliberate speech</u> - Quiet, tearful, lack of spontaneous speech
26. Logic displayed	Bizarre- Irrational- <u>Thoughtful</u> - Creative

Figure B 2. Pretest assessment

<b>ETC assessment:</b> Pretest III  <b>Location:</b> i-psy Amsterdam  <b>Date:</b> 21.01.2015  <b>Medium used:</b> Collage, several magazines, glue stick, scissors, A4 paper	
<i>Tested element</i>	<i>Scoring</i>
<b>1. Preferred medium</b>	
1. Preferred medium	familiar <u>1</u> - 2- 3- 4- 5 unknown
2. Medium properties	fluid 1- 2- 3- <u>4</u> - 5 resistive
<b>2. Interaction with medium</b>	
3. Interaction with medium	fluid 1- 2- 3- <u>4</u> - 5 resistive
4. Paper size	tiny- <u>small</u> -medium- large- extra large
5. Amount of medium used	constricted - <u>average</u> - expansive
6. Respect of time limits	worry- <u>appropriate</u> - no regard
7. Response to limits of creative process	stops prematurely- <u>appropriate</u> - persists inappropriately
8. Response to directions and instructions	worry- <u>appropriate</u> - no regard
9. Commitment and Frustration tolerance	gives up easily- <u>persists appropriately</u> - fully engaged using different component functions for creative process - stays to long with task
10. Risk taking	Sticks to familiar- tries new with encouragement- <u>experiments freely</u>
11. Level of energy	Bored- apathetic- interested- engaged- excited
12. Response to mistakes made	Shuts down- <u>Persists</u> - Creates
13. Response to challenging media or processes	Shuts down- <u>Persists</u> - Creates
14. Response to the unknown	Avoid- <u>Await</u> - Approach
<b>3. Stylistic or Expressive Elements of the Final Art Product</b>	
15. Developmental level	Regressed- <u>Appropriate</u> - Advanced
16. Line and form quality	Poor- <u>Tentative</u> - Assured - Bold
17. Use of space	Less than ¼ - <u>Moderate</u> - More than 3/4
18. Color prominence	No color- <u>Low color</u> - moderate (3-4 colors) - High colors

19. Color Type	<u>Low arousal</u> - Mixed low and High- High arousal
20. Color Fit	Bizarre- Appropriate- <u>Creative</u>
21. Level of integration	Poor gestalt - <u>Cohesive</u> - Excellent integration
22. Organization function	Kx- K- Crk-s - S- Sx Px- <u>P</u> - Crp-a - A- Ax Cx- C- Crc-sy - Sy- Syx
23. Content and symbolism	The client also experiments with this new material: collage. At the end while focusing on the form that she created she voiced that she herself is always up and down and she would like live to go in a more smooth way, following one line, like in the one displayed in her collage. For the first time the client made a connection between her picture, her daily life and personal meaning.
<b>4. Verbal communication</b>	
24. Quality of verbal comments (Representation of which ETC component)	K- S- A- <u>P</u> - C- Sy- Cr
25. Rate and volume of speech	Rapid changes, loud, excessive talkativeness, pressured, flight of ideas - Slow, deliberate speech - Quiet, tearful, lack of spontaneous speech
26. Logic displayed	Bizarre- Irrational- Thoughtful- Creative

Figure C 3. Pretest assessment

<b>ETC assessment:</b> Posttest I  <b>Location:</b> I-psy Amsterdam  <b>Date:</b> 03.06.2015  <b>Medium used:</b> Pastel crayons, oil crayons	
<i>Tested element</i>	<i>Scoring</i>
<b>1. Preferred medium</b>	
1. Preferred medium	familiair <u>1</u> - 2- 3- 4- 5 unknown
2. Medium properties	fluid 1- <u>2</u> - 3- 4- 5 resistive
<b>2. Interaction with medium</b>	
3. Interaction with medium	fluid 1- <u>2</u> - 3- 4- 5 resistive
4. Paper size	tiny- small - <u>medium</u> - large- extra large
5. Amount of medium used	constricted - <u>average</u> - expansive
6. Respect of time limits	worry- <u>appropriate</u> - no regard
7. Response to limits of creative process	stops prematurely- <u>appropriate</u> -persists inappropriately
8. Response to directions and instructions	worry- <u>appropriate</u> -no regard
9. Commitment and Frustration tolerance	gives up easily- <u>fully engaged using different component functions for creative process</u> - stays to long with task
10. Risk taking	Sticks to familiar-tries new with encouragement- <u>experiments freely</u>
11. Level of energy	Bored- apathetic- interested- <u>engaged</u> - excited
12. Response to mistakes made	Shuts down- Persists- <u>Creates</u>
13. Response to challenging media or processes	Shuts down- <u>Persists</u> - Creates
14. Response to the unknown	Avoid- Await- <u>Approach</u>
<b>3. Stylistic or Expressive Elements of the Final Art Product</b>	
15. Developmental level	Regressed- <u>Appropriate</u> - Advanced


16. Line and form quality	Poor- Tentative- <u>Assured</u> – Bold
17. Use of space	Less than ¼ - Moderate – <u>More than 3/4</u>
18. Color prominence	No color- <u>low color</u> - Moderate (3-4 colors) – High colors
19. Color Type	<u>Low arousal</u> - Mixed low and High- High arousal
20. Color Fit	Bizarre- Appropriate- <u>Creative</u>
21. Level of integration	Poor gestalt - <u>Cohesive</u> - Excellent integration
22. Organization function	Kx- K- Crk-s – S- Sx Px- P- Crp-a – A- Ax Cx- C- <u>Crc-sy</u> – Sy- Syx
23. Content and symbolism	
The client wants to experiment further with the topics trust, connection and separating oneself from the other and therefore starts with a second drawing. In the first drawing she experienced the need to clearly separate the center shape, which symbolizes her, from the surrounding. Just after the clear separation she started to smear the lines and looked how she could interact with the surrounding. The client asked herself how much separation an individual needs to stay an individual and how being an individual and connecting with your surrounding fits together. In this particular drawing she expressed the opposite and created no borders in the contact with others. After that she realized that she needs a balance between those two extremes.	
<b>4. Verbal communication</b>	
24. Quality of verbal comments (Representation of which ETC component)	K- S- <u>A</u> - <u>P</u> - C- <u>Sy</u> - <u>Cr</u>
25. Rate and volume of speech	Rapid changes, loud, excessive talkativeness, pressured, flight of ideas - <u>Slow, deliberate speech</u> - Quiet, tearful, lack of spontaneous speech
26. Logic displayed	Bizarre- Irrational- <u>Thoughtful</u> - Creative

Figure D 1. Posttest assessment

<b>ETC assessment:</b> Posttest II <b>Location:</b> i-psy Amsterdam <b>Date:</b> 10.06.2015 <b>Medium used:</b> clay	<div>Client described the process itself as the important experience and therefore decided not to keep the product. Later she regretted not having taken a photograph.</div>
<i>Tested element</i>	<i>Scoring</i>
<b>1. Preferred medium</b>	
1. Preferred medium	familiair 1- 2- 3- 4- 5 unknown
2. Medium properties	fluid 1- 2- <u>3</u> - 4- 5 resistive
<b>2. Interaction with medium</b>	
3. Interaction with medium	fluid 1- 2- <u>3</u> - 4- 5 resistive
4. Paper size	tiny- <u>small</u> -medium- large- extra large
5. Amount of medium used	constricted - <u>average</u> - expansive
6. Respect of time limits	worry- <u>appropriate</u> - no regard
7. Response to limits of creative process	stops prematurely- <u>appropriate</u> -persists inappropriately
8. Response to directions and instructions	worry- <u>appropriate</u> -no regard
9. Commitment and Frustration tolerance	gives up easily- persist appropriately- <u>fully engaged using different component functions for creative process</u> – stays to long with task
10. Risk taking	Sticks to familiar-tries new with encouragement- <u>experiments freely</u>
11. Level of energy	Bored- <u>apathetic</u> -interested- <u>engaged</u> -excited
12. Response to mistakes made	Shuts down- <u>Persists</u> -Creates

13. Response to challenging media or processes	Shuts down- Persists- <u>Creates</u>
14. Response to the unknown	Avoid- Await- <u>Approach</u>
<b>3. Stylistic or Expressive Elements of the Final Art Product</b>	
15. Developmental level	Regressed- <u>Appropriate</u> - Advanced
16. Line and form quality	Poor- Tentative- <u>Assured</u> – Bold
17. Use of space	Less than ¼ - <u>Moderate</u> – More than 3/4
18. Color prominence	<u>No color</u> - low color- Moderate (3-4 colors) – High colors
19. Color Type	<u>Low arousal</u> - Mixed low and High- High arousal
20. Color Fit	Bizarre- <u>Appropriate</u> - Creative
21. Level of integration	Poor gestalt - <u>Cohesive</u> - Excellent integration
22. Organization function	Kx- <u>K</u> - Crk-s – <u>S</u> - Sx Px- P- <u>Crp-a</u> – A- Ax Cx- C- <u>Crc-sy</u> – Sy- Syx
23. Content and symbolism	The client worked for the first time, when not given a task, on a personal topic. In a previous session the client used pastel crayons to explore the emotion sadness. She told me that this task made a strong impression on her. She used this session to further explore this topic with a different material. She created a round bowl-shaped form which symbolizes stability. She used one hand to cup the clay and by doing so she said she had the freedom to freely work as it gave the clay and herself stability. Wanting this balance between stability and freedom to explore for example her feelings is an important realization for her. She usually finds herself either in a position where she goes over her own limits and energy resources in order to please other people or she feels passive and doesn't want to do anything anymore. In her daily life she would like to have that balance, which she experienced during the art process.
<b>4. Verbal communication</b>	
24. Quality of verbal comments (Representation of which ETC component)	K- S- A- P- C- <u>Sy</u> - <u>Cr</u>
25. Rate and volume of speech	Rapid changes, loud, excessive talkativeness, pressured, flight of ideas - <u>Slow, deliberate speech</u> - Quiet, tearful, lack of spontaneous speech
26. Logic displayed	Bizarre- Irrational- Thoughtful- Creative

Figure E 2. Posttest assessment

<b>ETC assessment:</b> Posttest III <b>Location:</b> i-psy Amsterdam <b>Date:</b> 17.06.2015 <b>Medium used:</b> Ecoline, oil crayons, watercolor A3 paper	
<i>Tested element</i>	<i>Scoring</i>
<b>1. Preferred medium</b>	
1. Preferred medium	familiair <u>1</u> - 2- 3- 4- 5 unknown
2. Medium properties	fluid <u>1</u> - 2- 3- 4- 5 resistive
<b>2. Interaction with medium</b>	
3. Interaction with medium	fluid 1- 2- <u>3</u> - 4- 5 resistive
4. Paper size	tiny- small - <u>medium</u> - large- extra large
5. Amount of medium used	constricted - <u>average</u> - expansive
6. Respect of time limits	worry- <u>appropriate</u> - no regard
7. Response to limits of creative process	stops prematurely- <u>appropriate</u> -persists inappropriately

8. Response to directions and instructions	worry- <u>appropriate</u> -no regard
9. Commitment and Frustration tolerance	gives up easily- persists appropriately- <u>fully engaged using different component functions for creative process</u> – stays to long with task
10. Risk taking	Sticks to familiar-tries new with encouragement- <u>experiments freely</u>
11. Level of energy	Bored- <u>apathetic</u> -interested- <u>engaged</u> -excited
12. Response to mistakes made	Shuts down- <u>Persists</u> -Creates
13. Response to challenging media or processes	Shuts down- Persists- <u>Creates</u>
14. Response to the unknown	Avoid- Await- <u>Approach</u>
<b>3. Stylistic or Expressive Elements of the Final Art Product</b>	
15. Developmental level	Regressed- <u>Appropriate</u> - Advanced
16. Line and form quality	Poor- Tentative- <u>Assured</u> – Bold
17. Use of space	Less than ¼ - <u>Moderate</u> – More than 3/4
18. Color prominence	No color- low color- Moderate (3-4 colors) – <u>High colors</u>
19. Color Type	Low arousal- <u>Mixed low and High</u> - High arousal
20. Color Fit	Bizarre- <u>Appropriate</u> - <u>Creative</u>
21. Level of integration	Poor gestalt - <u>Cohesive</u> - Excellent integration
22. Organization function	Kx- <u>K</u> - Crk-s – <u>S</u> - Sx Px- <u>P</u> - Crp-a – A- Ax Cx- C- <u>Crc-sy</u> – Sy- Syx
23. Content and symbolism	<p>The client chose to repeat a task from the beginning. She said the familiarity would give her the freedom to explore a personal topic. The topic is balance between control and support. Aspects that give her support in her artwork are structure, lines, tasks or the familiarity of tasks. Once she has this support she experiences the freedom to explore and let control go. First feelings of perfectionism came on the surface, which she could let go by taking a step back, reevaluating before she continued. Further the client explained that she no longer fears that she isn't doing it good enough or that she wouldn't know where and how to start or to continue. She describes her head as less chaotic.</p>
<b>4. Verbal communication</b>	
24. Quality of verbal comments (Representation of which ETC component)	K- S- A- <u>P</u> - C- <u>Sy</u> - <u>Cr</u>
25. Rate and volume of speech	Rapid changes, loud, excessive talkativeness, pressured, flight of ideas - <u>Slow, deliberate speech</u> - Quiet, tearful, lack of spontaneous speech
26. Logic displayed	Bizarre- Irrational- <u>Thoughtful</u> - Creative

Figure F 3. Posttest assessment

## Appendix B Comparison ETC pre- and posttest assessment data

In appendix B the analysis of the ETC assessment can be found. The average score of each of the 26 tested elements of the three pretest as well as of the three posttest assessment sessions are compared, each indicated by a different symbol.

Signs and symbols of figure G:





























Middle score of the three pretest assessment sessions



Middle score of the three posttest assessment sessions



This element is scored in a different manner (see § 2.5.1)

Tested elements	Scores				
1. Preferred medium					
1. Preferred medium	Familiar: 1	2	3	4	Unknown: 5
			 		
2. Medium properties	Fluid: 1	2	3	4	Resistive: 5
					
2. Interaction with medium					
3. Interaction with medium	Fluid: 1	2	3	4	Resistive: 5
					
4. Paper size	Tiny	Small	Medium	Large	Extra large
					
5. Amount of medium used		Constricted	Average	Expansive	
			 		
6. Respect of time limits		Worry	Appropriate	No regard	
					
7. Response to limits of creative process		Stops prematurely	Appropriate	Persists inappropriately	
			 		
8. Response to directions, instructions		Worry	Appropriate	No regard	
			 		
9. Commitment/ Frustration tolerance	Stays to long with task	Persists appropriately	Fully engaged using different components	Gives up easily	
					
10. Risk taking		Sticks to familiar	Tries new with encouragement	Experiments freely	
					
11. Level of energy	Bored	Apathetic	Interested	Engaged	Excited
			 		
12. Response to mistakes		Shuts down	Persists	Create	
			 		
13. Response to challenging media		Shuts down	Persists	Create	
					

14. Response to unknown		Avoid	Await	Approach	
<b>3. Stylistic or Expressive Elements of the Final Art Product</b>					
15. Develop- mental level		Regressed	Appropriate	Advanced	
16. Line, Form quality	Poor	Tentative	Assured	Bold	
17. Use of space		Less than 1/4	Moderate	More than 3/4	
18. Color prominence	No color	Low color	Moderate 3-4 colors	High colors	
19. Color type		Low arousal	Mixed low and high	High arousal	
20. Color fit		Bizarre	Appropriate	Creative	
21. Level of integration		Poor gestalt	Cohesive	Excellent integration	
22. Organization function	Kinesthetic pathological	Kinesthetic	Creative integration K + S	Sensual	Sensual Pathological
	Perceptual Pathological	Perceptual	Creative integration P + A	Affective	Affective Pathological
	Cognitive Pathological	Cognitive	Creative integration C + Sy	Symbolic	Symbolic Pathological
23. Content/ Symbolism	In the first three assessment sessions the client focused mainly on the experimentation with the materials and also voiced that she avoided any content, symbol or personal meaning as it may bring out her perfectionistic tendencies and she starts overthinking every step.		<b>Change</b>	In the final three assessment sessions change could be found in the image and the description of the client about the content and symbolism. The client explored and realized themes around balancing different aspects of herself and in the interaction with others. Furthermore the	










			client described moments of self-realization.		
4. Quality of verbal comments					
24. Quality of verbal comments 	Kinesthetic Perceptual Cognitive		Sensual Affective Symbolic		Creative
		 			
25. Rate and Volume of speech		Excessive, Rapid changes	Slow/ Deliberate	Quiet/ Tearful/ Not spontaneous	
			 		
26. Logic displayed		Bizarre Irrational	Thoughtful	Creative	
			 		

Figure G ETC assessment comparison pre- and posttest data

## Appendix C Analysis of content step 1

In the following the results of the content analysis are presented. The pre- and posttest ETC assessment results are analyzed per tested element and compared with each other. The variables that were used to systematically analyze the information presented with in chapter 10 in Hinz' book (2009) can be found in paragraph 2.3.2.

Tested element	Possible indications from pretest assessment	Change or no change	Possible indications from posttest assessment
<b>1. Preferred medium</b>			
1. Preferred medium	<p><b>Assessment vs. existing analysis:</b> The information presented in the paragraph "preferred medium". The analysis, of the scores presented with, focusses on indicating the existence of over-, underuse or blocked components to some extend without specifying which component it might be.</p> <p><b>Hinz, 2009, p. 197:</b> If the client chooses the same materials over a series of tasks it may indicate that a certain component is overused, whereas flexibility is desired.</p> <p><b>Contraindication:</b> The overuse of a certain component can't be indicated as the client scored a middle score.</p>	No change	



2. Medium properties	<p><b>Assessment vs. existing analysis:</b> In the paragraph "media properties and strength of preference" the relation between the scores and clients' preference in information processing strategies is described.</p> <p><b>Hinz, 2009, p. 197:</b> The more fluid the chosen materials the more affective input is used to structure images. Whereas choices of more resistive materials may be associated with preference of the cognitive component. If the client chooses different materials, flexibility may be indicated, which is desired in information gathering and "the hall-mark of a well-functioning individual" when the different strategies are used in a balanced fashion.</p> <p><b>Indication:</b> The client scored a middle score, which may indicate flexibility in using different component functions.</p>	Change	<b>Indication:</b> The client scored closer to the score "Fluid" choice of media, which may indicate input from the affective component.
<b>2. Interaction with medium</b>			
3. Interaction with medium	<p><b>Assessment vs. existing analysis:</b> In the paragraph "Manner of interaction with media to process" an example of how paint can be used in demonstrating two of possible 7 ways of component processing preferences is given.</p> <p><b>Hinz, 2009, p.199:</b> The use of e.g. paint can be in a more resistive manner focusing on form, which may indicate the perceptual component or in a more fluid manner, which may indicate preference of the affective component.</p> <p><b>Indication:</b> The client focused on form and line elements when using a very fluid medium such as ink, which may indicate a preference of the perceptual component.</p>	Change	<b>Indication:</b> The shift in the scores towards a fluid manner of interaction with the material may indicate more affective input.
4. Paper size	<p><b>Assessment vs. existing analysis:</b> This element is mentioned in the paragraph "Responses to boundaries and limits". Only for one score it is mentioned how it could be related to a certain preference in information processing.</p> <p><b>Hinz, 2009, p.199:</b></p>	Change	<b>Indication:</b> The client scored "Medium", which may indicate a shift towards more input from the affective component.

	<p>Larger paper can be related to more expansiveness in expression and can therefore be related to a preference of the affective component.</p> <p><b>Contraindication:</b> The client scored "Small", which may show a contraindication of a preference of the affective component.</p>		
5. Amount of medium used	<p><b>Assessment vs. existing analysis:</b> This element is mentioned in the paragraph "Responses to boundaries and limits". Only for one score it is mentioned how it could be related to a certain preference in information processing.</p> <p><b>Hinz, 2009, p. 199:</b> Expansive use of the media may relate to the preference of the affective component.</p> <p><b>Contraindication:</b> The client scored a middle score "Average", which shows a contraindication of a preference of the affective component.</p>	<b>No change</b>	
6. Respect to time limits	<p><b>Assessment vs. existing analysis:</b> This element may fall under the paragraph "Responses to boundaries and limits" but isn't mentioned separately.</p> <p><b>Indication:</b> No clear indication can be given.</p>	<b>Change</b>	<b>Indication:</b> No clear indication can be given.
7. Response to limits creative process	<p><b>Assessment vs. existing analysis:</b> This element may fall under the paragraph "Responses to boundaries and limits" but isn't mentioned separately.</p> <p><b>Indication:</b> No clear indication can be given.</p>	<b>No change</b>	
8. Response to direction and instructions	<p><b>Assessment vs. existing analysis:</b> This element may fall under the paragraph "Responses to boundaries and limits" but isn't mentioned separately.</p> <p><b>Indication:</b> No clear indication can be given.</p>	<b>No change</b>	
9. Commitment and frustration tolerance	<p><b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Commitment and frustration tolerance". The relation between the scores and clients' preference in information processing strategies is described.</p> <p><b>Hinz, 2009, p. 199:</b> A client, who quits too quickly and</p>	<b>Change</b>	<b>Indication:</b> The score change towards working "Fully engaged, using different component functions". This may indicate well-functioning.

	<p>shows a low frustration level, may indicate an emphasis on the affective component. A client, who persists too long with a task by overthinking and overworking the artwork can demonstrate an overuse of the cognitive component and the underuse of the perceptual and affective component. Well-functioning of a person may be indicated when decisions are based on information from different components.</p> <p><b>Indication:</b> The client scored between "Persists" and "Staying to long with the task". This may indicate a slight overuse of the cognitive component and the underuse of the perceptual and affective component.</p>		
10. Risk taking	<p><b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Risk taking". The relation between the scores and clients' preference in information processing strategies isn't mentioned as such but it is advised to further question the client on possible risk avoidance or persisting with what is familiar.</p> <p><b>Indication:</b> No clear indication can be given.</p>	<b>Change</b>	<b>Indication:</b> No clear indication can be given.
11. Level of energy	<p><b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Level of energy". Described is the level of energy as well as the level of commitment. Both are described in the terms of high or low energy or commitment. Two extremes are specified in relation to possible components and also broad into context with well-functioning and psychopathology. The possible scores in the assessment differ as they range from "Bored" to "Excited" but may be descriptions of possible couplings of energy and commitment, which isn't further mentioned in this chapter.</p> <p><b>Indication:</b> No clear indication can be given.</p>	<b>Change</b>	<b>Indication:</b> No clear indication can be given.

12. Response to mistakes	<b>Assessment vs. existing analysis:</b> This element may be represented in the paragraph "Coping skills" but isn't mentioned separately.  <b>Indication:</b> No clear indication can be given.	<b>No change</b>	
13. Response to challenging media/processes	<b>Assessment vs. existing analysis:</b> This element may be represented in the paragraph "Coping skills" but isn't mentioned separately.  <b>Indication:</b> No clear indication can be given.	<b>Change</b>	<b>Indication:</b> No clear indication can be given.
14. Response to the unknown	<b>Assessment vs. existing analysis:</b> This element may be represented in the paragraph "Coping skills" but isn't mentioned separately.  <b>Indication:</b> No clear indication can be given.	<b>Change</b>	<b>Indication:</b> No clear indications can be given.
<b>3. Stylistic or Expressive Elements of the Final Art Product</b>			
15. Developmental level	<b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Developmental level". The scores focus on if the client is at an age appropriate stage in graphic development and possible sign of interfering conditions or resistance towards the art process rather than specifying a certain preference in information processing.  <b>Indication:</b> No clear indication can be given.	<b>No change</b>	
16. quality of lines and forms	<b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Line and form quality". The scored elements describe different ways of drawing lines ranging from "Poor" to "Bold", whereas in Hinz' book only the process of form creation is described such as distorted or carefully shaped forms. An exception is the description of a poor line quality, which is associated with the kinesthetic component.  <b>Indication:</b> No clear indication can be given.	<b>Change</b>	<b>Indication:</b> No clear indication can be given.
17. use of space	<b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Use of space". The manner in which the client fills the space is put in	<b>Change</b>	<b>Indication:</b> The score changed to between "Moderate" and "More than ¾". This may indicate the use of more input from the affective component.

	<p>relation to different components, which isn't captured in the scores. The scores only focus on the amount of space that is used.</p> <p><b>Hinz, 2009, p. 202:</b> Most people use two-thirds of the page in visual expression. Using very little space and creating tiny figures would be indicative of greater perceptual information processing and lower affective expression. Greater use of space may indicate the overuse of the affective component.</p> <p><b>Contraindication:</b> The client scored "Moderate", which relates to the average score of most people using two-thirds of the page and shows a contraindication for the overuse of the affective or perceptual component.</p>		
18. color prominence	<p><b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Color use", the scores are partly mentioned but only one score of the use of color is related to affective input whereas the others are related to facets such as psychopathology rather than information processing.</p> <p><b>Indication:</b> No clear indication can be given.</p>	<b>Change</b>	<b>Indication:</b> No clear indication can be given.
19. color type	<p><b>Assessment vs. existing analysis:</b> This element may be represented in the paragraph "Color use" but isn't mentioned separately.</p> <p><b>Indication:</b> No clear indication can be given.</p>	<b>Change</b>	<b>Indication:</b> No clear indication can be given.
20. color fit	<p><b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Color use", in which the use of color is related to other facets such as internalizing and externalizing tendencies in behavior and cognitive impairment rather than information processing.</p> <p><b>Indication:</b> No clear indication can be given.</p>	<b>Change</b>	<b>Indication:</b> No clear indication can be given.
21. Level of integration	<p><b>Assessment vs. existing analysis:</b> This element may be represented in the paragraph "Organic indicator" but isn't mentioned separately. The description in the paragraph focusses on others facets such as</p>	<b>No change</b>	

	<p>cognitive impairment rather than a client's information processing.</p> <p><b>Indication:</b> No clear indications can be given.</p>		
22. Organization function	<p><b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Organizing functions". The relation between the scores and information processing pattern is described.</p> <p><b>Hinz, 2009, p.204:</b> An organization function represents the way a person typically gathers and processes information when forming images. In this section the preference or overuse and in some case underuse of each ETC component as well as the creative transition area of each level is described. Further information can be found on the pages 204 to 210 (Hinz, 2009).</p> <p><b>Indication:</b> The client worked in a form orientated and abstract manner, using different colors to methodical experiment with different shape variations. This may indicates preference of the perceptual component. Furthermore the client put down the different ink pots in a straight line next to her paper and followed the plan of using each color after each other, which may indicate the use of the cognitive component. The overuse of a certain component can't be indicated.</p>	<b>Change</b>	<p><b>Indication:</b> The client's image formation changed towards producing images of self-discovery, integrating the search for meaning with good problem solving skills, which indicates the creative transition area at the cognitive/symbolic level. Creative expression at this level would be associated with acceptance of new information about the self. Furthermore the client's scores now spread across different organizing processes, which may indicated movement towards well-functioning. The client made use of input from the kinesthetic and sensory component and the images seemed more emotionally impactful, which may indicate a slight shift from the dominance of the perceptual component towards the creative transition area of the perceptual/affective level.</p>
23. Content and symbolism	<p><b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Content and symbolism", which doesn't specify how to interpret or relate the determined content or symbols to a client's information processing strategies.</p> <p><b>Indication:</b> No clear indication can be given.</p>	<b>Change</b>	<p><b>Indication:</b> No clear indication can be given.</p>
<b>4. Verbal communication</b>			
24. Quality verbal comments	<p><b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Quality of verbal comments". Each of the possible scores is mentioned and related to a certain preference in information processing.</p>	<b>Change</b>	<p><b>Indication:</b> The client scored "Perceptual", between "Affective" to "Symbolic" and "Creative". Based on the observation that the client kept referring to formal elements of the final art product but also focused on the symbolic implications of her art-work and aha-moments of</p>

	<p><b>Hinz, 2009, p.211:</b> The corresponding possible verbal focus of clients is related to each ETC component. Further description can be found on the pages 211 to 212 (Hinz, 2009).</p> <p><b>Indication:</b> The client scored between "Perceptual" and "Cognitive". Based on the observation that the client focused on the description of steps involved in the planning and execution of the creation and the formal elements of the final art product, a focus towards the cognitive and perceptual component may be indicated.</p>		<p>realizing something new about herself or feelings she experiences in her daily life or during her childhood a shift towards using input from different components such as the symbolic and affective component in a more balanced fashion as well as the experience of the creative component may be indicated.</p>
25. Rate and volume of speech	<p><b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Rate and volume of speech". Even though it is mentioned that the rate and volume of speech can give clues of client's information processing strategies. The mentioned scores, with the exception of one, are only put in relation to psychopathology rather than client's information processing strategies.</p> <p><b>Hinz, 2009, p.212:</b> The score that is associated with a certain information processing strategy is "Slow and deliberate speech", which is seen to be indicative of using the cognitive component dominantly.</p> <p><b>Indication:</b> The client scored "Slow, deliberate speech", which may indicate the dominant use of the cognitive component.</p>	<b>No change</b>	
26. Logic displayed	<p><b>Assessment vs. existing analysis:</b> This element is represented in the paragraph "Logic displayed". The quality of logic displayed in speech is broad into context with cognitive impairment and psychopathology rather than client's information processing strategies.</p> <p><b>Indication:</b> No clear indication can be given.</p>	<b>No change</b>	

Figure H Content analysis ETC assessment pre- and posttest data



## Appendix D Analysis of content step 2

In the table in figure H the data that could be gathered through the content analysis in appendix C has been summarized in a numerical manner. The amount of the tested ETC assessment elements, the number through which the element can be recognized in the assessment sheet as well as the amount of indications, contraindication or no indication was possible is listed.

Categories of content analysis	Amount of tested elements	Assessed elements by number	Indication	Contra-indication	No indication possible
1. The tested element is mentioned in a paragraph in chapter 10 (Hinz, 2009) and all the scores from the assessment are also described and related to possible indications of clients information processing strategies	4	2. 9. 22. 24.	Amount: 4	-	-
			Change: 4		
			No change: 0		
2. The tested element is mentioned in a paragraph in chapter 10 (Hinz, 2009) and only one or a few scores from the assessment are described and related to possible indications of clients information processing strategies	6	1. 3. 4. 5. 16. 25.	Amount: 2	Amount: 3	Amount: 1
			Change: 1	Change: 1	
			No change: 1	No change: 2	
3. The tested element is mentioned in a paragraph in chapter 10 (Hinz, 2009) but the scores from the assessment are not mentioned or differ and the relation to clients information processing strategies is only made partly or not at all as the focus lays on other facets	7	10. 11. 15. 17. 18. 20. 26.	-	Amount: 1	Amount:6
				Change: 1	
				No change: 0	
4. Tested element isn't mentioned further a paragraph in chapter 10 (Hinz, 2009)	8	6. 7. 8. 12. 13. 14. 19. 21.	-	-	Amount:8
5. The tested element is mentioned in a paragraph in chapter 10 (Hinz, 2009) but for this element the description of the therapist rather than a score is asked. The possible analysis of the therapists description is not further mentioned or related to clients information processing strategies	1	23.	-	-	Amount: 1
Total score	26	26	6	4	16
Total score percentage	100%	100%	23%	15%	62%

Figure H Content analysis, second step of the analysis

## Appendix E Pre- and posttest Routine Outcome Monitoring

In the following the 4 K's analysis report, first of the pretest and secondly of the posttest, of the Routine Outcome Monitoring is shown in Dutch. Only the table of each scored category is depicted in order to protect the identity of the client. Relevant to this research are the tables "Klachten", which refers to the category "complaints", the comparison to the norm group "Normgroepen Klachten", and the second category "quality of life" referred to as "Kwaliteit van leven" and its comparison to the norm group "Normgroepen Kwaliteit van het leven" in the document below.

### Rapportage: 4 Ks v.4 (4KS\_v4)

4 Ks v.4 (Klachten)	
Schaal	Score Meting: 1
Angsten	3
Concentratieproblemen	2
Geheugenproblemen	2
Depressiviteit	4
Lichamelijke klachten	2
Prikkelbaarheid	2
Relatieproblemen	0
Zelfmoordgedachten of -pogingen	0
Eetstoornissen	3
(Neiging) uzelf (te) beschadigen	1
Seksuele problemen	0
Slaapproblemen	3
Verslavingen	0
Iets anders	0
Totaalscore Klachten	22

Normgroepen Klachten	
Totaalscore Klachten	Norm
<8	Zeer laag
8-11	Laag
12-15	Beneden gemiddeld
16-18	Gemiddeld
19-22	Boven gemiddeld
23-28	Hoog
>28	Zeer hoog

4 Ks v.4 (Kwaliteit van Leven (huidige meting))	
Schaal	Score
Invloed klachten op werk & activiteiten	9
Invloed klachten op sociale leven	9
Invloed klachten op leven met partner / gezin	6
Hoe gelukkig bent u de laatste maand?	3
Totaalscore Kwaliteit van Leven	2.25

**Normgroepen Kwaliteit van leven**

Totaalscore Kwaliteit van leven	Norm
<2.25	Laag
2.25-2.99	Beneden gemiddeld
3.00-3.99	Gemiddeld
4.00-5.5	Boven gemiddeld
>5.5	Hoog

**4 Ks v.4 (Kosten: dagen niet gewerkt (huidige meting))**

Schaal	Score
Aantal dagen niet gewerkt (laatste maand)	0

**4 Ks v.4 (Klanttevredenheid)**

Schaal	Score Meting: 1
Rapportcijfer	8
Rapportcijfer effect van behandeling	Ontbreekt
Rapportcijfer behandelaar/therapeut	Ontbreekt
Aanraden van onze instelling aan anderen	Ontbreekt
Totaalscore tevredenheid	Ontbreekt

Figure I Pretest 4 K's analysis report

## Rapportage: 4K's Vertalingen v2 (4K'S\_VERTALINGEN\_v2)

**4K's Vertalingen v2 (Klachten)**

Schaal	Score Meting: 1
Angsten	1
Concentratieproblemen	2
Geheugenproblemen	0
Depressiviteit	1
Lichamelijke klachten	2
Prikkelbaarheid	2
Relatieproblemen	1
Zelfmoordgedachten of - pogingen	0
Eetstoornissen	3
(Neiging) uzelf (te) beschadigen	0
Seksuele problemen	1
Slaapproblemen	1
Verslavingen	3
Iets anders	0
Totaalscore Klachten	17

**Normgroepen Klachten**

Totaalscore Klachten	Norm
<8	Zeer laag
8-11	Laag
12-15	Beneden gemiddeld
16-18	Gemiddeld
19-22	Boven gemiddeld
23-28	Hoog
>28	Zeer hoog

4K's Vertalingen v2 (Kwaliteit van leven (huidige meting))		
Schaal	Score	
Invloed klachten op werk en activiteiten	3	
Invloed klachten op sociale leven	3	
Invloed klachten op leven met partner / gezin	Ontbreekt	
Hoe gelukkig bent u de laatste maand?	4	
Totaalscore Kwaliteit van Leven	Ontbreekt	
Normgroepen Kwaliteit van leven		
Totaalscore Kwaliteit van leven	Norm	
<2.25	Laag	
2.25-2.99	Beneden gemiddeld	
3.00-3.99	Gemiddeld	
4.00-5.5	Boven gemiddeld	
>5.5	Hoog	
4K's Vertalingen v2 (Kosten: dagen niet gewerkt (huidige meting) )		
Schaal	Score	Totale bevolking
Aantal dagen niet gewerkt (laatste maand)	0	-
4K's Vertalingen v2 (Klanttevredenheid)		
Schaal	Score Meting: 1	
Rapportcijfer	8	
Rapportcijfer effect van behandeling	7	
Rapportcijfer behandelaar / therapeut	9	
Aanraden van onze instelling aan anderen	10	
Totaalscore tevredenheid	34	
4K's Vertalingen v2 (Kosten: dagen niet gewerkt (huidige meting) )		
Schaal	Score	Totale bevolking
Aantal dagen niet gewerkt (laatste maand)	0	-
4K's Vertalingen v2 (Klanttevredenheid)		
Schaal	Score Meting: 1 08-07-15	
Rapportcijfer	8	
Rapportcijfer effect van behandeling	7	
Rapportcijfer behandelaar / therapeut	9	
Aanraden van onze instelling aan anderen	10	
Totaalscore tevredenheid	34	

Figure J Posttest 4 K's analysis report

## Appendix F Client questionnaire

In the appendix F the questionnaire filled in by the client at the end of the four month art therapy treatment is shown. The handwritten document of the client has been digitalized for the purpose of this research.

Signs and symbols of figure K:



Client answers are indicated through a tick and/or orange color

**Client Questionnaire****Location: i-psy Amsterdam****Date: 24.06.2015**

The individual art therapy treatment and especially the decision-making process for the course of treatment were based on the Expressive Therapies Continuum (ETC) approach. In the beginning of the treatment you were given a short introduction of this theoretical framework and it was used as a reference point when deciding on the course of the treatment and for evaluation purposes. The questionnaire aims to explore the different experiences and preferences associated with art expression the client had during the art therapy treatment.

1. Now after four months of treatment do you prefer working with art material that have/offer...? *(Tick the correct answer)*  
 A: more fluid properties ☒ B: more resistive properties

Please elaborate your choice:

*I tend more to fluid because more fluid materials give me for the therapy the possibility to just to start and see what is going to happen, without having to think about it or have a plan.*

2. Now after four months of treatment do you prefer using art media and their corresponding visual manifestation to...?  
*(Tick the correct answer(s))*  
 A: release energy through movement  
 B: explore and experience different sensation ☒  
 C: differentiate and clarify forms and shapes  
 D: involve yourself with and express affect ☒  
 E: form concepts, solve problems, categorize or differentiate meaning of objective images  
 F: globally process input from sensory and affective sources or your own autobiography using symbolic expressions  
 G: none of the named above

Please elaborate your choice:

*I enjoyed it when I do art but not to make anything but sometimes just to stroke over the clay or sand. Not having to do anything gives me peace.*

3. Which of the different ways of engaging with art media, named in question 2, do you rather not engage in? *(Tick the correct answer.)*  
 A B C D E ☒ F

Please elaborate your choice:

*I tend to sit with my thoughts a lot and involve my cognition, so to work in art in a way where the cognition is strongly involved creates a lot of stress for me.*

4. Did your preference of which process to engage or rather not to engage in (question 2 and 3) change in regards to the beginning of the treatment?  
*(Tick the correct answer)*  
 A: Yes ☒ B: No

If yes, in which way?/ If no, would you elaborate?:

*I think it changed from the very beginning. I used to work very rarely with art materials because quickly my perfectionism kicks in. In the beginning I thought the therapist would tell me what to do and then I would do it. But I enjoyed I choosing the material and technique. It was difficult in the beginning because my thoughts made my frustrated when it didn't go the way I wanted it to but at the end I could just start with a material that if felt like working with, then saw what happens, which gave me space to experience what was there, listen to my intuition and to develop trust in the process.*

5. To what extend have you experienced the following processes when engaging with art media during the art therapy treatment over the last four months?

(Please tick the correct box indicating how often that experience occurred.)

	Very often	Often	Some-times	Rarely	Never
<b>Kinesthetic component function</b>					
- release of tension					<input checked="" type="checkbox"/>
- muscle relaxation					<input checked="" type="checkbox"/>
- self-soothing through rhythm and movement				<input checked="" type="checkbox"/>	
<b>Sensory component function</b>					
- discovering, valuing, expressing inner sensation		<input checked="" type="checkbox"/>			
- self-soothing through sensation (tactile, visual, olfactory)			<input checked="" type="checkbox"/>		
- matching internal and external sensation			<input checked="" type="checkbox"/>		
<b>Perceptual component function</b>					
- understanding relations between parts of a problem		<input checked="" type="checkbox"/>			
- changing point of view		<input checked="" type="checkbox"/>			
- take another person's perspective					<input checked="" type="checkbox"/>
- perceiving order out of chaos of emotions			<input checked="" type="checkbox"/>		
- containing emotion (reducing stress)					<input checked="" type="checkbox"/>
<b>Affective component function</b>					
- identifying/ understanding one's own emotions (fear reduction)		<input checked="" type="checkbox"/>			
- understanding other people's emotions (fear reduction)					<input checked="" type="checkbox"/>
- appropriate and creative expression of emotions			<input checked="" type="checkbox"/>		
- soothing of emotions without negative acting out					<input checked="" type="checkbox"/>
<b>Cognitive component function</b>					
- Increasing planning and problem solving abilities			<input checked="" type="checkbox"/>		
- Support greater decision making skills		<input checked="" type="checkbox"/>			
- Promote cause and effect thinking					<input checked="" type="checkbox"/>
<b>Symbolic component function</b>					
- finding personal meaning by expressing symbols					<input checked="" type="checkbox"/>
- acceptance of previously detested, disowned or shadow parts of the self			<input checked="" type="checkbox"/>		
- deepening personal meaning through understanding universal themes		<input checked="" type="checkbox"/>			
<b>Creative component function</b>					
- feeling of satisfaction, pride and meaning are gained	<input checked="" type="checkbox"/>				
- connection with spiritual self	<input checked="" type="checkbox"/>				
- connection with creative self	<input checked="" type="checkbox"/>				
- "aha" moments of self-realization or "ahh" moments of perfect self-expression		<input checked="" type="checkbox"/>			

6. What was your favorite process/ media you engaged with during the art therapy treatment?

*The second clay work, in that work I could feel that if I give support (or structure) I need with one hand to the form of the clay, it gives me the room to let my perfectionistic part be without being overruled by it.*

7. What was your least favorite process/ media you engaged with during the art therapy treatment?

*I can't really say that I have a least favorite process.*

Figure K Client questionnaire scored

## Appendix G      Therapy record sheet

Figure L depicts the sheet that has been designed to record the choices of the therapist in the therapy approach as well as the observation that were made within the 16 sessions of art therapy treatment. The records of the 16 sessions will be presented on request.

Approach to therapy		Date:
<i>Tick the relevant box(es)</i>		<i>Annotations</i>
Task(s) and material(s) are chosen by the client		
Client is presented with a selection (based on ETC) of art materials from which he/she can choose		
Therapist chooses task(s) and material(s) based on the client's preferred way of information processing		
Therapist suggests implementation or use a new material to provoke a new way of information processing		
Therapist offers a new task to provoke a new way of information processing		
Therapist focusses questions on client's preferred way of information processing		
Therapist shifts focus of questions to provoke a new way of information processing		
		<i>Observation</i>
Media and it's properties		
Interaction with art medium		
Stylistic en expressive elements of art product		
Verbal communication		

Figure L      Record sheet of approach to therapy and observation