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# Pre-Therapy Process and Outcome: A review of research instruments and findings

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**Abstract.** Pre-Therapy aims at stimulating *psychological contact* in persons suffering psychosis. We offer a review of Pre-Therapy research instruments and findings. The *Pre-Therapy Rating Scale* (PTRS, Prouty, 1994) and the *Evaluation Criterion for the Pre-Therapy Interview* (ECPI, Dinacci, 1997) have been the two most frequently used instruments for the assessment of psychological contact. PTRS scores seem more reliable than ECPI scores, but all manuals need revision. Particular attention is needed for the rating of nonverbal behavior. A preliminary evaluation of the structure of the PTRS indicates that it is two-dimensional rather than three-dimensional. The PTRS and the ECPI can be regarded as measures of communicative contact but also as measures of the meaningfulness of communication. Preliminary outcome studies suggest that pre-post and comparative effect sizes of Pre-Therapy are large for communicative contact, but the number of participants in these studies is generally low, as is the number of systematic case studies.

**Keywords:** Pre-Therapy, psychological contact, schizophrenia, psychological instruments, therapeutic outcome

**Prä-Therapie-Prozess und Outcome: Ein Überblick über Forschungsinstrumente und Ergebnisse**  
Prä-Therapie zielt darauf ab, bei Menschen, die an einer Psychose leiden, *psychologischen Kontakt* anzuregen. Wir geben einen Überblick über Instrumente und Resultate der Prä-Therapie-Forschung. Die *Pre-Therapy Rating Scale* (PTRS, Prouty, 1994) und das *Evaluation Criterion for the Pre-Therapy Interview* (ECPI,

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Dinacci, 1997) waren die beiden meist verwendeten Instrumente, um den Grad an psychologischem Kontakt zu erheben. PTRS-Scores scheinen verlässlicher zu sein als ECPI-Scores, aber alle Manuale benötigen Überarbeitung. Das Rating zu non-verbalem Verhalten braucht besondere Aufmerksamkeit. Eine erste Auswertung der Struktur des PTRS deutet darauf hin, dass sie eher zwei- als dreidimensional ist. PTRS und ECPI kann man sowohl als Messinstrumente für kommunikativen Kontakt heranziehen, als auch als Messinstrumente dafür, wie bedeutsam die jeweilige Kommunikation ist. Erste Outcome-Studien legen nahe, dass Prä-Post- und vergleichende Effektgrößen zu Prä-Therapie bezüglich kommunikativen Kontakts hoch sind, aber die Zahl der Teilnehmer an diesen Studien ist im allgemein klein, ebenso wie es überhaupt die Zahl systematischer Fallstudien ist.

### **Procesos y resultados de la Pre-terapia: Una revisión de los instrumentos y hallazgos de la investigación**

La Pre-terapia apunta a estimular el *contacto psicológico* en las personas que sufren de psicosis. Ofrecemos una revisión de los instrumentos y hallazgos de investigación de la Pre-terapia. La escala de clasificación de la Pre-terapia (PTRS, Prouty, 1994) y el criterio de evaluación para la entrevista de Pre-terapia (ECPI, Dinacci, 1997) han sido los dos instrumentos más frecuentemente utilizados para evaluar el contacto psicológico. Los resultados del PTRS parecen ser más confiables que los resultados del ECPI, pero todos los manuales necesitan revisiones. Se necesita prestar especial atención a la clasificación del comportamiento no verbal. Una evaluación preliminar de la estructura del PTRS indica que es bi-dimensional y no tri-dimensional. Tanto el PTRS como el ECPI pueden ser considerados como instrumentos para medir el contacto comunicativo pero también como evaluación de cuán significativa es la comunicación. Los resultados preliminares de los estudios sugieren que la importancia de los efectos comparativos previos y posteriores de la Pre-terapia son significativos para el contacto comunicativo, pero el número de participantes en estos estudios es generalmente escaso, al igual que el número de casos de estudio sistemático.

### **Le processus de la Pré-Thérapie et ce qui en résulte : Une revue des instruments de recherche et des résultats**

La Pré-Thérapie vise à stimuler le *contact psychologique* chez des personnes qui souffrent de psychose. Nous proposons une revue des instruments de recherche de la Pré-Thérapie et des conclusions tirées de ces recherches. *L'Echelle d'Évaluation de la Pré-Thérapie* (PTRS, Prouty, 1994) et les *Critères d'Évaluation pour l'Entretien en Pré-Thérapie* (ECPI, Dinacci, 1997) sont les deux instruments les plus utilisés pour l'évaluation du contact psychologique. Les résultats du PTRS semble être plus fiables que ceux de l'ECPI, mais en fait tous les manuels auraient besoin d'être révisés. L'évaluation du comportement non-verbal requiert une attention toute particulière. Une évaluation préliminaire de la structure du test PTRS indique qu'il mesure deux facteurs, plutôt que les trois facteurs attendus. Les tests PTRS et ECPI peuvent être utilisés comme des mesures de contact communicatif mais aussi comme des mesures du sens de la communication. Des études de résultats préliminaires suggèrent que la Pré-Thérapie facilite l'amélioration du contact communicatif chez les clients : on constate un effet d'amélioration du contact communicatif important pour les mesures prises avant et après un travail de Pré-Thérapie, ainsi que pour les mesures comparant le contact communicatif des patients qui ont bénéficié de la Pré-Thérapie avec ceux qui n'en ont pas bénéficié. Cependant le nombre de ces études est réduit, ainsi que le nombre de patients dans chaque étude de cas.

### **Processo e resultado na Pré-Terapia: Uma revisão dos instrumentos de investigação e de descobertas**

A Pré-Terapia pretende a estimulação do contacto psicológico em pessoas que sofrem de psicose. Propomos uma revisão dos instrumentos de investigação e das descobertas da Pré-Terapia. As escalas *Pre-Therapy Rating Scale* (PTRS, Prouty, 1994) e *Evaluation Criterion for the Pre-Therapy Interview* (ECPI, Dinacci, 1997) têm sido os dois instrumentos mais utilizados na avaliação do contacto psicológico. Os *scores* da PTRS parecem mais fiáveis do que os da ECPI, se bem que ambos os manuais carecem de revisão. Há

que prestar particular atenção à avaliação do comportamento não-verbal. Uma avaliação preliminar da estrutura da PTRS indica que esta é bidimensional e não tridimensional. A PTRS e a ECPI podem ser consideradas medidas do contacto comunicacional, bem como do significado da comunicação. Estudos preliminares sugerem que a comparação entre antes e depois da Pré-Terapia, assim como a comparação entre efeitos da mesma é significativa para o contacto comunicativo. Contudo, o número de participantes nestes estudos é geralmente reduzido, assim como o é o número de estudos de caso sistematizados.

#### プリセラピーのプロセスと効果：研究に使用する測定尺度と結果に関するレビュー

要約： プリセラピーの狙いは精神病者の心理的接触感を刺激することにある。ここで私たちはプリセラピーに用いられる尺度と研究結果をまとめ、考えてみたい。心理的接触の程度を測定するのに最もよく用いられているのはプリセラピー評価スケール(PTRS; Prouty, 1994)とプリセラピー面接評価基準 (ECPI; Dinacci, 1997) である。PTRSの得点はECPIよりも信頼性が高いようであるが、いずれにしろ全てのマニュアルの改訂が必要である。

特に注意が必要なのは非言語行動の評価の場合である。予備調査によるとPTRSは3次元ではなくむしろ2次元構造をもつ尺度である。PTRSとECPIは共に相互交流の接触の程度を測る尺度とも言えるが、一方で、両者は共にその相互交流の意味深さを測る尺度とも言えよう。プレーポスト調査および比較調査によると、プリセラピーは相互交流的接触を高める上でその効果の大きいことが示されているが、研究に参加した被験者の数は全般に、事例研究で取り扱われた事例の数程度に少ない。

## INTRODUCTION

Pre-Therapy is a client-centered treatment to prepare psychotic persons, often with profound intellectual limitations, for regular psychotherapy (Prouty, 1994; Prouty, Van Werde, & Pörtner, 1998/2002). Elements of Pre-Therapy have also been applied to other populations; for example persons with a pervasive developmental disorder (Peters, 1999; Pörtner, 1996/2000), or dementia (Van Werde & Morton, 1999; Dodds, Morton, & Prouty, 2004). The theory of Pre-Therapy evolved from Rogers' suggestion that psychological contact is the first condition of a therapeutic relationship. Rogers (1957) described psychological contact in the following manner: "All that is intended by this first condition is to specify that two people are to some degree in contact, that each makes some perceived difference in the experiential field of the other" (p. 96). Rogers scarcely explained or elaborated this concept. Even though the term clearly denotes intersubjectivity, there is considerable confusion about its scope (Sanders & Wyatt, 2002).

### Psychological contact and contact functions

Prouty (1994) was the first to fill this theoretical gap (Sanders & Wyatt, 2002) by introducing two important ideas born from his clinical work. First, whereas Rogers' focus was on interaction between persons, Prouty began to systematically focus on awareness within persons. Psychological contact in the sense used by Prouty does not necessarily require two individuals. Psychological contact may also involve interaction with objects, feelings, etc. (Prouty, 1994).

Second, Prouty has proposed three domains of psychological contact: reality, affect, and communication, each marked by its related *contact function*. Reality contact is awareness of people, places, things, and events. Affective contact is awareness of distinct moods, feelings, and emotions. Communicative contact is the symbolization of reality contact and affective contact to others. Therefore, in Prouty's terms, psychological contact as defined by Rogers is reconceptualized as two persons in a simultaneous and mutual reality contact. Communicative contact is an overt response that is dependent on the occurrence of other contact functions (either reality or affective). Although Prouty's work is well known within the broader field of client-centered counseling and psychotherapy, Rogers' original conceptualization is still prevalent. This is evident in Wyatt and Sanders (2002), who presented a collection of current views on psychological contact in which most authors presented a framework of dyadic intersubjectivity, elaborated with some elements of Pre-Therapy.

### Contact reflections

Various studies of psychotherapy have demonstrated relationships between therapist in-session behavior and client processes (Hill & Lambert, 2003). In Pre-Therapy, therapists employ *contact reflections* to stimulate clients' contact functions (Prouty, 1994; Prouty et al., 2002). Contact reflections are, in the language of Buber (1964), a pointing at the concrete. They are highly literal and duplicative reflections of the client's verbal and sub-verbal process. Thus, they meet the client at their own level of expression and experiencing (Prouty, 1994; Peters, 2005). There are five basic types of contact reflection: (1) *Situational Reflections*, for example, "Mary is sitting on the floor"; (2) *Facial Reflections*, e.g., "You look sad", or more concretely "There are tears in your eyes"; (3) *Word-for-Word Reflections*, as when a therapist responds to a client saying, "The (unintelligible) is moving around the (unintelligible)," by reflecting the intelligible words or sentences; (4) *Body Reflections*, e.g., "Your arm is in the air," or, more concretely, the therapist reflecting by putting his or her own arm in the same position; and (5) *Reiterative Reflections*, that is, repetitions of any contact reflection that has affected client expression or experiencing.

Peters (2005) has provided a viable explanation for the efficacy of contact reflections. Infants are born with a propensity to discriminate and respond to stimuli that are similar to contact reflections (Fonagy, Gergely, Jurist, & Target, 2002). This propensity exists from birth and persists throughout life, to some extent even in those who are later diagnosed with an autistic disorder (Beadle-Brown & Whiten, 2004). This partially intact but persistent propensity may explain why children and adults with impaired contact functions remain sensitive to contact reflections.

### Pre-Therapy research

Many practitioners find Pre-Therapy a powerful method for working with contact-impaired clients. Caregivers who begin to integrate elements of Pre-Therapy in their work experience a decrease of behavior problems in their patients (Ondracek, 2004). Over the last thirty

years, a handful of independent studies have provided preliminary evidence that supports these clinical reports. As far as we know, these are the only studies of psychological contact to date and there is a clear need for more research on theories of psychological contact and their applications (Sanders & Wyatt, 2002). In support of future studies, we present a thorough review of Pre-Therapy research instruments and findings. We present: (1) an overview of instruments that have been used in Pre-Therapy studies; (2) a review of their validity; and (3) reliability; and (4) a summary of Pre-Therapy outcome findings.

## MEASURES OF CONTACT

From the start, Pre-Therapy researchers have measured contact functions by observing clients' behavior in interaction with others. The term *contact behavior* refers to communication that demonstrates psychological contact (Prouty, 1994). Pre-Therapy researchers thus screen clients' verbal and nonverbal expressions for markers of contact, alternatively conceived of as *client contact responses* (Hinterkopf, Prouty, & Brunswick, 1979; Prouty, 1990) or *communicative signs* (Dinacci, 1997). Occasionally, researchers have tried to observe the use of *contact reflections*. Four known measures of client contact behavior presently exist.

### The Pre-Therapy Rating Scale

Hinterkopf et al. (1979) developed the first version of the Pre-Therapy Rating Scale (PTRS-1) to assess client contact behavior in semi-structured interviews. The interviewer follows the Pre-Therapy Questionnaire, asking items such as: "What did you have for lunch today?" or "How do you feel about the doctor on your ward?" Raters observe the interview twice, once from behind a one-way screen and then a second time on videotape. One scoring unit is a client's complete response to one question in the interview. Each response is rated on four categories: (1) Communication of Basic Reality; (2) Emotive Words; (3) Emotive Words with Corresponding Affect; and (4) Failure to Communicate Basic Reality and Affect. Each category is defined by a set of markers and the score for that category is the number of responses containing at least one marker. For example, an explicit reference to a concrete person is a marker for Communication of Basic Reality. If this marker is detected in a response, the observer adds one to Communication of Basic Reality. The maximum score for each category is the number of questions in the interview. The PTRS-1 does not provide a total score.

Many of the contact markers defined in the PTRS-1 were later used by Prouty (1990) to develop a second version of the PTRS (PTRS-2) (De Vre, 1992). The contact response categories in this scale are: (1) Reality defined as references to people, places, things, and events; (2) Affect defined as the symbolization of feelings, moods, and emotions; (3) Social Communication defined as the use of meaningful language; and (4) Psychotic Communication. The last category includes classic types of psychotic speech, as for example echolalia. This category developed from the early use of Pre-Therapy with psychotic

populations. Researchers have either questioned its relevance (Brenner, 2006), or not used it at all. Prouty (1990) abandoned the procedure of a semi-structured interview for the PTRS-2 and instead observed clients' communication during Pre-Therapy sessions. Transcripts of sessions, sometimes annotated by the therapist or an observer, are divided in phrases—groups of words that grammatically function as a single unit. The PTRS-2 better captures the frequency of contact signs, as raters count incidences of contact signs in every phrase. For example, the phrase “I am Jim” scores two on Reality, for both the pronoun “I” and the name “Jim” refer to a concrete person. Markers can also be syntactic; for example words and full sentences are markers of Social Communication. Raters also look for markers in therapist responses and transcript annotations, particularly for the Affect category. An emotion word produced by the client is a marker of Affect, but so is a remark made by the therapist about the client's facial expression, or an observer's comment about an emotionally significant gesture. Category scores have virtually no maximum. A PTRS-2 total score is generally not calculated.

### Evaluation Criterion for the Pre-Therapy Interview

Dinacci (1997) found the PTRS-2 unsatisfactory for use with less verbal clients, as it relies heavily on verbal responses. He developed an alternative for evaluating contact functions in verbally disorganized clients, a rating scale for use with videotapes called the Evaluation Criterion for the Pre-Therapy Interview (ECPI). Although the ECPI can be used with the Pre-Therapy Interview, the level of verbal disorganization in many clients precludes structured interview techniques (Dinacci, 1997; Lunardi, 2002). A scoring unit is defined as client behavior immediately following a stimulus (e.g., a speaker turn) of the therapist or interviewer. Any *change* in the client's behavior following a stimulus is considered a marker of contact. Change can be anything from a shift in posture to a verbal utterance, or even silence in a client who otherwise has not stopped talking. The assumption is that behavior changes when it is affected by the stimulus. Scoring units demonstrative of change are termed *client responses*. The ECPI provides six indices of contact behavior: (1) The Reaction Index is a measure of general client reactivity. It is the percentage of client responses relative to the total number of scoring units. (2) The Expressive Modality Index evaluates whether client responses are meaningfully related to the stimulus and the extent to which these responses are verbal. (3) The Verbal Expressiveness Index evaluates whether subsequent verbal responses are meaningfully interrelated. (4) The Coherence Index is calculated as the percentage of time that the client performed nonverbal behavior in coordination with verbal behavior. (5) The Physical Expressiveness Index measures the percentage of contact responses that involve touch, either as a stimulus from the therapist or a response from the client. (6) The General Interview Index (GII) is the mean of all previous indices. These indices have values between 0 and 100, with higher values indicative of more or more important markers of contact. Brenner (2006) has noted that the ECPI only accounts for client responses, not for client initiations of communication. She proposed additional measures of client contact behavior that relate to Dinacci's Physical Expressiveness Index. She counted initiations of eye contact by the client, and registered duration of client initiated touch and eye contact.

### Contact reflections

The English PTRS-2 contains brief instructions for the observation of therapist contact reflections, but these have never been used. Brenner (2006) developed her own guidelines for raters, while Schellevis (2006) let therapists categorize their own responses. Brenner also proposed that physical contact initiated by the therapist is relevant for Pre-Therapy and she has measured the duration of such events.

### Conclusions

Both the PTRS-1 and 2 and the ECPI can be used to assess client contact behavior during a semi-structured interview or a Pre-Therapy session. Interactions are registered so that raters can detect markers of contact in client behavior. This typically requires painstaking, lengthy work (Strens, 2005; Van den Mooter, 2006). Scoring units vary from one complete reply or speaking turn within an interview (PTRS-1), to one grammatical unit (PTRS-2), to all client behavior in a session (ECPI). The ECPI takes into account almost all nonverbal client behaviors, whereas the PTRS-2 takes into account only those with a clear affective connotation.

### RELIABILITY

Inter-rater reliability is the extent to which different raters agree when evaluating a scoring unit. Raters may not perfectly agree on the frequency of contact behavior pertaining to one scoring unit, but perfectly agree that one scoring unit displays more contact behavior relative to another.

### Pre-Therapy Rating Scale

Brenner (2006) and Van den Mooter (2006) were both positive about the clarity of the PTRS-2 manual provided by De Vre (1992), but found that it lacked sufficient guidelines for the detection of nonverbal contact markers in the Affect category. We have calculated our own estimates of inter-rater agreement, based on the data set from Brenner (2006) and descriptive statistics reported in the literature. Brenner (2006) and an independent rater applied the PTRS-2 on a ten-minute recording of a Pre-Therapy session with a 66-year-old male inpatient with mild intellectual disability. We calculated intraclass correlations between the raters (one-way random effect), based on the score for each category for every half minute. Agreement between the raters was low for Affect ( $r = .07$ ), medium for Reality ( $r = .48$ ) and high for Communication ( $r = .81$ ). Clearly, PTRS-2 scores of one rater can differ greatly from the scores of another rater, particularly for the Affect scale. Alternatively, evidence for high inter-rater reliability can be drawn from Prouty's (1994, p. 46) report on a single session with a young woman with schizoaffective and intellectually limited processes. He reported PTRS-2 scores for the beginning, middle and end of that session (sampled at

percentiles 1–20, 40–60, 80–100). We calculated an intraclass correlation for each of the categories and all correlations were almost perfect ( $r > .96$ ). Intraclass correlations were also very high for each of the separately reported markers, including the nonverbal markers ( $r > .96$ ). Visual inspection of the data reported by Prouty (1994, p. 46; Table 1) also suggests that raters can reach high levels of relative agreement when scores are calculated across multiple minutes. These observations suggest that Brenner's (2006) and Van den Mooter's (2006) suspicion of nonverbal markers in the PTRS-2 may not be totally warranted.

Three case studies have reported session scores from two to three raters, aggregated over months to obtain a session-independent estimate of contact (Table 2). Prouty (1990) reported on 100 Pre-Therapy sessions with a girl with intellectual disability, alternately diagnosed as schizophrenic, brain-damaged or autistic. Prouty and Cronwall (1990) have reported on the case of a depressed, nonverbal boy, with a Stanford-Binet IQ of 13. This client received 200 sessions from the same therapist over a period of two years. For both cases, PTRS-2 scores were reported per minute and averaged across all sessions in one year. Prouty (1994, p. 45) presents the treatment of a schizophrenic male with profound intellectual limitations. He reported means of category scores per session over three 3-month periods. Visual inspection of the data provided in these case studies suggests that raters within each study have reached high levels of agreement on all PTRS-2 categories (see Table 2). As raters within each study appear to have reached high levels of agreement on Affect, reported doubts about the detection of markers for the Affect scale may reflect differences between interpretations of the manual rather than difficulties in rating Affect reliably per se.

### Evaluation Criterion for the Pre-Therapy Interview

Brenner (2006) and Van den Mooter (2006) were each independently unsatisfied with the vague definitions of *therapist stimuli* and *client responses* in the manual of the ECPI. Brenner (2006) has assessed ECPI reliability with a ten-minute recording of a Pre-Therapy session (see above). She reported moderate absolute agreement for the detection of client responses in scoring units ( $k = .59$ ), which is needed to calculate the Reaction Index. Absolute agreement was lower for the qualifications of client responses that are needed to calculate each of the remaining indices ( $k < .36$ ). To test how well the raters agreed on the actual ECPI indices (range 0 to 100), we calculated intraclass correlations for each half-minute segment. We observed that raters agreed almost perfectly for the Physical Expressiveness Index ( $r = .93$ ), and moderately for each of the other indices ( $.35 < r < .65$ ). In all, preliminary findings of inter-rater reliability with the ECPI are promising, but the rating procedure needs improvement. In contrast to this, Brenner (2006) has established substantial reliability for registered occasions of eye contact and touch that were initiated by the client ( $k = .80$ ).

### Contact reflections

Brenner (2006) developed her own system to categorize contact reflections. Her system includes six categories: Situational Reflections, Word-for-Word Reflections, and verbal and

nonverbal Facial and Body Reflections. She and an independent rater categorized the contact reflections in a 10-minute Pre-Therapy segment of a session with a 35-year-old female with mild intellectual disability and a pervasive developmental disorder. Brenner (2006) estimated inter-rater agreement as if the categories were mutually exclusive and the agreement was substantial ( $k = .78$ ). However, these categories were actually not mutually exclusive. Therefore we have aggregated the data of Brenner (2006) into counts for half-minute segments and calculated intraclass correlations (one-way random effect). We observed high relative inter-rater agreement for each of the four verbal reflections ( $r > .93$ ) but moderate to low agreement for the nonverbal body and facial reflections ( $r = .76$ ;  $r = .54$ ).

**Table 1**

*Contact response counts for PTRS-2 categories, with discrimination between clients, raters and phase of session*

Study	Client	Phase	Rater	Reality	Affect	Social Communication
Prouty, 1994, p. 46	4	start	7	22	4	9
	4	start	8	24	3	12
	4	middle	7	105	12	57
	4	middle	8	96	13	53
	4	end	7	61	8	35
	4	end	8	51	8	25
Van den Mooter, 2006 <sup>a</sup>	5	min. 1–5	9	5	3	8
	5	min. 6–10	9	0	1	0
	5	min. 11–15	9	2	5	2
	5	min. 16–20	9	4	3	3
	5	min. 21–25	9	3	2	3
	5	min. 26–30	9	8	1	8
	5	min. 31–35	9	6	2	4
	5	min. 36–40	9	0	0	0
	5	min. 41–45	9	4	3	5
	6	min. 1–5	9	0	12	0
	6	min. 6–10	9	0	13	0

<sup>a</sup>Response counts for clients 5 and 6 are calculated from the data set produced by Van den Mooter (2006)

**Table 2**

*Average contact scores for PTRS-2 categories, with discrimination between clients, raters, and phase of treatment*

Study	Client	Phase	Rater	Reality	Affect	Social Communication
Prouty, 1990 <sup>a</sup>	1	year 1	1	1.05	0.22	1.33
	1	year 1	2	1.03	0.23	1.70
	1	year 2	1	6.46	1.13	3.52
	1	year 2	2	8.20	1.12	3.77
Prouty & Cronwall, 1990 <sup>b</sup>	2	year 1	1	0.21	–	0.33
	2	year 1	3	0.22	–	0.37
	2	year 1	4	0.20	–	0.30
	2	year 2	1	1.18	–	1.82
	2	year 2	3	0.87	–	1.87
	2	year 2	4	1.15	–	1.78
Prouty, 1994, p. 45 <sup>b</sup>	3	months 1–3	5	59.00	27.00	71.00
	3	months 1–3	6	48.00	27.00	77.00
	3	months 4–5	5	149.00	11.50	110.00
	3	months 4–5	6	175.00	11.50	100.00
	3	months 6–9	5	379.00	17.00	214.00
	3	months 6–9	6	446.00	13.00	225.00

<sup>a</sup>Number of contact responses per minute per session, averaged over one year

<sup>b</sup>Number of contact responses per session, averaged over three months

## Conclusions

No reliability data was found concerning the PTRS-1. Some evidence of reliability for coding with the PTRS-2 and ECPI is emerging. For reliability of these measures to improve, the manuals of the PTRS-2 and particularly the ECPI are in need of elaboration. In particular, they should provide more information about the detection of nonverbal markers. Continuing evaluation of reliability should be part of any study that uses the ECPI or the PTRS. So far, researchers of contact behavior have mainly assessed inter-rater reliability, but other types of reliability (test-retest, inter-item) should also be evaluated.

## CONSTRUCT VALIDITY

Construct validity refers to whether an instrument measures what it is supposed to measure. Reality contact and affective contact refer to the *awareness* of people/places/things and emotions respectively, while communicative contact has been defined consistently (Prouty, 1994; Prouty et al., 1998/2002) as the *symbolization* of contact with reality and affect. The PTRS-1 and 2 and the ECPI are used to evaluate clients' communicative behavior. As such, they are direct operationalizations of communicative contact, from which reality and affective contact are inferred. We have explored how the instruments under discussion relate to this construct. Where possible we have also examined whether the subscales within each instrument actually measure different constructs. We offer a similar discussion of the detection and categorization of contact reflections.

### Pre-Therapy Rating Scale

The authors of the PTRS-2 have consistently referred to its categories as contact dimensions (De Vre, 1992; Prouty, 1994; Prouty et al. 1998/2002), but dimensionality of the instrument has never been assessed. The similarity between contact functions and PTRS-2 categories can be misleading, as all categories primarily measure one function: communicative contact. The PTRS-2 does not reflect the three-function structure that is theorized by Prouty. In fact, there are two indications that the PTRS-2 measures two rather than three elements of contact. First, the Social Communication subscale is dependent on the Reality subscale. This is because both English (Prouty, 1990) and Dutch (De Vre, 1992) manuals state that contact responses in the Social Communication category should demonstrate at least one clear reference to reality. Second, the Affect category may confound measures of therapist or observer behavior and client behavior. This is because, unlike the verbal markers of the other categories, the nonverbal markers of Affect can be identified in therapist responses or observer notes.

To empirically assess the relation between contact response categories, we merged the data from four case studies (Prouty, 1990, 1994, p. 45, 1994, p. 46; Prouty & Cronwall, 1990) and then further extended this data set with contact response counts for five-minute segments from a data set provided by Van den Mooter (2006). Van den Mooter (2006) and Strens (2005) independently coded the two videotaped sessions described in Peters (1996) and Van Werde and Willemaers (1993). Based on these data, Van den Mooter constructed a definitive rating of the sessions. Our final merged data set is presented in Table 1 and 2. Data cannot be compared across studies in absolute terms, because some values are absolute counts whereas others were averaged over a number of minutes or sessions. Therefore we first converted the data to standard distributed values, using the means and standard deviations within each study (Prouty, 1994, p. 45, 1994, p. 46; Van den Mooter, 2006) or across studies (Prouty, 1990; Prouty & Cronwall, 1990). A two-tailed test of the Pearson correlation between Reality and Social Communication suggests that these measures are highly associated ( $r = .94, n = 33, p < .001$ ). On the other hand, Affect was not significantly associated with either category ( $r = .05, n = 27, n.s.$ ;  $r = .05, n = 27, n.s.$ ). These results offer preliminary support for a two-dimensional structure of the PTRS-2.

### Evaluation Criterion for the Pre-Therapy Interview

Although developed for Pre-Therapy research, the ECPI does not clearly reflect Prouty's theory of the contact functions (Dinacci, 1997; Brenner, 2006). It includes no explicit evaluation of the symbolization of reality or affective contact. Neither has the relation between its indices been evaluated. As this instrument primarily measures meaningfulness of communication, it is essentially a measure of language pragmatics. Pragmatic skills are defined as the ability to convey and understand intended meanings (Adams & Lloyd, 2005; Frith, 1993). They are distinguished from phonological, lexical and syntactic skills. Brenner (2006) has argued that communicative contact should not be limited to verbal behavior, and Kelly (2001) has similarly argued that nonverbal exchanges of meaning are the basis of language pragmatics. The ability to engage in meaningful communication with others is traditionally studied in the field of developmental linguistics (e.g., Adams, 2001), but also in the context of schizophrenia (e.g., Linscott, 2005), autism (e.g., Eales, 1993), and gerontology (e.g., Intrieri & Morse, 1997).

Van den Mooter (2006) has recently evaluated the association of contact behavior with language pragmatics using the PTRS-2, the ECPI and the Analysis of Language Impaired Children's Conversation (ALICC) (Bishop, Chan, Adams, Hartley, & Weir, 2000). Two-step cluster analyses were conducted separately for verbal utterances ( $n = 75$ ) and annotations of nonverbal behavior ( $n = 597$ ) observed in two videotaped Pre-Therapy sessions: one with a nonverbal female with profound intellectual limitations (Peters, 1996) and one with a verbal, schizophrenic female (Van Werde & Willemaers, 1993). The resulting clusters differentiated strongly between the cases, between subscales of the ALICC, and between various markers of contact. This finding supports the assumption that measures of contact are in fact measuring the ability to convey and understand meaning.

### Contact reflections

Brenner (2006) categorized therapists' contact reflections in seven 10-minute segments of Pre-Therapy sessions with adults with intellectual disability. Brenner constructed contingency tables for the presence of client contact behavior and therapist contact reflections in all five-second segments in her data set. She tested the likelihood of client contact behavior co-occurring with therapist contact reflections using the  $\phi$  coefficient. Incidences of contact reflections and contact behavior were contingent in all therapy sessions, supporting the assumption that therapist contact reflections and client contact behavior are related.

Schellevis (2006) attempted to assess Prouty's typology of contact reflections using the videotaped sessions reported by Peters (1996) and Van Werde and Willemaers (1993). For this purpose she had the therapists categorize their own contact reflections. She further rated therapist interventions using the PTRS-2, the Hill Counselor Verbal Response Category System (HCVRCS) (Hill, 1986) and the ALICC. A two-step cluster analysis revealed two clusters that differentiated strongly between the cases, between various markers of contact, and between subscales of the HCVRCS and the ALICC. A two-step cluster analysis

differentiated between various markers of contact and between subscales of the linguistic instruments, which again suggests that measures of contact are actually measuring the ability to convey and understand meaning. Additionally, these clusters differentiated between situational and word-for-word reflections, applied to a different extent in each case. This offers preliminary evidence for the validity of Prouty's (1976) typology of contact reflections, and it suggests that different types of contact reflection require different pragmatic skills.

### Conclusions

In theory, the PTRS and the ECPI primarily measure communicative contact, but these instruments may actually assess the ability to convey and understand meaning. The PTRS-2 seems to measure two elements: one is dependent on client behavior only, while the other is also dependent on therapist and/or observer behavior. There is preliminary evidence that different contact reflections require different pragmatic skills.

### PRE-THERAPY PROCESS AND OUTCOME

We have aggregated the findings of all available publications on descriptive and comparative tests of Pre-Therapy. As far as we know there are no unpublished Pre-Therapy outcome studies (but we would be pleased to learn of others). *Descriptive* process-outcome evaluations assess whether communicative contact of Pre-Therapy clients improves over time and relates to client improvement. *Comparative* process-outcome evaluations assess whether communicative contact improves more in Pre-Therapy than in other treatments and also relates to improved outcomes.

#### Descriptive tests

Dinacci (1997) reports ECPI scores before and after treatment for two inpatients, both nearly mute and physically and/or intellectually disabled, diagnosed with schizophrenia and hospitalized for at least thirty years in the same psychiatric institution. They received Pre-Therapy twice a week during seven months, as well as a constant dose of neuroleptics before and during the observed period (Table 3). Treatment resulted in pre-post GII changes of 13 and 24 points ( $t[1] = 3.36$ ; n.s.;  $d = .64$ ). These findings were associated with nursing observations of improvement (Dinacci, 1997).

Additional data on the relationship between increased communicative contact and outcome is available from three single-case studies (Prouty, 1990, 1994, p. 45; Prouty & Cronwall, 1990). All clients had multiple diagnoses, including schizophrenia or intellectual disability. Pre-Therapy treatment varied from nine months to two years, with up to 200 sessions. PTRS-2 data are presented in Table 2. Due to the fact that changes could not be directly compared across studies in absolute terms, the scores were first converted to standard distributed values and then averaged across raters. There was significant change in Social

Communication from the beginning to the end of therapy ( $t[2] = -8.88, p < .05, d = 2.17$ ). The sum of standard scores was calculated across all categories for each client and averaged over the raters to obtain a more general estimate of communicative contact. There was a large ( $d = 1.44$ ) but not statistically significant change in communicative contact from the beginning to the end of therapy ( $t[2] = 2.82, n.s.$ ).

We have used these findings to calculate an average, weighted effect size for improvement in contact process occurring as a result of Pre-Therapy treatment for schizophrenic patients. The total number of cases is very small ( $n = 5$ ), but the result after nine to twenty-four months of treatment is large:  $d = 1.08$  (95% CI between  $-.03$  and  $2.47$ ). After treatment, the test score of an average person who received treatment was likely to be higher than 86% of similar patients before treatment. (Note that these small sample estimates are based on statistics that did not reach statistical significance). Pre-Therapy does appear to improve the contact functioning of clients with schizophrenia in clinically significant ways.

### Comparative tests

Hinterkopf et al. (1979) conducted a randomized controlled study on a ward for chronic schizophrenic patients who had been hospitalized on average for 20 years. Seven pairs of inpatients were matched on pre-treatment PTRS-1 total scores and one client from each patient pair was randomly assigned to either the treatment or the control group. Seven participating therapists, all trained in client-centered/experiential psychotherapy and Pre-Therapy, offered one hour of individual attention per week to two patients, one of each treatment condition, for six months. The patients in the treatment group received Pre-Therapy during the allotted hour, whereas the patients in the control group received recreational therapy. On the basis of a post-treatment PTRS-1 evaluation, the number of patients with improved scores was counted for each of the categories. While the authors reported a higher number of improved patients for Communication of Basic Reality in the experimental group, this difference was not statistically significant (Fisher's exact test,  $df = 1, p = .13$ , Cohen's  $d = .61$ ). Due to lack of information concerning the dimensional structure of the PTRS-1, we were unable to estimate the number of participants who had an improved score for at least one of the categories.

Finally, Dinacci (1997) compared the Pre-Therapy treatment of two inpatients with schizophrenia (reported above) to the regular treatment of two other inpatients from the same ward, matched for age, symptoms, GII score and duration of stay in the institution (Table 3). All of these patients received a constant dose of neuroleptics before and during the observed period. The difference in post-treatment GII scores for these pairs was not statistically significant ( $t[2] = 1.23; n.s.$ ), even though the controlled effect size was large ( $d = .77$ ). The size of these effects suggests that Pre-Therapy treatment could result in higher verbal expressivity and more meaningful communication, even in patients with schizophrenia who have over thirty years of hospitalization.

With the studies by Hinterkopf et al. (1979) and Dinacci (1997) we can estimate an

average, weighted effect size of Pre-Therapy in relation to an inpatient comparison group. This estimate is based on PTRS-1 Communication of Basic Reality and ECPI GII scores from eighteen cases. The average effect size is large:  $d = .64$  (95% CI between  $-.31$  and  $1.60$ ). After six to seven months of Pre-Therapy treatment, the average inpatient with severe and chronic symptoms of schizophrenia can be expected to score higher on measures of contact behavior than 74% of similar patients who did not receive this treatment.

**Table 3**

*ECPI pre- and post-General Interview Index (GII) for four schizophrenic inpatients, from Dinacci (1997)*

Client	Gender	Age	Hospital-ization	Medication	Pre-Therapy	Pre-GII	Post-GII
A	male	45	30	propericiazine, diazepam	yes	18	42
B	male	67	55	propericiazine	yes	64	77
C	male	46	32	haloperidol	no	52	46
D	male	67	40	propericiazine	no	15	17

### Conclusions

Two small randomized controlled studies and three single-case studies have reported estimates of change in communicative contact in Pre-Therapy. All patients demonstrated chronic communicative and emotional problems relating to schizophrenia or intellectual disability. Average descriptive and controlled effect sizes for these studies are large, even though they lack statistical power. Still, with one of the more reliable subscales of the PTRS-2 (Social Communication) we found evidence from three single-case studies that communicative contact can improve over a period of one to two years. These clients produced more meaningful expressions in the last phase of treatment. However, we found no evaluation of the relation between improved communicative contact and other elements of client improvement, except for unsystematic reports by staff or family.

## DISCUSSION

Prouty (1976, 1990, 1994) distinguishes three functions of contact: reality contact, affective contact and communicative contact. Due to the manner of measurement of contact behavior, Pre-Therapy researchers have consistently focused on the communicative function. They have screened clients' verbal and nonverbal expressions for markers of contact (Hinterkopf et al., 1979; Prouty, 1990; Dinacci, 1997; Brenner, 2006). Even though Prouty's theory of contact involves a shift from Rogers' interpersonal approach to a focus on contact within the individual, Pre-Therapy research has a strong interpersonal flavor because meaningfulness of communication is dependent on the context of communication and particularly the behavior of others. We believe, therefore, that the theory and practice of Pre-Therapy could benefit from a clarification of its core concepts and processes by making use of tools from the field of language pragmatics. With its long tradition of accounting for referential and contextual aspects of communication, it offers the Pre-Therapy field a wealth of potential assessment tools and instruments (Adams, 2002). The developmental perspective of these instruments fits well with recent clarifications of Pre-Therapy theory and practice in terms of developmental psychology (Peters, 2005, 2006).

Contact reflections are supposed to meet the client at their level of expression and experiencing and to facilitate client contact efforts, hence supporting the formation of therapeutic and other relationships. Preliminary research findings generally support this view. Improvements in patients' PTRS or ECPI scores support the frequently reported subjective impressions of therapists, nursing staff and family. However, outcome research would benefit from studies with more reliable measures and larger treatment groups. Evaluations of training as performed by Ondracek (2004) can also be used in valuable tests of outcome. More frequent single-case studies (see Elliott, 2002) will also be useful in evaluating the efficacy of Pre-Therapy. The only statistically significant outcome effect in our review was obtained by aggregating three single-case studies. Studies focusing on in-session client change in relation to therapist goals and interventions could help practitioners develop a task model for Pre-Therapy (see Greenberg, 1984). Such a model would help researchers to compare case reports and support future and larger outcome studies.

Finally, we encourage a broad range of practitioners to publish process and outcome findings on Pre-Therapy in particular and contact functions in general. Contact reflections are currently applied in psychotherapy, special education, and nursing, and not only for people with schizophrenia. Systematic research, including single-case studies, on all populations and all types of practitioners is required to advance the field of Pre-Therapy.

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