Assessment of repeated relational patterns for individual cases using the SASB-based Intrex questionnaire

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Abstract

Repeated interpersonal patterns are central to case conceptualization and treatment planning in interpersonal and attachment-based approaches to therapy. In this study, raters (133 college students, 165 inpatients) provided data on the SASB-based Intrex questionnaire about self-treatment, relationship with a significant other, and remembered interactions with parents in childhood. Within-subject profiles were inspected for precise behavioral matches conforming to three "copy process" patterns: Identification (behaving like an important other), Recapitulation (behaving as if the other person is still present and in charge), and Introjection (treating the self the way another did). Copy process evidence was observed in most individual ratings. Consistent with expectation, non-clinical raters tended to copy a securely-attached pattern of affiliation, low hostility, and moderate degrees of enmeshment and differentiation. Only patients copied maladaptive behavior at greater than base rate expectation. Implications are discussed and recommendations provided for use of Intrex in individual assessment of copy process.

Interpersonal relationships figure prominently in nearly all aspects of human life. Themes in literature, movies, music, and politics, repeatedly attest to the relevance of the social sphere to emotion, motivation, self-concept, and more. Many psychological theories of personality grapple with the importance of relationships and relational patterns, including their relevance to symptom states and poor adaptation. Object-relational, interpersonal, and attachment theories all converge in emphasis on the importance of relatedness as it impacts functioning (Greenberg & Mitchell, 1983; Teyber, 2005), as do some cognitive-behavioral approaches that incorporate person schemas, behavioral modeling, or social reinforcement (e.g., Kohlenberg & Tsai, 2007; Safran & Segal, 1996; Young, Klosko, & Weishaar, 1993).

A component of many interpersonal theories is that the learning that occurs in earlier relationships plays a role in shaping the expectations, wishes, fears, and self-concepts that guide behavior in later social settings (Sullivan, 1938; Kiesler, 1996; Teyber, 2005). Bowlby (1973) introduced the term "internal working models" to describe templates for understanding of self and others that are developed in close attachment relationships. Building on the ideas of Bowlby and others, Benjamin (2003/2006) proposed that patterns in current relationships replicate those remembered from the past with remarkable precision. This process, called "copying," is one consequence of our evolved capacity to model, imitate and quickly learn the rules and values of close attachment figures (Benjamin, in press). Patterns learned in an attachment context are likely to persist, even when maladaptive, because they serve to maintain psychological ties to early figures and are motivated by wishes for their love and acceptance.

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Adaptive and maladaptive copying of interpersonal patterns

Copying is adaptive if it helps meet the demands of current circumstances in reality-based ways. It is maladaptive when the fit is poor. For example, a patient may be anxious and unwilling to disclose in therapy for fear of criticism (e.g., avoidant personality disorder), or of the information being used to harm him or her in some way (e.g., paranoid personality disorder). The response of fearful non-disclosure may make sense in terms of the individual's unique learning history (i.e., that they have learned there is "good reason" to be wary) but hinders adaptation to the reality of being in therapy. Personality pathology involves greater response to internalized figures from childhood who have modeled maladaptive rules and values (e.g., responding to a therapist as if he/she will behave in the same ways the early figures did), than to present-day reality, and so has been called "attachment gone awry" (Benjamin, 2003/2006, p. *v*).

In the present study, adaptive and maladaptive relational patterns are operationalized using an interpersonal model called Structural Analysis of Social Behavior (SASB: Benjamin, 1979, 1996). Adaptive relating in normative social settings is characterized within the model as interpersonal friendliness, coupled with a flexible ability to be moderately engaged (enmeshed) or moderately separate (differentiated) from others. Data generated from normal (non-clinical) participants on SASB-based questionnaires produce profiles consistent with this description (Benjamin, 2000; Conroy & Pincus, 2006). Adaptive patterns reflect secure attachment, and lead to positive self-concepts and collaborative engagement with the world.

Maladaptive relating, by contrast, contains hostility, extremes of enmeshment (controlling or submitting to others), and/or extremes of differentiation (extreme separation, disconnection) in normal social settings. Studies applying the SASB model to clinical samples find associations between interpersonal hostility and psychopathology. Evidence linking forms of psychopathology to extremes of enmeshment or differentiation also occurs, but is less commonly reported (Benjamin, Rothweiler, & Critchfield, 2006; see also studies described below).

Copy processes

Benjamin (2003) identifies three primary ways that early relational learning is copied and shown behaviorally in the present. The primary ways of copying include: (1) *Identification*: behaving like an important other person, (2) *Recapitulation*: behaving as if the other person is still present and in charge, and (3) *Introjection*: treating the self the same way an important other person did. As a simple example, a patient reports his father was always critical of anything he did and told him that he was "stupid" and "would never amount to anything." If the patient now puts others down in the same way, this suggests identification. Recapitulation is present if the patient repeatedly experiences failures that support father's prophecy, or if others put him down in the same way father did. Introjection would be if he believes "I'm stupid" or "I'm a failure."

Studies linking early adversity with adult problems and psychopathology provide evidence of each of the copy processes. For example, *Identification* (being like the early figure) is consistent with studies showing links between early witnessing or experiencing of abuse (interparental or parent-child) and later abuse of both children and romantic partners (Carr & Van Deusen, 2002; Chermack & Walton; Heyman & Slep, 2002; Moe King, & Bailly, 2004). *Recapitulation* (acting as if the early other were still there and in charge) is suggested by links between exposure to family-of-origin violence and later victimization by a romantic partner (Gladstone, Parker, Mitchell, et al., 2004; Heyman & Slep, 2002), as well as in studies connecting childhood sexual abuse with sexual (and physical) victimization as an adult (Arata, 2002; Desai, Arias, Thomson, & Basile, 2002; Noll, Horowitz, Bonanno, Trickett, & Putnam,

2003; Schaaf & McCanne, 1998). *Introjection* (treating oneself as one was once treated) can be seen in correlations between remembered early psychological maltreatment and adult self-depreciation and self-blame (Brewin, Andrews, & Gotlib, 1993; Higgins & McCabe, 2000), as well as between childhood sexual abuse and self-harm as an adult (Noll, Horowitz, Bonanno, Trickett, & Putnam, 2003; Gladstone, Parker, Mitchell, Malhi, Wilhem, & Austin, 2004).

Research using SASB to measure copy process

Benjamin developed copy process theory out of 30 years of research and clinical application of the SASB model (1979, 1996).SASB-based methods have linked copy process patterns to forms of psychopathology with varying degrees of specificity. For example, Wonderlich, Klein, and Council (1996) observed introjection of perceived parental hostility in individuals diagnosed with bulimia. In another study involving introjection, young adults with features of borderline personality disorder (BPD) reported elevated levels of self-attack and reduced self-control (compared to a group having no BPD features) that were paralleled by ratings of parental relationships on the SASB-based Intrex questionnaire (Ruiz, Pincus, & Bedics, 1999). Cushing (2003) used Intrex to study the parenting behavior of cocaine addicted and non-addicted populations and found copy process links to the remembered early relationship with mother.

Hostility is the primary, SASB-based dimension of behavior emphasized in the foregoing examples from clinical research. However, copy process theory states that any interpersonal pattern may be copied, so long as it was present in the early experience with important attachment figures. The theory also posits a high degree of match between past and present behavior so that variations in current relating should precisely reflect rater's experience of specific relationships, not simply a broad dimension of relating. For example, Benjamin (1996) used copy process theory and SASB to describe prototypic patterns relating of each of the DSM-IV personality disorders along with the expected early learning history that would differentiate them. Smith (2002) found support for several of these hypothesized links by correlating past and present relationship ratings with obsessive-compulsive, avoidant, and borderline personality traits in a sample of inpatients. More recent SASB research confirms that precise patterns of copy process repetition can be detected in both normal and clinical samples, and include copying of behaviors from all around the SASB model (i.e., both maladaptive/hostile and adaptive/friendly ways of relating; Conroy & Pincus, 2006; Critchfield & Benjamin, 2008). Copying appears to be moderated to some degree by gender of rater, gender of early attachment figure, and clinical status (Critchfield & Benjamin, 2008).

Relevance of copy process to clinical assessment

A treatment approach called Interpersonal Reconstructive Therapy (IRT: Benjamin, 2003/2006) is closely associated with copy process theory. IRT seeks to address the relationship with internalized figures to enhance a patient's ability to become free of old patterns and choose healthier alternatives. The method was designed to treat complex cases with personality disorder but is based on principles assumed to have wide applicability. In IRT, a case formulation method is used to detect copy process (CP) patterns linked to presenting problems. Treatment is then tailored for an individual based on patterns in the formulation (Benjamin, 2003/2006). Clinical use of the Intrex questionnaire involves review with a patient of copy process links and problematic patterns of relating in order to focus treatment. In our experience, its use can increase an individual's awareness about current relationship patterns, self-concepts, and their origins. This in turn enhances motivation to participate actively in group or individual treatments focused around interpersonal issues.

Aims

Past research has shown that CP is observable at the group level in normal and clinical settings. The present study examines whether CP can be validly assessed for individuals using a method that requires precise matches between past and present interpersonal profiles, and that incorporates behavior from all portions of the SASB model. A normal and a clinical sample are included to determine whether adaptive as well as maladaptive behaviors are copied.

Cultural base rates (BRs) can and should reflect optimal attachment. If CP is indeed part of a normative, developmental process that has evolved to enhance adaptation and survival among primates (as suggested by Benjamin, 2006), then individuals with healthier attachments should show more copying. We therefore expect that CP will be detected in both samples, but at the greatest rates among normals due to a strong cultural BR of attachment.

CP theory states that copying should reflect unique patterns of experience with particular individuals, not just overall trends for relating. Therefore, both groups are expected to copy beyond levels predictable from their respective BRs. Patients are expected to show the most copying over and above BR expectation. This is because the strong presence of positive attachment in the normal sample should result in a very high hurdle for detection of additional copying.

Finally, patients are expected to show greatest evidence of CP in analyses focused exclusively on repetition of maladaptive behaviors, both before and after control of BRs. This is because *copying* of deviant behavior is not adaptive, and should require deviant experience in early attachment relationships in order to persist in adulthood.

Method

Subjects and Procedure

This study used data from two existing archives. In each archive, adult participants (college students and clinical inpatients) consented to research participation and then provided data by rating themselves using the SASB–based Intrex questionnaire (long–orm version, described in more detail below). The college sample was recruited from psychology courses taught at a large Midwestern university and included graduate as well as undergraduate participants. The incentive offered for research participation was personal growth. Participants rated the questionnaires at home and then received feedback in a group setting using their individual output along with instruction on how to interpret it. No data were excluded. The sample included 133 students (104 women, 29 men), with ages ranging from 18 to 59 ($M = 29.7$ years, $SD = 14.6$). The presumption for the current study is that the college sample provides an approximate normative set of profiles and so is referred to as the "normal" sample.

The archived patient sample consisted of 165 psychiatric inpatients (97 women, 68 men) assessed after admission to a large university hospital psychiatric clinic. The inpatients were approached by staff and asked to participate in the study during their stay, when judged stable enough to participate. Data was collected as part of a larger study of diagnostic methods reported by Greist et al. (1984). Patient ages ranged from 18 to 66 ($M = 31.5$ years), and years of education ranged from 9 to 19 ($Mdn = 14$ years). Nearly all of the clinical subjects were taking prescribed medication. Diagnoses were obtained through a structured clinical interview procedure and a computer–based algorithm that showed good levels of agreement (Greist et al., 1984). Primary diagnoses (based on DSM-III) were personality disorder (24%), depression (20%), bipolar disorder (18%), and schizophrenia (15%). All other disorders comprised 23% of the sample. The resulting sample is broadly representative of patients seen in inpatient treatment settings.

Inpatients were offered $20 as incentive to participate in the research study. Participants completed a series of interviews and questionnaires, including the Intrex, after they had been judged by the examiner to be symptomatically stable. Patients could elect to have a volunteer student "handholder" read the items or review instructions with them. Data from two patients were excluded from analyses based on a uniform pattern of response that appeared to ignore item content. One patient used only the 2 midpoint values of the scale for all items and relationships, while another provided identical response for all relationships in the last third of the questionnaire. For the latter patient, data were excluded only from the point where identical values began. Data for all other respondents appeared to contain meaningful variability across items and relationships, and so were retained.

Structural Analysis of Social Behavior, SASB (Benjamin 1979, 1987, 1996)

The SASB model describes interpersonal (an individual relating to another) and intrapsychic (an individual relating to him or herself) behaviors. Figure 1 shows the simplified cluster version of the SASB model (Benjamin, 1996). Three types of focus are contained in the model: Other, Self, and Introject. Focus on other behaviors (shown in **bold**) are all to, for, or about another person (e.g., **Protect**, **Control**). Focus on self behaviors (underlined labels) are to, for, or about the self in relation to another (e.g., Trust, Submit). Introjective behaviors (*italicized*) describe action directed inward from the self, to the self (e.g., *Self-Protect, Self-Control*). For each focus, behavior is organized in a two-dimensional circular arrangement. The horizontal dimension corresponds to affiliation, with extremes of hate on the left, and love on the right. The vertical dimension reflects degrees of interdependence: behaviors at the top of the model contain forms of differentiation and separate space (e.g., **Emancipate**, Separate) while behaviors at the bottom are enmeshed with others (e.g., **Control**, Submit). The most detailed version of the model defines 36 positions for each focus (Benjamin, 1979). The version used in this study collapses adjacent points of the full model into 8 clusters for each focus (Benjamin, 1996).

Organization of the SASB model suggests three "predictive principles" (Benjamin, 1996) that are directly relevant to the present investigation: similarity, complementarity, and introjection. [1] Similarity is defined as two persons having identical model positions. Complementarity occurs when two behaviors share the same dimensionality, but differ in terms of focus on others versus self (e.g., Submit and **Control**). Introjection occurs when self-treatment parallels focus by another person (e.g., **Blame**, and *Self-Blame)*.

Defining adaptive and maladaptive relating

Healthy, "normal" relating is defined as a SASB profile reflecting behavior on the right side of Figure 1 that includes friendliness, moderate enmeshment, moderate differentiation, and a balance of focus on self and others. Psychopathology is associated with forms of hostility, extremes of enmeshment, differentiation, or an imbalance of focus. As mentioned previously, these spatial definitions of normality within the SASB circumplex are consistent with empirical data using Intrex among non-clinical (Benjamin, 2000) and disordered samples (for review see Benjamin, Rothweiler, & Critchfield, 2006).

Measure

SASB Intrex Questionnaire (long form: Benjamin, 2000)—The Intrex is a self–report measure of interpersonal behavior that conforms to the SASB model. All participants completed the standard Intrex series, which begins with ratings of introjective behavior (how the rater treats him or herself) when at best, and then when at worst. Next, the participant rates

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[1]Additional predictive principles have been defined, but their description is beyond present purposes.

his or her relationship with a significant other (SO), starting with views of the other person followed by views of the self in relation to that person. As with introjective behaviors, the SO relationship is also rated for "at best" and "at worst" states. Asking for current relationships to be rated at best and worst is consistent with the use of SASB as a trait by state by situational model, and is a distinction that has been informative in many contexts. Then, without regard to state, participants assess the remembered relationship with mother and father in childhood (ages 5–10) using the same sequence of administration as for SO (first the other person is rated, then the self). Finally, the participant rates perceptions of mother and father in relation to each other.

Intrex items are rated on a scale from 0 (*not at all characteristic, never applies*) to 100 (*perfectly characteristic, always applies*) in 10–point increments, indicating the degree to which each behavior applies to a given relationship. The answer sheet is structured so that ratings less than 50 are degrees of being "false" and ratings 50 or above are degrees of being "true." In the "long form" administration used here, four to five items assess each cluster of the SASB model so that there are 36 items for each introject rating, and 72 items for each individual's interpersonal behavior in a given state. Within each set, items are presented in a random order so that there are no cues given to "hard-wire" patterns of response. Separate item orders apply to ratings of introject, others, and self. This overall order repeats across each rated relationship.

The Intrex performs well in tests of the predicted circular ordering of items, as well as showing good concurrent and predictive validity within a variety of data sets collected and analyzed by different investigators (for detail, see Benjamin, 2000; Benjamin, Rothweiler, & Critchfield, 2006). Internal consistency of the long form estimated for the two samples used in this study yields a mean cluster alpha of .74 for inpatients, and .71 for college students based on ratings of introjective self–treatment at best and worst, mother's transitive focus on the rater, and rater's reactions to mother (Pincus & Benjamin, 2003). The Intrex manual reports strong test-retest reliability for use of the long forms in normal and patient samples (Benjamin, 2000).

Identifying copy process

Summary data from any Intrex battery includes a wide variety of parameters. To assess for presence of copying, behavioral profiles from different relationships and states are compared on a within-subject basis. Each profile is made up of the 8 raw cluster scores for a given focus on the SASB model and are compared using Pearson's correlation applied to parallel sets of SASB clusters using procedures recommended by the Intrex manual (Benjamin, 2000). For example, Figure 2a shows a profile comparison between a patient's rating of his introject at worst, and ratings of his father in childhood. Introject ratings reveal high levels of *Self-control, Self-blame, Self-attack*, and *Self-neglect*, and low levels of friendliness to the self. This pattern bears resemblance to the rated memory of father as showing high levels of **Blame, Attack,** and **Neglect**, with little warmth. The match is not perfect however, especially in terms of a difference between patient *Self-control* and father's **Control**, yielding a profile correlation of $r = 0.66$.

For this study, a strong positive correlation in any relevant profile comparison indicates presence of CP for a single case. Copy processes are not mutually exclusive. The relationship with one or both parents may be introjected, identified with, and/or recapitulated. Copying can also occur in best or worst states. Seventy-two of the 231 possible profile comparisons in this study have relevance to CP and are listed in Table 1. Sixteen comparisons relate to Introjection (i.e., self-treatment at best and worst compared to input from SO and parents), 32 comparisons relate to Identification (i.e., potential evidence that current behavior imitates one or both parents), and 24 comparisons relate to Recapitulation (potential evidence that current relating directly replicates early experience). Inclusion of all these forms of CP is facilitated by Intrex

scoring software that provides correlations among all profiles.[2] The scope of information is similar to that used by clinicians to make a determination about the role of CP for an individual.

The Intrex manual recommends defining two profiles as similar when the correlation is at a value of $r = .71$ or greater, corresponding to 50% (or more) shared variance. To best understand properties of the Intrex in detecting CP among individuals, three increasingly strict thresholds for defining CP are used in the present study: $r > .70$, $> .80$, and $> .90$. At the most conservative threshold, profiles share 81% of variance and almost completely overlap. Two such profile comparisons are provided in Figures 2b and 2c, showing the rater's strong identification with his controlling, abusive, and distant father when he interacts with his SO at worst.

Statistical Analysis

In each analysis, copy process is assessed by correlating an 8 point profile for an aspect of one figure (e.g., father focused on me) with another 8 point profile (e.g., I focus on my significant other, suggesting identification with father). Since 72 possible indices of CP will be checked for each case, it is likely that profiles will overlap at some rate based on chance. In clinical practice, this problem is addressed subjectively by discussing with patients whether they think the data reflect the copy processes in question. For this study, the possibility of BR artifacts is addressed using additional samples constructed from random and shuffled data.

In a first set of analyses, normal and patient samples are separately inspected for CP. A comparison set of data ($N = 200$) is drawn from random numbers with a uniform distribution allowed to vary from 0 to 100 for each SASB cluster (the total range of Intrex responses). Comparison with random data allows understanding of copy process rates relative to the chance rate of profile overlap (e.g., through random responding on the questionnaire).

In a second set of analyses, comparison samples are constructed from random shuffling of the existing datasets to estimate amount of CP expected from BRs in each sample. More specifically, within subject correlations between two actual profiles (e.g. father focused on me; I focus on significant other) are compared to correlations between two profiles that are constructed from random scrambling of scores (e.g., for each SASB cluster, scramble and select without replacement from 'father focused on me'; repeat for 'I focus on SO'). Base rates will be embedded in the scrambled numbers, and any copy process that emerges will be due to retaining stronger within-subject matches in the actual data sets. By including methods to identify both the absolute presence of copying, as well as to compare with expectations of chance (in absolute terms as well as relative to BRs), we employ a variation of the "dual-hypothesis testing" logic illustrated for interpersonal profile data by Conroy and Pincus (2006).

A final set of analyses restricts assessment of copying to deviant patterns. In terms of the SASB model, this means any low scores among friendly clusters on the right of Figure 1, or any high scores among the hostile clusters on the left. For clusters directly on the vertical poles of the model, both high and low extremes (i.e., too much or too little enmeshment or differentiation) are considered to indicate pathology. Deviancy is operationally defined in this study as a profile wherein any SASB cluster is more than 2 standard deviations away from normative means in the direction of pathology (as just described). Patient and normal samples will again be compared to shuffled data, this time focused only on rates of deviant/maladaptive copying.

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[2]Intrex software and manuals are available from the University of Utah. Information can be found at: http://www.psych.utah.edu/benjamin/sasb.The Intrex manual explains how to quickly generate within-subject correlations for all profiles after primary scoring is complete. Users can organize output from the program in a spreadsheet to allow easy visual inspection for presence of CP.

In all three sets of analyses, Chi-square is used to assess differences in frequency of the number of cases with CP between groups at each threshold (> .70, .80, or .90). Non-parametric tests (Kruskal-Wallis and Mann-Whitney U) are used to assess group differences in per-case frequencies (e.g., number of "hits" for a given case out of the 72 possible profile comparisons).

Results

Rate of observed CP in normal and patient samples

The top half of Table 2 presents the percentage of cases showing copying for normal, patient, and random data. Chi-square analyses confirm what is apparent from visual inspection, that the rate of copying is significantly higher for normal cases than for patients ($p < .05$). The only exception ($p = .07$) is for overall copying when it is defined as $r > .70$. Both groups show reliably more CP than artificial cases based on random data. CP rates diminish dramatically for random data as the threshold is increased from $r > .70$ to $> .80$ and higher. Patient and normal rates, by contrast, remain robust across levels.

The bottom half of Table 2 shows the average number of within-subject profile comparisons that suggest copying, for the subset of cases where copying occurs. Results parallel those for presence versus absence of CP: Statistically significant differences are observed for each threshold and each group. Normals show the greatest number of profiles evidencing CP, followed by patients. Randomly generated data produces very little per-case evidence of CP.

Copying relative to sample-specific base rates

Odds ratios presented in Table 3 compare the rate of copy process detection in actual versus shuffled data sets. As expected, patient data shows 10 out of 12 significant Chi-square comparisons and large odds ratios, indicating more CP than in the shuffled set. The normal sample copied at a significantly greater rate only at the highest threshold for CP ($r > .90$).

Detecting abnormal copy process

As expected, deviant patterns are greatest among patients, with 91% of cases showing deviant profiles for introject ratings, 95% for SO relationships, and 87% for parental patterns. By contrast, normal subjects showed deviant profiles in only 40% of cases for introject, 56% for SO, and 61% for parent ratings. Table 4 shows rates of copying of deviant patterns relative to shuffled data. Copying of deviancy occurs at significant rates only for patients. Introjection and recapitulation show the strongest effects, especially at higher thresholds ($r > .80, > .90$). One exception is that there is significantly less identification when the lowest threshold for CP is used. Normal cases show no CP significantly greater than for their respective shuffled set, and 4 of 12 comparisons are significantly lower.

Discussion

Benjamin (in press) draws on attachment theory, neurobiological data, and evolutionary reasoning to propose that caregivers offer the primary "safety system" to children, and if they are abusive (to take one example of a maladaptive pattern) then safety and threat become confused. In other words, the same process of attachment that produces healthy, adaptive relating is expected to facilitate copying of maladaptive patterns *if* they are modeled by important caregivers. Previous work on copy process has established its presence at the group level and shown that it includes repetition of interpersonal behavior from all regions of the SASB model. The present results extend these findings by establishing the ability of Intrex to detect copy process in individual assessments.

Overall, the Intrex appears to be an efficient instrument for detecting CP. Introjection, identification, and recapitulation are all readily observed in individual profile ratings from both normal and clinical samples. Copy process shows orderliness and rates of occurrence that exceed expectations of chance as modeled by random data. Copying also exceeds cultural or sample-specific BRs contained in shuffled data, and often involves remarkable specificity in terms of the degree of match between profiles rated for past and present relationships.

Normative copying of adaptive patterns

Expected differences exist between normal and clinical samples in terms of the total amount of copying as well as the nature of patterns copied. Normals show the most copying. Their profiles most often involve a pattern consistent with securely-attached relating, involving friendliness, low hostility, and moderate degrees of enmeshment and differentiation.

The high BR of friendly relating in the normal sample poses an analytic and conceptual challenge. Status as "normal" involves copying of adaptive patterns. Therefore, presence of a highly reinforced BR of positive relating for normal cases is "the phenomenon itself." A strong BR also means that normal samples show less profile variability than patient samples, reducing the ability to detect unique links to specific figures. In this study we dealt with this problem by first presenting "raw" copy process rates, and followed up with an analytic procedure that for the normal sample controls for the BR of secure relating. Evidence of copying over and above the BR of attachment (shown by the odds ratios in Table 3) could be detected even with this harsh test, but only when the required profile match was set at the highest level ($r > .90$) and each type of CP was considered separately.

Maladaptive copying

From a clinical standpoint, patterns that deviate from the profiles of well-attached individuals are of primary interest.[3] If relationship patterns and self-concepts are hostile, punitive, or otherwise maladaptive, an important question for treatment planning and case conceptualization is whether these patterns reflect experience with, or persisting attachment to, internalized figures. We found that deviant patterns of relating were present in the Intrex profiles of nearly all patients in our sample. Many normal cases also show deviant patterns, but at a lower rate. Only patients copy deviant patterns at rates that exceed BR expectation. One exception is for identification with maladaptive parental examples, but only when a liberal definition of CP is used ($r > .70$). Normal cases, by contrast, copy deviant relating at low rates, often less than would be expected from their already low BRs. One possible explanation for apparent resiliency against deviant copying among normals may be greater availability of benign or friendly attachment figures (e.g., development of primary attachment with the healthier of two available parents). Additional study is necessary to replicate and further explore this possibility.

Use of per-case evidence and varying thresholds for profile similarity

As shown at the bottom of Table 2, actual data sets tend to produce many examples of copying for each individual, rather than the one or two profile matches observed in randomly generated cases. One implication is that assessors can be more confident that copying has occurred when multiple profile comparisons suggest repetition.

Even though significant differences in CP rates and number of profiles were found, copying appeared with substantial frequency for random, shuffled, and actual data sets, especially when

[3]Presence of adaptive copying can signal areas of strength or resiliency that can also be useful for treatment (e.g., calling on memories of an adaptive relationship to provide antidote to problem patterns learned from a maladaptive one), but is rarely the primary focus of a clinical CP assessment.

the threshold for CP was at its lowest level, $r > .70$. CP only holds up well for actual case data as the threshold for similarity is raised. This observation also has implications for individual assessment with Intrex. The $r > .70$ threshold for profile similarity may be most appropriate in settings where "casting a wide net" is desirable. False positives may occur, and so any evidence should be viewed as tentative until checked out directly with respondents or established by convergence with other information about case history. In settings where a more conservative approach is desired, profile match at $r > .80$ appears appropriate. Deviant patterns are detected in patients beyond the BR expectation at this level. A higher threshold may be considered in settings where a normative, well-attached profile is expected but, for reasons already discussed, this risks throwing out important CP data since replication of secure attachment is a key component of the theory. Clinicians or researchers working in non-clinical settings should choose a threshold for CP that best reflects the questions being asked of data.

Exceptions to the rule?

Not all those with disturbed relationships showed copying. In some cases, the reason may be that the most important figures were not assessed. Intrex is often tailored in clinical settings to provide ratings of figures known in advance to be important, such as grandparents, step-parents, siblings, teachers, coaches, religious leaders, or particular romantic partners. Additional time periods or contexts may also be assessed to best capture potential interface between patient history and the nature of the presenting problems. For example, relationships at work may be assessed if there are concerns about a boss or co-worker; relationship with the rater's children may be assessed if parent-child conflicts are the primary motivators for therapy.

Another possible reason that copy process detection could fail in some cases is presence of "opposite" copying, which was not assessed in this study. For example, consider an individual whose parent was chronically absent, leaving the rater alone to fend for him or herself in frightening circumstances (SASB-defined **Ignore**). Now as an adult parent, the same individual may identify "in reverse" by committing fully (perhaps inflexibly) to a focus on the needs of his or her children (180 degrees from **Ignore** on the SASB model is **Protect**). This type of copying would appear in Intrex assessments as a strong, negative, profile correlation (e.g., $r < -.70$). Cushing's (2003) study of parenting among drug-abusing and non-abusing mothers shows evidence of this possibility. In that study, subjects who reported having very hostile mothers were more likely to show opposite (i.e., friendly) ways of relating to their own children than subjects who described friendly mothers. A preliminary inspection of data used in this study shows that copying in reverse exists in some profiles, but is less common than the other types.

Limitations and future directions

Assessing repeating relational themes using a questionnaire method has its challenges. As noted above, the assessment might not include all relevant figures. Also, the method relies on the phenomenology of an individual as he or she remembers and rates relationships from the vantage point of the present. This works well in clinical settings where the patient's point of view is what a therapist typically "works with." We believe the present data are strong enough to justify additional study of copy process using longitudinal methods to determine how the remembered links develop. The perspectives of other family members and outside observers about patterns of interaction are especially interesting in the degree to which perspectives may or may not converge across time. Our prediction is that the individual's own perspective on events will be the strongest determinant of behavior and self-concept at each major developmental juncture.

Planned extensions of the present work in the clinical setting involve comparison of copy process assessments generated by Intrex versus interview methods, and tests to see whether

use of copy process in IRT is associated with predicted changes in symptoms, personality, self-concept, and relationships. Preliminary work is promising and shows that copy process-based case formulations are reliable (Hawley et al., 2005), that their use correlates with patient progress addressing internalized relationships, and that this progress predicts symptom reduction for a small sample of complex cases with severe psychopathology, comorbid personality disorder, and prior history of non-response to treatment (Critchfield, Davis, Gunn, & Benjamin, 2008).

Acknowledgments

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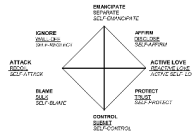Young, JE.; Klosko, JS.; Weishaar, ME. Schema therapy: A practitioner's guide. Guilford; New York: 2006.

Figure 1.
Simplified SASB cluster model. Focus on Other, Self, and Introject are respectively indicated by **Bold**, <u>Underline</u>, and *Italic* fonts. From: Benjamin, L.S. (1996). Interpersonal diagnosis and treatment of personality disorders, Second edition. N.Y.: Guilford. Copyright the Guilford Press, used by permission.
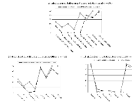
Figure 2.
Within-subject comparisons for a clinical case showing subthreshold introjection (graph a) and strong identification with father (graphs b and c). The introjective profile comparison (a) would not qualify as CP in the present study, even though there is some overall resemblance (i.e., low friendliness and high hostility). Evidence of identification with father (b: focus on other behavior; c: focus on self) qualifies as CP in this case even by the most conservative standard set for this study ($r > .90$). Additional data from the same sample case are presented in Benjamin, Wamboldt, and Critchfield, 2006.

Table 1

Intrex ratings used to define each copy process

Copy process	Current behavior		Potentially copied relationships
Introjection "I treat myself as s/he treated me." Example *Self-blame* at worst now and Father's **Blame**	Introject at best Introject at worst	compared with →	SO focuses on me at best SO reacts to me at best SO focuses on me at worst SO reacts to me at worst Mother focused on me Mother reacted to me Father focused on me Father reacted to me
Identification **(observed in own behavior)** "I treat others as s/he did." Example My **Control** of SO at best and Mother's level of **Control**	I focus on my SO at best I focus on my SO at worst	compared with →	Mother focused on me Father focused on me Mother focused on father Father focused on mother
	I react to my SO at best I react to my SO at worst	compared with →	Mother reacted to me Father reacted to me Mother reacted to father Father reacted to mother
Identification **(observed in other's behavior)** "Others behave as if I am him/her" Example Submit by my SO at best and Mother's level of **Control**	SO focuses on me at best SO focuses on me at worst	compared with →	Mother reacted to me Father reacted to me Mother reacted to father Father reacted to mother
	SO reacts to me at best SO reacts to me at worst	compared with →	Mother focused on me Father focused on me Mother focused on father Father focused on mother
Recapitulation **(observed in own behavior)** "I act as if still with him/her." Example Submit to SO at worst and **Submit** to Mother	I focus on my SO at best I focus on my SO at worst	compared with →	I focused on mother I focused on father
	I react to my SO at best I react to my SO at worst	compared with →	I reacted to mother I reacted to father
Recapitulation **(observed in other's behavior)** "Others behave like he/she did" Example **Control** by my SO at worst and	SO focuses on me at best SO focuses on me at worst	compared with →	Mother focused on me Father focused on me Mother focused on father Father focused on mother
	SO reacts to me at best	compared with →	Mother reacted to me Father reacted to me Mother reacted to father Father reacted to mother

Copy process	Current behavior	Potentially copied relationships
Control by my Mother	SO reacts to me at worst	

Note: "SO" refers to ratings of the significant other

Table 2

Percent rate of CP and mean number of profile comparisons exceeding thresholds for r

	Copying at r > .70			Copying at r > .80			Copying at r > .90		
	Normal	Patient	Random	Normal	Patient	Random	Normal	Patient	Random
Percent of sample with CP present									
Introjection	94[a]	73[a]	35[a]	89[a]	60[a]	16[a]	74[a]	33[a]	3[a]
Identification	98[a]	88[a]	58[a]	98[a]	78[a]	23[a]	92[a]	55[a]	3[a]
Recapitulation	99[a]	90[a]	55[a]	97[a]	85[a]	23[a]	92[a]	67[a]	3[a]
Any Copy Process	100[b]	98[b]	91[a]	99[a]	94[a]	52[a]	98[a]	81[a]	8[a]
Mean number of profiles suggesting CP when present (standard deviation in parentheses)									
Introjection	6.3[a] (3.6)	3.7[a] (2.9)	1.3[a] (0.6)	4.8[a] (3.2)	2.9[a] (2.5)	1.1[a] (0.2)	2.9[a] (2.5)	2.1[a] (1.7)	1.0[a] (0.0)
Identification	19.7[a] (9.5)	10.1[a] (8.4)	1.6[a] (0.8)	16.6[a] (9.4)	7.9[a] (7.5)	1.1[a] (0.3)	11.8[a] (8.4)	5.3[a] (5.9)	1.0[a] (0.0)
Recapitulation	15.1[a] (6.7)	8.8[a] (6.2)	1.3[a] (0.5)	12.6[a] (6.7)	6.7[a] (5.8)	1.1[a] (0.2)	8.4[a] (5.9)	4.2[a] (4.2)	1.0[a] (0.0)
Any Copy Process	40.1[a] (18.9)	19.8[a] (16.0)	2.3[a] (1.3)	32.9[a] (18.3)	14.5[a] (14.0)	1.3[a] (0.6)	21.3[a] (15.5)	7.9[a] (9.6)	1.1[a] (0.3)

"Normal" non-clinical N = 133; Patient N = 165; Random data N = 200.

Maximum number of profiles possible for each CP: Introjection = 16, Identification = 32, Recapitulation = 24 (Total = 72).

[a] Indicates value is significantly different from both contrasting groups (*p* < .05).

[b] Value is significantly different only from the randomly generated group.

Table 3

Odds ratios (OR) comparing the number of cases with and without CP in actual versus shuffled data

CP type	Threshold	Normals	Patients
Introjection			
	r > .70	1.0	2.6
	r > .80	1.7	5.0***
	r > .90	5.6***	9.0***
Identification			
	r > .70	--	5.5***
	r > .80	--	10.1***
	r > .90	2.9**	13.1***
Recapitulation			
	r > .70	--	1.6
	r > .80	--	3.2***
	r > .90	3.5***	5.9***
Any CP			
	r > .70	--	2.1*
	r > .80	--	4.7***
	r > .90	2.4	12.8***

OR values greater than 1.0 indicate greater copying for actual cases.

"--" indicates OR cannot be computed because all cases showed copying in one or both data sets.

*
$p < .05$

**
$p < .01$

***
$p < .001$ for related 2×2 Chi-square test.

Table 4

Comparison of deviant CP between actual and shuffled data sets

| CP type | Threshold | Normals | | | Patients | | |
		Actual (%)	Shuffled (%)	OR	Actual (%)	Shuffled (%)	OR
Introjection							
	r > .70	9	15	0.6	42	22	2.6 ***
	r > .80	5	6	0.9	32	6	7.3 ***
	r > .90	1	2	0.5	17	2	8.2 ***
Identification							
	r > .70	11	35	0.2 ***	44	56	0.6 *
	r > .80	8	18	0.4 *	30	23	1.5
	r > .90	6	4	1.6	14	7	2.3 *
Recapitulation							
	r > .70	16	24	0.6	52	49	1.1
	r > .80	12	14	0.9	41	23	2.3 ***
	r > .90	6	4	1.6	19	6	4.1 ***
Any CP							
	r > .70	22	56	0.2 ***	76	78	0.9
	r > .80	17	33	0.4 **	58	41	2.0 **
	r > .90	10	8	1.2	33	15	2.9 ***

Odds ratios (OR) greater than 1.0 indicate greater copying for actual cases.

Note: Percentages are used in this table to facilitate comparison between samples. OR and associated Chi-square tests are based on raw frequency data.

*
 p < .05

**
 p < .01

***
 p < .001, two-tailed, using 2 × 2 Chi-square test.