

Self-Related Incompleteness in Obsessive-Compulsive Disorder

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Keywords

Self-related incompleteness · Not just right experiences · Motivational dimensions of OCD · Self-rating measure

Summary

Background: Incompleteness is increasingly discussed as a clinically relevant motivational dimension of obsessive-compulsive disorder (OCD). So far, research has focused on incompleteness in terms of ‘not just right experiences’ (NJREs), whereas self-related incompleteness, an OCD-specific variant of depersonalization, has hardly been investigated. The goal of this study is to develop an economical self-rating instrument to assess the severity of self-related incompleteness in OCD. **Methods:** 190 OCD patients received 24 items covering the contents of self-related incompleteness and a number of further measures to investigate construct validity. **Results:** On the basis of conceptual and statistical considerations, we developed a questionnaire for self-related incompleteness (‘Questionnaire on Self-Related Incompleteness’, QSI-12) covering 4 dimensions of self-related incompleteness (depersonalization, derealization, robot-like self-experience, lack of lively feelings) with 3 items/dimensions. A structural equation model shows a good fit of empirical data and model structure. The QSI-12 total scales’ and the subscales’ internal consistency is excellent. Self-related incompleteness and NJREs uniquely and independently contribute to the prediction of OCD symptom severity and show differential relationships to depersonalization/derealization and obsessive-compulsive personality traits. Thus, both phenomena represent clinically meaningful aspects of incompleteness in OCD which can be clearly differentiated from each other. **Conclusion:** The QSI-12 is a reliable and valid screening instrument to assess individual levels of self-related incompleteness in OCD.

Schlüsselwörter

Selbstbezogenes Unvollständigkeitserleben · Nicht-genau-richtig-Erleben · Motivdimensionen der Zwangsstörung · Selbstbeurteilungsverfahren

Zusammenfassung

Hintergrund: Unvollständigkeitserleben wird zunehmend als klinisch relevante Motivdimension der Zwangsstörung diskutiert. Hierbei wird primär der Aspekt des «Nicht-genau-richtig-Erlebens» betont, während selbstbezogenes Unvollständigkeitserleben (SU) als zwangsspezifische Ausprägungsform von Depersonalisationserleben bislang kaum untersucht wurde. Ziel dieser Studie ist es, ein ökonomisches Selbstbeurteilungsinstrument zur Messung der Schwere von SU zu entwickeln. **Methodik:** 190 Patienten mit einer Zwangsstörung erhielten 24 Items, die inhaltlich SU abbilden, und zusätzlich eine Reihe weiterer Messinstrumente zur Untersuchung der Konstruktvalidität. **Ergebnisse:** Auf der Basis inhaltlicher und statistischer Überlegungen wurde der Fragebogen zum SU (FSU-12) entwickelt, der mit je 3 Items 4 Dimensionen des SU abbildet (Depersonalisationserleben, Derealisationserleben, Selbsterleben als automatenhaft, Fehlen lebendiger Gefühle). Ein lineares Strukturgleichungsmodell zeigt eine gute Passung der empirischen Daten und der Modellstruktur. Die innere Konsistenz der FSU-12-Gesamtskala und der einzelnen Subskalen ist hervorragend. SU und Nicht-genau-richtig-Erleben liefern voneinander unabhängige Beiträge zur Vorhersage der Schwere von Zwängen und zeigen unterschiedliche Zusammenhänge mit Depersonalisation/Derealisation und zwanghaften Persönlichkeitszügen. Sie stellen also voneinander abgrenzbare, gleichermaßen zwangsrelevante Aspekte von Unvollständigkeitserleben dar. **Schlussfolgerung:** Der FSU-12 ist ein reliables und valides Screening-Instrument zur Einschätzung des individuellen Ausprägungsgrads von SU bei Zwangsstörungen.

Background

It was Pierre Janet [1903] who described feelings of incompleteness ('les sentiments d'incomplétude') as a characteristic experience of people with obsessive-compulsive disorder (OCD). The term refers to the peculiar inner experience, difficult to describe, that one's actions, perceptions or memories are felt as agonizingly incomplete, unfinished or 'not just right'. 2 different aspects have been stressed in the adoption of Janet's work: Hoffmann [1998, pp. 35, 71] focuses on a altered self-experience during or just before/after a compulsive act and speaks of 'incompleteness related to oneself': Those afflicted feel 'not really there', alienated from themselves, as if in a trance, as if dreaming, 'standing next to themselves', observing themselves from the outside, or acting mechanically, 'like robots'. Their actions 'then "don't count" and often have to be repeated'. This self-related incompleteness (SI) experience could be defined as an OCD-specific variant of depersonalization, which then contributes, e.g., to 'incomplete' recollection of one's actions and to checking compulsions [Ecker and Gönner, 2006].

The English-language literature on feelings of incompleteness seems to neglect this aspect of altered self-experience. Instead, a nagging inner dissatisfaction with one's own actions or perceptions is stressed, which people suffering from OCD can 'put an end to' only with difficulty [Summerfeldt, 2004]. This gave rise to the concept of 'not just right experiences' (NJREs) [Coles et al., 2003, 2005]. Such a subjective not just right experience leads to a strong compensatory urge to put matters right, and patients attempt to restore a 'just right' feeling by repetitive compulsive behavior. NJREs occur in different modalities, such as visual (one's hair does not seem to be parted exactly in the middle), auditory (ritualized prayer does not sound exactly right) or action-related (an action does not feel exactly right, e.g., both shoelaces are not tied with exactly identical tension). More than half of all people with OCD suffer from NJREs [Summerfeldt, 2007], whose strength positively correlates with symptom severity [Leckman et al., 1995; Calamari et al., 2004; Ecker and Gönner, 2008]. NJREs are conceived as OCD-specific variants of perfectionism, in the sense of sensation-based or sensory perfectionism [Coles et al., 2005]. Consistent with this hypothesis, OCD symptoms motivated by NJREs, as opposed to more harm-avoidant OCD symptoms, are positively correlated with obsessive-compulsive personality traits [Ecker and Gönner, 2007; Coles et al., 2008]. Perhaps the reason why the concepts of 'incompleteness' and NJREs are used synonymously in most recent work on incompleteness, while SI is not mentioned, is an 'incomplete' reception of Janet's work in the English-speaking world. Thus Summerfeldt et al. [2004] postulate 2 core motivational-affective dimensions of OCD, namely 'harm avoidance' (HA) and 'incompleteness' (INC). HA concerns the exaggerated avoidance of potential risks (e.g., checking electrical appliances to avoid a house fire), as found similarly for

other anxiety disorders. INC is defined as an OCD-specific dimension exclusively relating to NJREs. OCD symptoms are therefore motivated either by the avoidance of danger and fear, or by the reduction/elimination of NJREs. In the international literature, empirical findings concerning incompleteness [Coles et al., 2003, 2005; Pietrefesa and Coles, 2009; Ecker and Gönner, 2008; Ghisi et al., 2010] as well as etiological and therapeutic considerations [Summerfeldt, 2004, 2007, 2008; Wahl et al., 2008] also exclusively relate to NJREs. Empirical studies on SI in OCD so far do not exist, except for 1 internet study [Thiemann et al., 2008] with a precursor version of the instrument presented here. Also, up to now scales to capture incompleteness are only available for NJREs, namely the 'Just Right' subscale of the Vancouver Obsessional Compulsive Inventory (VOCI [Thordarson et al., 2004]), the 'Not Just Right Experiences-Questionnaire-Revised' (NJRE-QR [Coles et al., 2003, 2005]), and the INC subscale of the Obsessive-Compulsive Trait Core Dimensions Questionnaire (OC-TCDQ, 2nd sub-scale HA [Summerfeldt et al., 2011]; German revision: OC-TCDQ-R [Ecker et al., 2011]).

SI, which has still scarcely been studied, can be conceptualized as an OCD-specific form of depersonalization [Ecker and Gönner, 2006]. Studies of dissociative processes in general, and depersonalization/derealization in particular, in OCD patients [Lochner et al., 2004; Rufer et al., 2006; Maier et al., 2009] have not referred in any way to the experience of incompleteness. Therefore, it is not yet clear to what extent SI and depersonalization/derealization in OCD patients are related psychopathological phenomena. Furthermore, our clinical experience suggests that reduction of SI – in addition to the reduction of NJREs and the avoidance of feared harm for others or for oneself – represents a further, clinically relevant OCD motive. In order to test this hypothesis, a reliable self-report instrument for the empirical assessment of this phenomenon is needed. Moreover, the hypothesis would be supported by empirical evidence of a positive correlation of such a scale with OCD severity.

The goal of this study is to develop a short self-rating instrument to measure the severity of SI in individuals with OCD. In addition, psychometric properties, factorial validity, and other aspects of the instrument's construct validity should be tested, with additional measures used to assess OCD symptoms and other relevant clinical phenomena. The aim is to test, in detail, the following hypotheses:

- 1) SI and NJREs are different and distinguishable phenomena, but both relevant to OCD. They should therefore yield independent contributions to the prediction of OCD symptom severity, after taking into account depression, anxiety, pathological worry, and depersonalization/derealization as control variables.
- 2) Since we consider SI as an OCD-specific variant of depersonalization/derealization [Ecker and Gönner, 2006], we predict a medium to high positive correlation with a general measure of depersonalization/derealization. However,

Table 1. Measures

Method	Measurement goal	Psychometric properties
IDCL [Hiller et al., 1995]	diagnosis according to ICD-10/DSM-IV	satisfactory interrater reliabilities, comparable to various structured interviews
Y-BOCS severity score (self-rating version [Baer, 1993])	severity of OCD symptoms, independent of symptom contents (subscales: compulsions, obsessions; 10 items)	satisfactory agreement with Y-BOCS interview
OCI-R [Gönner et al., 2009]	severity of specific OCD symptoms (checking, washing, hoarding, ordering, neutralizing, obsessive thoughts (18 items)	good reliability and validity of total scale and subscales
OCTCDQ-R [Ecker et al., 2011]	incompleteness in the sense of not just right experiences and harm avoidance (10 items)	internal consistency excellent for incompleteness and satisfactory for harm avoidance
CDS-9k [Michal et al., 2004]	core symptoms of depersonalization/derealization (9 items)	satisfactory internal consistency, adequate temporal stability
BDI [Hautzinger et al., 2001]	depressive symptoms (21 items)	good reliability and validity
BAI [Margraf and Ehlers, 2007]	clinically significant anxiety symptoms (21 items)	high internal consistency and temporal stability, satisfactory convergent and divergent validity
PSWQ-D [Stöber, 1995]	pathological worry in the sense of the symptoms of a generalized anxiety disorder (16 items)	good internal consistency and temporal stability, high correlation with scales for anxiety, depression, OCD symptoms and perfectionism
Subscale 'Careful Style' of the PSSI [Kuhl and Kazén, 1997]	obsessive-compulsive personality traits (10 items)	good internal consistency ($\alpha = 0.87$) in our sample

IDCL = International Diagnostic Checklists for ICD-10; Y-BOCS = Yale-Brown Obsessive Compulsive Scale; OCI-R = Obsessive-Compulsive Inventory-Revised; OCTCDQ-R = Obsessive-Compulsive Trait Core Dimensions Questionnaire-Revised; CDS 9k = Cambridge Depersonalization Scale (German version, short scale); BDI = Beck Depression Inventory; BAI = Beck Anxiety Inventory; PSWQ-D = Penn State Worry Questionnaire-German; PSSI = Personality Style and Disorders Inventory.

the latter should, in contrast to SI, not yield an independent contribution to the prediction of OCD severity, which is why it is also defined, under 1), as a control variable.

- 3) NJREs were conceived as an OCD-specific variant of perfectionism in terms of a 'sensory perfectionism'. Perfectionism is a central feature of the obsessive-compulsive personality, which is also frequently associated with NJREs [Ecker and Gönner, 2007]. Thus, we expect NJREs to have a medium to high positive correlation with obsessive-compulsive personality traits.
- 4) For depersonalization/derealization, we expect a higher correlation with SI than with NJREs.
- 5) For obsessive-compulsive personality traits, we expect a higher correlation with NJREs than with SI.

Methodology

Participants, Procedures, and Measures

The present study includes the data of 190 patients who were diagnosed with OCD (ICD-10 F42), using the 'International Diagnostic Checklists' for ICD-10 (IDCL [Hiller et al., 1995]). Of the study participants, 170 were inpatients at the AHG Psychosomatic Clinic in Bad Dürkheim and 20 were outpatients of 4 specialized psychotherapeutic practices for the treatment of OCD. The diagnoses were given by diagnostically and therapeutically experienced psychotherapists of the clinic or by the heads of the specialized practices. 12% of patients had a comorbid anxiety disorder (F40/41), 41% a depressive disorder (F32-34), 10% an adjustment

disorder or post-traumatic stress disorder (F43), and 23% a comorbid personality disorder (F60/61). The following diagnoses are a contraindication for treatment at the AHG Psychosomatic Clinic: organic, including symptomatic mental disorders (F0); dependence on psychotropic substances (F1x.2); schizophrenia, schizotypal, and delusional disorders (F2); manic episodes (F30) and bipolar affective disorder (F31). Therefore, patients with these comorbid disorders were not included in the study. The mean age was 37 years (standard deviation (SD) = 11 years), and 60% were female. In the self-rating version of the Yale-Brown Obsessive Compulsive Scale (Y-BOCS [Goodman et al., 1989]), the mean value for the study participants was 23.6 (SD = 6.8), i.e., they suffered from a medium-severe level of OCD symptoms. Psychometric assessment took place at the beginning of treatment, which, for both inpatients and outpatients, was based on the principles of cognitive-behavioural therapy with exposure and response prevention [Gönner et al., 2012]. A comparison between outpatients (mean = 21.5) and inpatients (mean = 23.9) showed no significant difference ($t(169) = -1.513, p = 0.132$). Participants were informed that they were participating in a research study and gave their consent. The measures used and their properties are shown in table 1. If the German version of an original English instrument was used, the English publication is also cited in the text or in the bibliography.

OCD severity was assessed using both the German self-rating version [Baer, 1993] of the Y-BOCS and the total score of the Obsessive-Compulsive Inventory-Revised (OCI-R [Foa et al., 2002]; German version, Gönner et al. [2009]). Empirical findings suggest a moderate convergent validity of the 2 methods: The OCI-R correlated only moderately with the Y-BOCS interview [Abramowitz and Deacon, 2006] or the self-rating version [Gönner et al., 2009], because these methods cover different contents: The OCI-R is a multidimensional instrument measuring the severity of impairment in individual symptom dimensions, whereas the Y-BOCS is a global scale measuring the severity of impairment independently of specific symptom dimensions.

In order to capture the depersonalization/derealization syndrome, we used the short scale CDS-9k, a screening scale with 9 items [Michal et al., 2004] developed from the German version of the Cambridge Depersonalisation Scale (CDS [Sierra and Berrios, 2000]). It depicts the core symptoms of the depersonalization/derealization syndrome, which are associated with a feeling of alienation and detachment from the self (depersonalization) or from the world (derealization) [Holmes et al., 2005; Spitzer et al., 2011].

Statistical Analysis

Our instrument was developed on the basis of 24 items, whose content was derived from clinical experience and the statements of OCD patients. These 24 items were studied using exploratory Principal Axis Factoring of their factor structure and were reduced to 12 items based on substantive and statistical criteria. The resulting factor structure was represented in a path model and tested for fit using the Maximum Likelihood Method. There are numerous quality criteria to evaluate the fit of the overall model [Weiber and Mühlhaus, 2010; Byrne, 2001; Bühner, 2011] for which no generally applicable limit values exist [Leonhart and Stahl, 2007]. Since the χ^2 test is sensitive not only to the sample size, but also to violations of the assumption of normality [Schermelleh-Engel et al., 2003; Byrne, 2001], we only report the χ^2 value descriptively. Instead, we considered the following criteria: Root Mean Square Error of Approximation (RMSEA), ratio of χ^2 value and degrees of freedom (χ^2/DF), Standardized Root Mean Square Residual (SRMR), Goodness of Fit Index (GFI), Normed Fit Index (NFI), Tucker-Lewis Coefficient (TLC), and Comparative Fit Index (CFI). In addition to the parameters for the global fit, local quality indices are reported: the Squared Multiple Correlations (SMC, determined by the standardized factor loadings), which are important for evaluation of the measurement models of the individual factors (latent variables) [Leonhart and Stahl, 2007]. To determine the correlation coefficients, Spearman's Rank Correlation was selected, a conservative approach, while Fischer's z-transformed correlation coefficients were tested using the z test for equality. By using hierarchical regression analyzes for the OCI-R and Y-BOCS (self-rating version; Y-BOCS-SRS) severity scores as criterion variables, we investigated to what extent the included motivational dimensions contributed to the prediction of OCD severity. All analyzes were performed using IBM-SPSS and IBM-AMOS, version 20.

Results

Exploratory Factor Analysis (EFA)

A principal axis factor analysis with Promax rotation (kappa 4) extracted 4 factors with an explained variance of 69.5%. To subdivide the factor structure as finely as possible and to maximize the homogeneity of the individual factors, all factors with an eigenvalue of at least 1 were extracted. Additional factor analyses could not further break down the extracted factors, which may be considered as an indication of the homogeneity of the individual factors [Weiber and Mühlhaus, 2010]. A second-order principal axis factor analysis yielded a superior general factor. The Kaiser-Meyer-Olkin (KMO) coefficient of 0.939, the significant Bartlett Test as well as the Measure of Sample Adequacy (MSA) coefficients ≥ 0.91 indicated that the data structure was in principle suitable for a factor analysis. With the goal of generating the most reliable assessment method with the greatest possible economy, the

indicators derived from factor analysis were reduced to 3 items per factor. The original pool of 24 items was reduced to 12 items on the basis of theoretical and statistical considerations. Individual items were excluded because of low discriminatory power, high loadings on a not corresponding factor, or high similarity to other items.

Structural Equation Modeling (SEM)

The model of the Questionnaire on Self-Related Incompleteness (QSI-12), depicted in figure 1, shows a general factor with 4 sub-factors, each with 3 items, with the following contents: depersonalization (DPE), robot-like self-experience (RLS), lack of lively feelings (LLF), and derealization (DER). Thus, SI relates to the person himself or herself (DPE), the person's own actions (RLS), the person's own feelings (LLF) and the reality (DER) (items and scale classification, table 2). The Structural Equation Model, with a χ^2 value of 84.098 (DF = 50, p = 0.002) according to the rules of thumb of Schermelleh-Engel et al. [2003], exhibits a good model fit (GFI = 0.932; NFI = 0.945; TLI = 0.969; RMSEA = 0.06; χ^2/DF = 1.682; CFI = 0.977; SRMR = 0.0399). The indicator reliabilities, with squared multiple correlations (SMC) ≥ 0.5 , lie well above the critical threshold of 0.4 [Leonhart and Stahl, 2007]. Thus, we could refrain from the application of Modification Indices.

Distribution of Item and Scale Values

The distributions of the item and scale values for the QSI-12 are shown in table 3. The scale RLS shows the highest mean value, the scale DER the lowest. For all items, the total possible response range was used. In the total scale and the subscales, there were slight floor effects.

Internal Consistency and Discriminatory Power

The QSI-12 shows high internal consistencies of $0.83 \leq \alpha \leq 0.88$ for the 4 scales and $\alpha = 0.93$ for the total scale (table 3). The discriminatory power of the individual items ranges from $0.63 < r_{ji} < 0.84$. Item 15 has the lowest discriminatory power, but with an SMC of 0.401, it is still above the critical threshold [Bühner, 2011].

Correlations between the Scales of the QSI-12

As table 4 shows, the scales of the QSI-12 correlate relatively strongly with each another ($0.62 < r < 0.71$), but their intercorrelations are significantly lower ($z(187,187) > 3.32$, p < 0.001) than their correlation with the total scale ($0.85 < r < 0.87$).

Fig. 1. Structural equation model of the QSI-12. All parameters in the figure are standardized values. Rectangles represent manifest (observable) variables, ellipses mark latent (unobservable) variables. Arrows with a point symbolize a path. The values to the upper left of the manifest variables represent SMC, the coefficients on the paths are the corresponding beta weights.

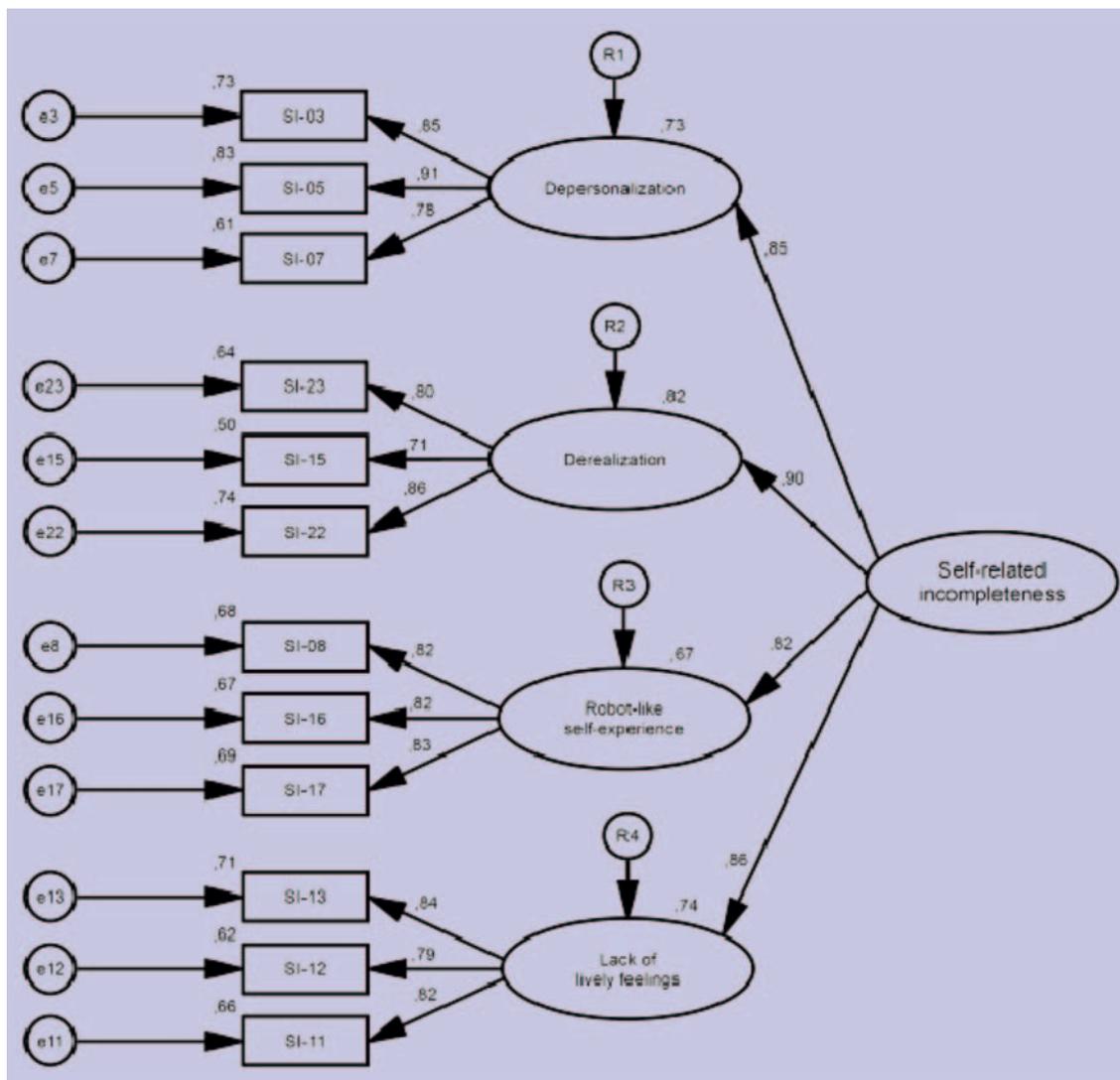


Table 2. QSI-12: Items and scale classification (QSI 1: depersonalization (1, 7, 10); QSI 2: derealization (2, 6, 11); QSI 3: lack of lively feelings (3, 5, 9); QSI 4: robot-like self-experience (4, 8, 12))

During or just before/after an OCD behavior ...	not at all	little	medium	strong	very strong
1. ... I have the feeling that I'm not really there.	0	1	2	3	4
2. ... I see my surroundings as if from 'behind glass'.	0	1	2	3	4
3. ... I feel like I'm not really alive.	0	1	2	3	4
4. ... I feel like a robot/automaton.	0	1	2	3	4
5. ... I feel empty inside.	0	1	2	3	4
6. ... I feel like I'm in another world.	0	1	2	3	4
7. ... I have the feeling of standing next to myself.	0	1	2	3	4
8. ... it feels as if I am 'remote-controlled'.	0	1	2	3	4
9. ... I cannot get in touch with myself.	0	1	2	3	4
10. ... I feel like I'm in a trance.	0	1	2	3	4
11. ... my surroundings seem unreal to me.	0	1	2	3	4
12. ... I act somehow 'mechanically'.	0	1	2	3	4

Table 3. Descriptive statistics and reliability of the QSI-12

Scale	Items	N	A	r_{jt}	r_{Items}	M	SD	MV_{Item}	SD_{Item}
QSI-12	12	190	0.93	0.64–0.75	0.40–0.80	1.56	1.40	0.88–2.23	1.15–1.53
DPE	3	190	0.88	0.70–0.84	0.62–0.80	1.68	1.42	1.13–1.87	1.39–1.43
RLS	3	190	0.86	0.73–0.75	0.67–0.69	1.81	1.44	1.52–2.23	1.38–1.51
LLF	3	190	0.86	0.71–0.75	0.65–0.69	1.72	1.51	1.45–2.00	1.47–1.53
DER	3	190	0.83	0.63–0.72	0.58–0.69	1.03	1.23	0.88–1.27	1.15–1.36

DPE = depersonalization; RLS = robot-like self-experience; LLF = lack of lively feelings; DER = derealization. N = sample size; α = Cronbach's alpha; r_{jt} = part-whole-corrected item-scale correlation (Pearson); r_{Items} = Range of inter-item correlations (Pearson) within each scale; MV_{Item} = range of item mean values of each scale; SD = range of standard deviations of the items of each scale. The rating scale of the questionnaire ranges from 0 (not at all) to 4 (very strong).

Table 4. Spearman correlations of the QSI-12 scales

	QSI-DER	QSI-LLF	QSI-RLS	QSI-12
QSI-DPE	0.71**	0.66**	0.63**	0.87**
QSI-DER		0.69**	0.66**	0.87**
QSI-LLF			0.62**	0.87**
QSI-RLS				0.85**

**p < 0.001 (two-sided).
DPE = depersonalization; DER = derealization; LLF = lack of lively feelings; RLS = robot-like self-experience.

Table 5. Spearman correlations of the QSI-12, INC, and HA with other measures

	QSI-12		INC		HA	
	r	N	R	N	R	N
INC	0.45**	189				
HA	0.36**	189	0.38**	189		
Y-BOCS-SRS	0.41**	171	0.46**	170	0.44**	170
CDS-9k	0.60**	176	0.27**	175	0.21**	175
OCI-R	0.52**	190	0.64**	189	0.38**	189
PSWQ-D	0.28**	179	0.36**	179	0.53**	179
BAI	0.34**	180	0.24**	179	0.39**	179
BDI	0.41**	177	0.36**	176	0.45**	176
PSSI-CS	0.21*	180	0.45**	179	0.23**	179

*p < 0.01 (two-sided).
**P < 0.001 (two-sided).
INC = subscale 'Incompleteness' of the Obsessive-Compulsive Trait Core Dimensions Questionnaire-Revised;
HA = subscale 'Harm avoidance' of the Obsessive-Compulsive Trait Core Dimensions Questionnaire-Revised;
Y-BOCS-SRS = severity score of the Yale-Brown Obsessive Compulsive Scale (self-rating version); CDS 9k = Cambridge Depersonalization Scale (German version; short scale); OCI-R = Obsessive-Compulsive Inventory-Revised;
PSWQ-D = Penn State Worry Questionnaire-German; BAI = Beck Anxiety Inventory; BDI = Beck Depression Inventory;
PSSI-CS = subscale 'Careful Style' of Personality Style and Disorders Inventory.

Construct Validity

Table 5 shows the correlations relevant to construct validity. The QSI-12 correlates moderately with incompleteness in terms of NJREs (INC), and also with HA. It also shows a medium correlation with the Y-BOCS-SRS and a high correlation with the OCI-R. In accordance with our hypotheses, there is a significantly higher correlation between CDS-9k and QSI-12 than between CDS-9k and INC ($z(173, 172) = 3.79, p < 0.001$). Similarly, there is a significantly lower cor-

relation between the subscale 'Careful Style' of the Personality Style and Disorders Inventory (PSSI-CS) and the QSI-12 than between the PSSI-CS and INC ($z(177, 176) = 2.54, p < 0.01$). Finally, correlations with scales assessing psychopathological phenomena other than obsessions/compulsions (depression, anxiety, pathological worry) are weak (e.g., Penn State Worry Questionnaire (PSWQ) and PSSI-CS) to moderate (e.g., Beck Depression Inventory (BDI [Beck and Steer, 1987]) and Beck Anxiety Inventory (BAI [Beck and Steer, 1993])).

Table 6. Predictors of OCD severity (Y-BOCS-SRS)

	B	SD B	β	t	partial r
BAI	0.07	0.05	0.11	1.26	0.10
BDI	0.06	0.06	0.09	1.01	0.08
CDS-9k	-0.15	0.13	-0.10	-0.14	-0.09
PSWQ-D	0.02	0.06	0.03	0.32	0.03
HA	1.49	0.59	0.20	2.51*	0.20
INC	1.86	0.52	0.27	3.61**	0.28
QSI-12	1.46	0.57	0.22	2.56*	0.20

* = $p < 0.05$.
** = $p < 0.001$.
B = beta weight; SD B = standard deviation of beta weights; β = standardized beta weight; t = empirical t value; partial r = partial correlation with Y-BOCS severity scale; model statistics = $R^2 = 0.366$; corrected $R^2 = 0.34$; $F(7.162) = 12.793$; $p < 0.001$; $\Delta R^2 = 0.20$; corrected $\Delta R^2 = 0.18$; $\Delta F(4.162) = 9.999$.
BAI = Beck Anxiety Inventory; BDI = Beck Depression Inventory; CDS 9k = Cambridge Depersonalization Scale (German version; short scale); PSWQ-D = Penn State Worry Questionnaire-German; HA = subscale 'Harm avoidance' of the Obsessive-Compulsive Trait Core Dimensions Questionnaire-Revised; INC = subscale 'Incompleteness' of the Obsessive-Compulsive Trait Core Dimensions Questionnaire-Revised.

Table 7. Predictors of OCD severity (OCI-R total score)

	B	SD B	β	t	partial r
BAI	-0.02	0.09	-0.01	-0.19	-0.02
BDI	0.22	0.10	0.18	2.39*	0.18
CDS-9k	-0.04	0.210	-0.01	-0.18	-0.02
PSWQ-D	0.02	0.10	0.02	0.24	0.02
HA	1.98	0.95	0.14	2.08*	0.16
INC	5.48	0.84	0.41	6.51**	0.45
QSI-12	3.27	0.91	0.25	3.59**	0.27

* = $p < 0.05$.
** = $p < 0.001$.
B = beta weight; SD B = standard deviation of beta weights; β = standardized beta weight; t = empirical t-value; partial r = partial correlation with the OCI-R total score.
Model statistics = $R^2 = 0.53$; corrected $R^2 = 0.51$; $F(7.171) = 26.759$; $p < 0.001$; $\Delta R^2 = 0.29$; corrected $\Delta R^2 = 0.27$; $\Delta F(4.171) = 17.136$.
BAI = Beck Anxiety Inventory; BDI = Beck Depression Inventory; CDS 9k = Cambridge Depersonalization Scale (German version; short scale); PSWQ-D = Penn State Worry Questionnaire-German; HA = subscale 'Harm avoidance' of the Obsessive-Compulsive Trait Core Dimensions Questionnaire-Revised; INC = subscale 'Incompleteness' of the Obsessive-Compulsive Trait Core Dimensions Questionnaire-Revised.

Hierarchical Regression Analyses

The influence of motivational variables (HA, INC, and SI) on the Y-BOCS severity score and the OCI-R total score was examined via hierarchical multiple regression analyses. In both analyses, depersonalization/derealization (CDS-9k), pathological worry (PSWQ), depression (BDI), and anxiety (BAI) were entered, in the first block, as control variables into the regression equation, followed by HA, NJREs (INC), and SI (QSI-12) in the second block. We tested whether these 3 variables independently contributed to the prediction of OCD severity. The correlations between predictor variables were between $0.21 < r < 0.60$. Tolerance values of > 0.53 showed no significant collinearity among the predictors [Brosius, 2011].

In the regression analysis with the Y-BOCS-SRS as the dependent variable (table 6), INC, HA, and SI each explained a

significant amount of criterion variance independently from the other predictors. Depression, anxiety, pathological worry, and depersonalization/derealization explained no significant proportion of variance. In the regression analysis with the OCI-R total score as the dependent variable (table 7), INC, HA, and SI as well as depression explained an independent amount of variance, while the other control variables had no significant effect on the OCI-R.

Thus, all 3 motivational dimensions independently contributed to the prediction of OCD severity, regardless of whether severity was assessed by the Y-BOCS-SRS or by the OCI-R total score. The beta weights for the prediction of the Y-BOCS-SRS score were of comparable size; for the prediction of the OCI-R total score, INC had the largest beta weight, followed by SI and HA.

Discussion

SI is discussed as a possible, clinically meaningful motivational dimension in OCD [Ecker and Gönner, 2006]. This study describes the development of a new self-rating instrument, the QSI-12, for measuring SI. The questionnaire assesses SI on 4 clinically meaningful dimensions (DPE, DER, RLS, LLF); SI is seen as an altered experience of self, of reality, of one's actions, and of one's feelings. The results of the study show that the QSI-12 is a reliable and valid instrument to assess SI. A linear structural equation model shows a good fit between empirical data and model structure. An only moderate correlation between SI and NJRE suggests that both constructs are different in content, although not completely independent, and that SI is an aspect of incompleteness experiences that can be differentiated from NJREs (hypothesis 1). SI shows a high correlation with depersonalization/derealization (hypothesis 2), while NJREs show a medium correlation with obsessive-compulsive personality traits (hypothesis 3). In accordance with our Hypotheses 4 and 5, SI is more closely related to depersonalization/derealization than NJREs, while NJREs are more closely related to obsessive-compulsive personality traits than SI. This differential and theoretically meaningful pattern of correlations with anancastic and dissociative features corroborates the construct validity of both aspects of incompleteness.

All 3 motivational dimensions investigated in our study (SI, NJREs, HA) showed a comparable, moderate correlation with the Y-BOCS-SRS. Correlation with the OCI-R total score was high for NJREs and SI, and moderate for HA. In view of the fact that there are additional motivational dimensions clinically relevant for OCD (e.g., avoidance of guilt feelings, avoidance of disgust in washing compulsions) [Ecker and Gönner, 2008], the level of correlations between the motivational dimensions assessed by us, and OCD severity can be judged as very satisfactory.

Low to moderate correlations indicate an acceptable divergent validity of SI with anxiety, pathological worry, and depression. In accordance with the particularly high comorbidity of OCD with depression [Förstner et al., 2011], the correlation of SI with depression is the highest. However, the independent contribution of SI to the prediction of OCD severity, even when taking into account depression as a control variable, shows that SI cannot be reduced to an epiphenomenon of depression. In addition to HA, both SI and NJREs independently contribute to the prediction of OCD severity, even when other psychopathological phenomena are controlled (hypothesis 1). Therefore, although both constructs can be derived from Janet's [1903] clinical descriptions of the 'sentiment d'incomplétude', this result supports our view that they describe phenomena which are clearly distinguishable and yet equally relevant to OCD. Depersonalization/derealization, on the other hand, in accordance with hypothesis 2, does not independently contrib-

ute to the prediction of OCD severity. Thus, all hypotheses are confirmed.

Incompleteness experiences are characteristic internal states of individuals suffering from OCD, which are difficult to put into words. So far, there is no consensus concerning their definition [Prado et al., 2008]. Thus, 57% of sufferers describe them as exclusively mental phenomena, while 42% say they include both mental and physical components [Leckman et al., 1995]. Numerous concepts, overlapping to varying degrees, have been discussed, including 'sensory phenomena' [Prado et al., 2008, p. 425; Lee et al., 2009, p. 431], 'sensory incompleteness' triggering tics [O'Connor, 2005, p. 195], 'sensory perfectionism' [Coles et al., 2003, p. 683], or 'abnormal absence of a "terminator emotion"' [Szechtman and Woody, 2004, p. 111]. Even with regard to the now internationally most common term NJREs, it is unclear, according to Taylor et al. [2006], whether this is a purely sensory or affective phenomenon or whether a cognitive component can be assumed. The multitude of description levels (mental and/or physical state, feeling, type of perfectionism, absence of emotion, etc.) highlights the complexity and heterogeneity of the phenomenon. Thus, we hope to contribute with this study to a further differentiation of the still largely unexplored phenomenology of incompleteness experiences based on empirical data, and to underline the importance of SI as an aspect of incompleteness experiences which is clearly distinct from NJREs.

With the QSI-12, we provide an economical screening instrument for the assessment of SI. In combination with the Obsessive-Compulsive Trait Core Dimensions Questionnaire-Revised (OCTCDQ-R [Ecker et al., 2011]), which measures NJREs and HA, it is now possible to cover 3 clinically relevant motivational dimensions of OCD with a total of only 22 items. Both measures facilitate therapeutic communication with individuals with incompleteness-related OCD symptoms, as it is often difficult for sufferers to find accurate words to describe their experiences of SI or NJREs. Consequently, they are often relieved to find their symptoms described in the examples given in the 2 questionnaires [Ecker et al., 2010].

Moreover, there are different therapeutic implications depending on whether OCD symptoms are related to SI or to NJREs. In our clinical experience, and consistent with findings on the connection between dissociation and traumatic experiences in people with OCD [Lochner, 2004; Rufer et al., 2006; Fricke et al., 2007; Maier et al., 2009], SI frequently arises in the context of traumatic or emotionally harrowing experiences at the onset of OCD, which are often recalled for the first time in the process of biographical exploration during exposure [Hoffmann and Hofmann, 2008; Ecker et al., 2010]. It seems to be helpful in clinical practice, then, to go beyond a purely habituation-based approach, with a combination of biographical reconstruction during exposure and the use of so-called 'subject-constituting' exercises [Hoffmann and Hofmann, 2010]. The latter methods help patients to 'shake off' their dissociative 'incompleteness trance' in OCD-relevant

situations. They are also useful, because dissociative processes may impair the success of exposure [Maier et al., 2009]. OCD symptoms motivated by NJREs, according to Summerfeldt [2007, 2008], constitute the most extreme variants of obsessive-compulsive or 'pathologically perfectionistic' personality traits. Here, we recommend exposure with the goal of habituation of NJREs, parallel to the mitigation of the anancastic personality accentuation [Ecker et al., 2010], while in our clinical experience, access to biographical information during exposure is only rarely possible. Thus, the results of the QSI-12 and the OCTCDQ-R in individual cases are important to fine-tune therapeutic procedures derived from the identification of different 'leitmotifs' (SI vs. NJREs) within the subgroup of OCD patients with incompleteness-related symptoms.

The severity of OCD symptoms between the inpatient and the (smaller) outpatient subsamples did not differ significantly, suggesting a generalizability of results to outpatient cases. Since the outpatient sample tends to include milder cases, however, it seems to us that an independent investigation of the factor structure in an outpatient sample would be worthwhile. Replications outside German-speaking countries are also necessary.

Moreover, it should be noted that while clinical experience of SI as part of OCD symptoms has led to plausible hypotheses concerning their biographical development in the context of traumatic or emotionally harrowing experiences [Hoffmann and Hofmann, 2008; Ecker et al., 2010], these hypotheses have not yet been empirically tested. Nonetheless, the development of the QSI-12 facilitates further empirical research concerning the role of SI in OCD and may also help us to examine the phenomenon in relation to current cognitive-behavioral and neurobiological OCD models. Finally, it should be mentioned that the independent contributions of SI and NJREs to the prediction of OCD severity clearly demonstrate that a conceptualization of OCD as a pure anxiety disorder with a focus on HA is too narrow [Ecker and Gönner, 2008].

Disclosure Statement

The authors declare that there is no conflict of interest. No financial support was provided that affected the publication or implementation of this study.

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References

- Abramowitz JS, Deacon BJ: Psychometric properties and construct validity of the Obsessive-Compulsive Inventory-Revised: replication and extension with a clinical sample. *J Anxiety Disord* 2006;20:1016–1035.
- Baer L: Alles unter Kontrolle – Zwangsgedanken und Zwangshandlungen überwinden. Bern, Huber, 1993.
- Beck A, Steer RA: Beck Depression Inventory. San Antonio, The Psychological Corporation, 1987.
- Beck A, Steer RA: Beck Anxiety Inventory. San Antonio, The Psychological Corporation, 1993.
- Brosius F: SPSS 19. Heidelberg, mitp, 2011.
- Bühner M: Einführung in die Test- und Fragebogenkonstruktion, ed 3. München, Addison-Wesley, 2011. www.worldcat.org/oclc/680753876 (Accessed 07.02.2013).
- Byrne BM: Structural Equation Modeling with AMOS. Basic Concepts, Applications, and Programming. Mahwah, Lawrence Erlbaum Associates, 2001.
- Calamari JE, Wiegartz PS, Riemann BC, et al.: Obsessive-compulsive disorder subtypes: an attempted replication and extension of a symptom-based taxonomy. *Behav Res Ther* 2004;42:647–670.
- Coles ME, Frost RO, Heimberg RG, Rhéaume J: 'Not just right experiences': perfectionism, obsessive-compulsive features and general psychopathology. *Behav Res Ther* 2003;41:681–700.
- Coles ME, Heimberg RG, Frost RO, Steketee G: Not just right experiences and obsessive-compulsive features: experimental and self-monitoring perspectives. *Behav Res Ther* 2005;43:153–167.
- Coles ME, Pinto A, Mancebo MC, et al.: OCD with comorbid OCPD: a subtype of OCD? *J Psychiat Res* 2008;42:289–296.
- Ecker W, Gönner S: Das Unvollständigkeitsgefühl. Neuentdeckung eines alten psychopathologischen Symptoms bei Zwangserkrankungen. *Nervenarzt* 2006;77:1115–1122.
- Ecker W, Gönner S: Unvollständigkeits erleben als Bindeglied zwischen zwanghaften Persönlichkeitszügen und spezifischen Symptomdimensionen der Zwangsstörung. *Persönlichkeitsstörungen* 2007;11:111–122.
- Ecker W, Gönner S: Incompleteness and harm avoidance in OCD symptom dimensions. *Behav Res Ther* 2008;46:895–904.
- Ecker W, Gönner S, Wilm K: Unvollständigkeits erleben bei Menschen mit Zwängen: Implikationen für Diagnostik und Behandlung; in Fiedler P, Heim G (eds): Psychotherapie: Vom Automatismus zur Selbstkontrolle. Pierre Janet Beiträge zur modernen Psychiatrie und Psychologie, Bd 2. Lengerich, Pabst Science Publishers, 2010, pp 40–67.
- Ecker W, Wilm K, Gönner S: Die Messung von Motivdimensionen der Zwangsstörung: Unvollständigkeits erleben und Schadensvermeidung. *Psychother Psychosom Med Psychol* 2011;61:62–69.
- Foa EB, Huppert JD, Leiberg S et al.: The Obsessive-Compulsive Inventory: development and validation of a short version. *Psychol Assess* 2002;14:485–496.
- Förstner U, Külz AK, Voderholzer U: Störungsspezifische Behandlung von Zwangsstörungen. Ein Therapiemanual. Stuttgart, Kohlhammer, 2011.
- Fricke S, Köhler S, Moritz S, et al.: Frühe interpersonale Traumatisierungen bei Zwangserkrankungen: Eine Pilotstudie. *Verhaltenstherapie* 2007;17:243–250.
- Ghisi M, Rocco Chiri L, Marchetti I, et al.: In search of specificity: 'not just right experiences' and obsessive-compulsive symptoms in non-clinical and clinical Italian individuals. *J Anxiety Disord* 2010;24:879–886.
- Gönner S, Ecker W, Leonhart R: Obsessive-Compulsive Inventory-Revised (OCI-R). Deutsche Adaptation. Manual. Frankfurt/M., Pearson Assessment and Information, 2009.
- Gönner S, Limbacher K, Ecker W: Stationäre kognitive Verhaltenstherapie bei Zwangsstörungen: Effektivität und Erfolgsprädiktoren in der Routineversorgung. *Verhaltenstherapie* 2012;22:17–26.
- Goodman WK, Price LH, Rasmussen SA, et al.: The Yale-Brown Obsessive Compulsive Scale. I. Development, use, and reliability. *Arch Gen Psychiat* 1989;46:1006–1011.
- Hautzinger M, Bailer M, Worall H, Keller F: Beck-Depressionsinventar (BDI). Bern, Huber, 2001.
- Hiller W, Zaudig M, Mombour W: IDCL. Internationale Diagnosen Checklisten für ICD-10 und DSM-IV. Bern, Hans Huber, 1995.
- Hoffmann N: Zwänge und Depressionen. Pierre Janet und die Verhaltenstherapie. Berlin, Springer, 1998.
- Hoffmann N, Hofmann B: Expositionen bei Ängsten und Zwängen. Praxishandbuch ed 2. Weinheim, Beltz PVU, 2008.
- Hoffmann N, Hofmann B: Zwanghafte Persönlichkeitsstörung und Zwangserkrankungen. Therapie und Selbsthilfe. Berlin, Springer, 2010.
- Holmes EA, Brown RJ, Mansell W, et al.: Are there two qualitatively distinct forms of dissociation? A review and some clinical implications. *Clin Psychol Rev* 2005;25:1–23.
- Janet, P: Les Obsessions et la Psychasthénie. Paris, Alcan, 1903.
- Kuhl J, Kazén M: Persönlichkeits-Stil und Störungs-Inventar (PSSI). Göttingen, Hogrefe, 1997.
- Leckman JF, Grice DE, Barr LC, et al.: Tic-related vs. non-tic-related obsessive-compulsive disorder. *Anxiety* 1995;1:208–215.
- Lee JC, Prado HS, Diniz JB, et al.: Perfectionism and sensory phenomena: phenotypic components of obsessive-compulsive disorder. *Compr Psychiatry* 2009;50:431–436.

- Leonhart R, Stahl C: Globale und lokale Anpassungsmaße zur Beurteilung einer konfirmatorischen Faktorenanalyse – am Beispiel des InstEval; in Krämer M, Preiser S, Brusdeylins K (eds): *Psychologie didaktik und Evaluation VI*. Vandenhoeck und Ruprecht Unipress, 2007, pp 347–355.
- Lochner C, Seedat S, Hemmings SMJ, et al.: Dissociative experiences in obsessive-compulsive disorder and trichotillomania: clinical and genetic findings. *Compr Psychiatry* 2004;45:384–391.
- Maier S, Külz AK, Voderholzer U: Traumatisierung und Dissoziationsneigung bei Zwangserkrankten: Ein Überblick. *Verhaltenstherapie* 2009;19:219–227.
- Margraf J, Ehlers A: *Das Beck-Angstinventar (BAI)*. Göttingen, Testzentrale, 2002.
- Michal M, Sann U, Niebecker M, et al.: Die Erfassung des Depersonalisations-Derealisations-Syndroms mit der deutschen Version der Cambridge Depersonalisation Scale (CDS). *Psychother Psychosom Med Psychol* 2004;54:367–374.
- O'Connor K: Contrasting Tourette's Syndrome and tic disorders with OCD; in Abramowitz JS, Houts AC (eds): *Concepts and Controversies in Obsessive-Compulsive Disorder*. New York, Springer, 2005, pp 191–205.
- Pietrefesa AS, Coles ME: Moving beyond an exclusive focus on harm avoidance in OCD: behavioral validation for the separability of harm avoidance and incompleteness. *Behav Ther* 2009;40:251–259.
- Prado H, Rosário MC, Lee J, et al.: Sensory phenomena in obsessive-compulsive disorder and tic disorders: a review of the literature. *CNS Spectr* 2008;13:425–432.
- Rufer M, Fricke S, Held D, et al.: Dissociation and symptom dimensions of obsessive-compulsive disorder. *Eur Arch Psychiatry Clin Neurosci* 2006;256:146–150.
- Schermelleh-Engel K, Moosburger H, Müller H: Evaluating the fit of structural equation models: test of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online* 2003;8:23–74.
- Sierra M, Berrios GE: The Cambridge Depersonalization Scale: a new instrument for the measurement of depersonalization. *Psychiatry Res* 2000;93:153–164.
- Spitzer C, Wibisono D, Freyberger H: Theorien zum Verständnis von Dissoziation; in Seidler GH, Freyberger HJ, Maercker A (eds): *Handbuch der Traumalogie*. Stuttgart, Klett-Cotta, 2011, pp 22–37.
- Stöber J: Besorgnis: Ein Vergleich dreier Inventare zur Erfassung allgemeiner Sorgen. *Zeitschrift für Differentielle und Diagnostische Psychologie* 1995;16:50–63.
- Summerfeldt LJ, Kloosterman PH, Parker JDA, et al.: Assessing and validating the obsessive-compulsive-related construct of incompleteness. Poster presented at the 62nd annual convention of the Canadian Psychological Association, Ste-Foy, Quebec, 2001.
- Summerfeldt LJ: Understanding and treating incompleteness in obsessive-compulsive disorder. *J Clin Psychol* 2004;40:1–14.
- Summerfeldt LJ: Treating incompleteness, ordering, and arranging concerns; in Antony MM, Purdon C, Summerfeldt LJ (eds): *Psychological Treatment of Obsessive-Compulsive Disorder: Fundamentals and Beyond*. Washington, American Psychological Association, APA, 2007, pp 187–207.
- Summerfeldt LJ: Ordering, incompleteness, and arranging; in Abramowitz JA, McKay D, Taylor S (eds): *Clinical Handbook of Obsessive-Compulsive Disorder and Related Problems*. Baltimore, John Hopkins University Press, 2008, pp 316–333.
- Szechtman H, Woody E: Obsessive-compulsive disorder as a disturbance of security motivation. *Psychol Rev* 2004;111:111–127.
- Taylor S, Abramowitz JS, McKay D, et al.: Do dysfunctional beliefs play a role in all types of obsessive-compulsive disorder? *J Anxiety Disord* 2006;20:85–97.
- Thiemann, E-M, de Jong-Meyer R, Böhne A: Internetstudie zum Unvollständigkeitsgefühl als Symptom der Zwangsstörung. *Z-Aktuell* 2008;3:10–11.
- Thordarson DS, Radomsky AS, Rachman S, et al.: The Vancouver Obsessional Compulsive Inventory (VOCI). *Behav Res Ther* 2004;42:1289–1314.
- Wahl K, Salkovskis PM, Cotter I: «I wash until it feels right'. The phenomenology of stopping criteria in obsessive-compulsive washing. *J Anxiety Disord* 2008;22:143–161. Weiber R, Mühlhaus D: *Strukturgleichungsmodellierung. Eine anwendungsorientierte Einführung in die Kausalanalyse mit Hilfe von AMOS, SmartPLS und SPSS*. Heidelberg, Springer, 2010.