Differential Cognitive Treatment of Polythematic Delusions and Generalized Anxiety Disorder

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Summary Schizophrenia is often associated with other physical and mental problems. Generalized anxiety disorder is notably one of the comorbid disorders which is often linked to schizophrenia. The association of polythematic delusions and of ideas resulting from generalized anxiety disorder complicates the exercise of the corresponding cognitive therapy, for the resulting ideas are most often inextricably intertwined. In what follows, we endeavour to propose a methodology for the differential treatment of polythematic delusions inherent to schizophrenia when combined with ideas originating from generalized anxiety disorder. We propose, with regard to the corresponding content of delusions, an analysis which allows under certain conditions, to separate the content associated with polythematic delusions and the one that relates to generalized anxiety disorder, in order to facilitate the exercise of the corresponding cognitive therapy.

Generalized anxiety disorder is a comorbid disorder which is commonly associated with schizophrenia. Such co-morbidity is likely to render more complex and difficult the corresponding cognitive therapy. In what follows, we strive to provide a methodology to allow for a differential treatment of polythematic delusions inherent to schizophrenia when associated with generalized anxiety disorder. We describe then, based on the content of the corresponding delusions, an analysis which allows, under certain conditions, to separate the content relating to the polythematic delusions and the one that concerns generalized anxiety disorder, in order to facilitate the implementation of the corresponding cognitive therapies.

Schizophrenia and co-morbidity

One of the difficulties inherent in the treatment of schizophrenia is the frequent co-morbidity that relates to the disease. This comorbidity bears either on physical conditions, or other psychiatric disorders. A co-morbidity of schizophrenia with physical [Sim et al affections. 2006] or neuropsychiatric disorders such as Tourette's syndrome [Kerbeshiana et al. 2009], has then been observed. It was also found co-morbidity with other psychiatric disorders, which is very common [Bermanzohn 2000]. A significant co-morbidity has been ascertained

in particular with depression (25%) [Bressan et al. 2003, Kim et al. 2008] and obsessive-compulsive disorder (26.50%) [Berman et al. 1995 Guillem et al. 2009]. Similarly, comorbidity within the sphere of anxiety disorders turns out to be quite common [Cosoff & Hafner, 1998, Braga et al. 2004]. It was thus demonstrated high rates of comorbidity with agoraphobia (8.20%) [Goodwin et al. 2002], panic disorder (13.80%) [Pallanti et al. 2004], generalized anxiety disorder (GAD), social phobia (13.30%) [Tibbo et al. 2003] or a specific phobia (13.60%) [Goodwin et al. 2002]. However, the co-morbidity of schizophrenia with certain disorders, such as intermittent explosive disorder, seems to have been little studied.

The comorbidity of schizophrenia with other psychiatric disorders does not lack to pose several problems in the treatment of the disease. First, such comorbidity is a factor that makes it difficult to improve the health status of the patient [Sim et al. 2006]. Second, the comorbidity of schizophrenia with other psychiatric disorders raises some specific issues that are important for cognitive and behavioral therapy of schizophrenia. Thus, the frequent comorbidity of schizophrenia with one or more associated disorders, suggests that it might be useful to adapt the corresponding cognitive therapy. In this sense, it may be useful to distinguish cognitive therapy targeted to polythematic delusions, from the therapy related to the comorbid disorders encountered in the patient. In any event, the introduction of a differential treatment of schizophrenia and comorbid disorders has specific aspects that should be highlighted. Such differential treatment requires for the therapist that the different disorders are well defined and especially that the therapist can distinguish within the patient's speech what is relevant to the specific disorder that he/she aims to treat. In this context, the association of two or more disorders does not fail to create some confusion, for the patient's delusions are often inextricably linked to ideas that arise from the co-morbid disorder(s). Thus, in the words of the patient, it is worth distinguishing between what is actual symptoms of schizophrenia (essentially polythematic delusions) and what results from the associated comorbid disorders, such as: depression, TAG, body dysmorphic disorder, social phobia, special phobia. This complex situation has the effect of making more difficult the corresponding cognitive therapy.

The difficulties just mentioned apply especially when schizophrenia is associated in patients with GAD, for which a co-morbidity rate of 12% [Cosoff & Hafner 1998] and 16.70% [Tibbo et al. 2003] were found. We propose, in what follows, to interest ourselves in the comorbidity of schizophrenia and TAG, and to proceed to describe in detail a methodology for distinguishing among the patient's delusions, the content resulting from polythematic delusions proper from what is inherent to the TAG.

Instances of differentiation: polythematic delusions and anxiogenous ideas

The association of the content of these delusional ideas met in schizophrenia and anxiogenous ideas inherent to TAG may take different forms. For ease of analysis, we will work to identify certain stereotyped forms, among the mixed ideas resulting from this association. We shall use the classically defined delusions (delusions of reference, of telepathy, of thought-projection, of influence, or of control) and anxiogenous ideas whose structure is that of the projection of a negative future event. Let us consider then the mixed ideas likely to be encountered in the context of the association of polythematic delusions associated with schizophrenia and GAD (with the following abbreviations: R for *reference*, T for *telepathy*, P for *thought-projection*, I for *influence*, C for *control*):

(R1) “Next week, TV presenters will again talk about me”.

(T1) “I am sure that in five minutes, the neighbor will again comment on my thoughts”.

(P1) “I am sure that soon, people in the street will again start yelling because they are disturbed by my thoughts”.

(I1) “Tomorrow, I will again create an accident, because of the disruption that I create in others with my bad mood”.

(C1) “I am sure that when they will arrive, the neighbors will still make me break things by controlling me”.

These are mental constructs that combine both delusions which are specific to schizophrenia and anxiety ideas resulting from TAG (the structure of the latter being that of the anticipation of the occurrence of a future event of a negative nature). It is worth at this stage determining the structure of these mixed ideas in order to highlight what constitutes polythematic delusions proper and what is inherent in the TAG. Thus, in (R1) is contained, first, the delusion that the media talk about the patient, which is an instance of the delusion of reference. Second, the expectation that a negative event will occur, i.e. the media will speak again about the patient, is also present in (R1). Such an anticipation on a future event of a negative nature, has a special structure, which consists in the projection into the future of the occurrence of a negative event concerning the patient, even in the absence of an objective basis. This is one of the manifestations of the role played in TAG by expectations on indeterminate situations related to future events [Butler & Mathews 1987]. Most often, the patient considers a future event as certain, even though the probability of the event in question's occurrence is much lower. Such anxiogenous idea has the structure below [Franceschi 2008a] (the patient's anxiogenous idea occurs at time T_0, with $T_0 < T_1$):

(A) at time T_1, the event E of a negative nature, will occur — anxiogenous idea

Given the above, we can now decompose the mixed idea (R1) in two separate ideas i.e. on the one hand, the delusion of reference and on the other hand, the projection of a negative future event:

(R) “Television and the media speak about me” — delusion of reference

(A_R) at time T_1 (“Next week”) the event E (“The presenters de television will speak about me”) of a negative nature, will occur — mixed anxiogenous idea

At this stage, it is now possible to apply a principle of cognitive therapy specific to TAG to the resulting anxiogenous mixed idea, by considering alternative hypotheses to the occurrence of the negative event, by notably considering the hypothesis that other events, of a positive nature, may occur. It also turns out that the same analysis can be applied to mixed propositions (T1), (P1), (I1) and (C1), in the following way:

(T) “The neighbors know the least of my thoughts” — delusion of telepathy

(A_T) at time T_1 (“by five minutes”) the event E (“the neighbor will comment on my thoughts”) of a negative nature, will occur — mixed anxiogenous idea

(P) “People react according to what I think and start screaming” — thought projection delusion

(A_P) at time T_1 (“in a moment”) the event E (“people in the street will begin to cry because they are disturbed by my thoughts”) of a negative nature, will occur — mixed anxiogenous idea

(I) “People are disturbed by my thoughts” — delusion of influence

(A_I) at time T_1 (“tomorrow”) the event E (“I'm going to cause an accident, because of the disruption that I create in others with my bad mood”) of a negative nature, will occur — mixed anxiogenous idea

(C) “I have feelings and emotions according to what people — delusion of control

do”

(A_C) at time T_1 (“when they will arrive”) the event E (“the mixed anxiogenous idea neighbors will make me break things by controlling me”) of a negative nature, will occur

However, it turns out that the application of a principle cognitive therapy inherent to GAD to the mixed anxiety ideas resulting from the above analysis, is likely to present a problem. Indeed, a questioning of the form "Is it certain that the television will still talk to you tomorrow?" or "Isn't it possible that television will not speak about you tomorrow? may give the impression that the therapist adheres to the patient's delusional ideas of reference, which might be likely to strengthen them. To avoid this problem, it may be useful to eliminate the delusional content in the mixed anxiety-provoking idea. For once such removal is done, the principle of cognitive therapy inherent to GAD can then be applied directly to the residual anxiety idea without the aforementioned drawback begin faced. The methodology we propose to transform the mixed anxiety idea into a pure anxiety idea is based on the process of formation of the patient's delusions. The development of the delusional ideas (R) (T) (P), (I) and (C) is carried starting from the primary delusional arguments, based on the attribution by the patient of a causal relationship when faced with the occurrence of two quasi-simultaneous events [Hemsley 1992 Franceschi 2008b]. Such primary delusional arguments have the following structure (the symbol ∴ denotes the conclusion):

(R1)	in T_1 I was drinking an aperitif	$premiss_1$
(R2)	in T_2 the presenter of the show said: “Stop drinking !”	$premiss_2$
(R3)	∴ in T_2 the presenter of the show said: “Stop drinking !” because in T_1 I was drinking an aperitif	conclusion
(T1)	in T_1 I thought of Jacques “What an idiot !”	$premiss_1$
(T2)	in T_2 I heard Jacques say: “Enough!”	$premiss_2$
(T3)	∴ in T_2 I heard Jacques say, "Enough! "Because in T_1 I thought of him,"What an idiot!"	conclusion
(P1)	in T_1 I thought of someone who passed on the street "is badly dressed!"	$premiss_1$
(P2)	in T_2 I heard someone who passed on the street shout	$premiss_2$
(P3)	∴ in T_2 I heard someone who passed in the street screaming because in T_1 I thought of of him "He's badly dressed!"	conclusion
(I1)	in T_1 I had a very bad mood	$premiss_1$
(I2)	in T_2 I heard there was a car accident in the street	$premiss_2$
(I3)	∴ in T_2 there was a car accident in the street because in T_1 I was in a very bad mood	conclusion
(C1)	in T_1 the neighbor has moved	$premiss_1$
(C2)	in T_2 I broke a glass	$premiss_2$
(C3)	∴ in T_2 I broke a glass because in T_1 the neighbor has moved	conclusion

Such a structure from primary delusional arguments reveals that in instances of primary arguments of *reference*, of *telepathy*, of *thought projection* and of *influence*, an internal event

to the patient (thought, emotion, feeling, action) slightly precedes an external event, in the following manner:

(α1)	in T_1 the internal event E_1 has occurred	$premiss_1$
(α2)	in T_2 the external event E_2 has occurred	$premiss_2$
(α3)	$\therefore$ in T_2 the external event E_2 has occurred because in T_1 the internal event E_1 has occurred	conclusion

In contrast, at the level of the instances of primary arguments of *control*, it is the event which is external to the patient that precedes an internal event:

(β1)	in T_1 the external event E_1 has occurred	$premiss_1$
(β2)	in T_2 the internal event E_2 has occurred	$premiss_2$
(β3)	$\therefore$ in T_2 the internal event E_2 has occurred because in T_1 the external event E_1 has occurred	conclusion

In this context, the elimination of the delusional content from mixed delusions can then be performed. For this, one eliminates from the mixed anxiogenous idea the mere idea of *causality*, by only retaining the event which constitutes the object of the anxiogenous idea, in the following way:

(A_I)	at time T1 ("tomorrow") the event E ("I'm going to create an accident, because of the disturbance that I create in others with my bad mood") of a negative nature, will occur	mixed anxiogenous idea
(B_I)	at time T1 ("tomorrow") the event E ("there will be an accident in the street") of a negative nature, will occur	pure anxiogenous idea

The methodology used here is thus to eliminate the delusional content in the speech of the patient and replace it with factual content, to which we can then apply a classical form of cognitive therapy for GAD, based on the consideration of alternative hypotheses: "Isn't it possible that no accident occurs on the street tomorrow? "(I); "Isn't it possible that tomorrow you could not break your glass? "(C); "Can't we consider that no passer-by shouts in the street just now? "(P). Such formulation has thus the advantage of enabling the direct implementation of the very principle of the cognitive therapy inherent to TAG without facing the above-mentioned drawback.

Conclusion

In cognitive therapy of schizophrenia raises the question of the appropriate treatment of comorbid disorders associated with it. Regarding particularly GAD, which is often associated with schizophrenia, several questions arise as well. The first question is thus whether it is appropriate that two different therapists take care one of the therapy for GAD, and the other of the therapy for delusions. A second question, in this context, is whether it is better to implement the GAD therapy before that targeted at delusions [17,18]. The answer to these questions is beyond the scope of this study, but it may be important in the strategy implemented for cognitive therapy of schizophrenia.

At this point, it turns out that the usefulness of the above analysis it that it allows for simplifying the cognitive therapy in the case where there is a comorbid schizophrenia and TAG, in that it separates in the content of the original complex discourse of the patient, what is delusions proper and what is inherent in the TAG. This permits the isolation of a simplified discourse, to which can then be applied independently either the principle inherent to cognitive therapy for TAG, or the one that relates to delusions. This results in a second

interest, in that it can help, if necessary, to two different therapists to take care of each cognitive therapy for GAD and delusions. Finally, a third interest is that it allows to make use of specific strategies. One such strategy is for example to implement cognitive therapy for GAD *before* cognitive therapy delusions. Is it better in effect when there exists in the patient a co-morbidity between schizophrenia and TAG, to implement cognitive therapy for GAD *before*, *after* or *at the same* the therapy for delusions? The above discussion does not lead to prefer one or other strategic option, but they can still be reformulated in terms of testable hypotheses. The first testable hypothesis that emerges is that the implementation of cognitive therapy for GAD, irrespective of cognitive therapy for delusions, could have a positive effect on symptoms of schizophrenia themselves. The second testable hypothesis is that the resulting cognitive therapy for delusions themselves could be more effective if it was implemented *after* a cognitive therapy for GAD has been achieved and demonstrated effective.

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