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Need and ability to achieve closure: relationships with symptoms of
psychopathology

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Abstract

Recent literature has asserted that excessive choice in everyday life may pose a burden on mental health. The present research further qualifies this claim by focusing on the role of stable individual differences in Need for (cognitive) Closure (NFC) and Ability to Achieve Closure (AAC), which tap into the cognitive-motivational aspects of decision making and choice. The effects of these two distinct components of cognitive closure on mental health and symptoms of psychopathology were investigated in a non-clinical sample ($N = 304$). Results from regression analyses showed strong opposite effects of NFC (positive) and AAC (negative), which independently predicted scores on the Symptom Checklist-90 and its various facet scales, together explaining up to 29% of the variance. These results attest to the idea that individual differences in the need and ability to achieve cognitive closure play a pivotal role in the potentially detrimental effects of excessive choice on mental health. Moreover, the opposite effects of NFC and AAC clarify the ambivalent findings from previous clinical studies on psychopathology that confounded these two components of cognitive closure and suggest promising directions for clinical research and therapy.

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Introduction

Although personal choice and individual decision making are highly valued in Western societies, various authors have recently cautioned that this unlimited choice and self-determination may come at a price and does not always benefit mental health. The influential work of Barry Schwartz, bearing suggestive titles such as ‘Self-determination: The tyranny of freedom’ (2000) and ‘The paradox of choice: Why more is less’ (2004) has elaborately tackled this issue. In a similar regard, Bellah, Madsen, Sullivan, Swinder, and Tipton (1985) already reported that people feel increasingly uneasy about their life decisions because they are unsure about whether they are making the right choices (see also Whitley, 2008).

According to Schwartz (2000), modern Western society has overwhelmed people with near-unlimited autonomy and options in life, thereby installing an “excess of freedom, with resulting increases in people’s dissatisfaction with their lives and in clinical depression” (p. 79). However, stating that these increased possibilities for personal choice indiscriminately put *all* people at risk of impaired mental health and even psychopathology may be an overgeneralization. In fact, numerous studies have demonstrated that there are stable individual differences in how people experience everyday choices and decision-making demands. In particular, people vary substantially in their dispositional *need* for clear-cut and unambiguous answers and their desire for structure in life (see e.g., Kruglanski & Webster, 1996). Furthermore, although people may be motivated to satisfy such desires and needs, this does not necessarily mean that they can. Indeed, people also differ in their *ability* to achieve structure and clear answers (see e.g., Bar-Tal, Kishon-Rabin, & Tabak, 1997).

The present study therefore investigates whether these individual differences in the need and ability to reach structure and firm decisions -captured by the Need for cognitive Closure and the Ability to Achieve cognitive Closure- are predictive of mental health in the general population.

Cognitive closure: separating Ability from Need

The Need for (cognitive) Closure (NFC) concept was introduced by Kruglanski (1989; Kruglanski & Webster, 1996) to develop a theoretical framework for the cognitive-motivational aspects of decision making. Kruglanski (1990) defined NFC as the desire for “*an answer on a given topic, any answer ... compared to confusion and ambiguity*” (p. 337). This desire for cognitive closure varies along a continuum with a strong need to attain closure at one end and a high need to avoid closure at the other end. Kruglanski and Webster (1996) further argued that NFC may “bias the individuals’ choices ..., and induce negative affect when closure is threatened or undermined and positive affect when it is facilitated or attained” (p. 264).

Importantly, although NFC may be temporarily increased by situational manipulations (e.g., noise or time pressure), people substantially differ in their chronic level of ‘dispositional closure’. To measure these stable individual differences, Webster and Kruglanski (1994) developed the NFC scale, which includes five major facets broadly representing the construct. Individuals high in dispositional NFC *prefer order* and structure in their lives, abhorring chaos and disorder. They also *prefer predictability* reflected in a desire for secure and stable knowledge, which is reliable across circumstances and unchallenged by exceptions. High NFC individuals also experience an urgent desire to reach swift decisions, reflected in their need for *decisiveness*.

Furthermore, they feel *discomfort with ambiguity*, experiencing situations as aversive when they are devoid of closure. Finally they are *closed-minded*, reflected by the unwillingness to have their knowledge challenged by alternative opinions or inconsistent evidence.

Although the NFC scale was developed as a one-dimensional measure of the NFC construct, Neuberg, Judice, and West (1997) proposed a two-factor model for the scale based on psychometric analyses. The first factor, denoting the need for simple structure, comprised items tapping preference for order, preference for predictability, discomfort with ambiguity and closed-mindedness. The decisiveness items, on the other hand, loaded on a second factor. The meaning of these two factors has been the subject of a fierce debate for years, but recently Roets, Van Hiel, and Cornelis (2006) argued that the distinct status of the decisiveness factor is due to contamination by ‘ability-content’ as opposed to the intended measurement of a motivational ‘need’. In a series of studies, Roets and Van Hiel (2007) corroborated this claim, demonstrating that the original decisiveness items indeed measure the ability rather than the need to achieve closure. These authors also provided alternative decisiveness items measuring the intended ‘need’ to replace the original, ‘contaminated’, decisiveness items in the NFC scale. As a result, the revised NFC scale now unambiguously measures the *need* or motivational aspect of cognitive closure in a solid, one-dimensional scale (see, Roets & Van Hiel, 2007).

The concept of Ability to Achieve Closure (AAC) refers to the other component of cognitive closure: the individual’s *ability* to reach swift decisions and structure in life. As the ability counterpart of the NFC, this construct is captured by the original Decisiveness facet scale, which taps into the ability to reach swift decisions, and Bar-Tal’s (1994) ability

to achieve cognitive structure scale, which covers the ability aspect of simple structure. The original decisiveness scale and the ability to achieve cognitive structure scale are highly correlated and the combination of both scales straightforwardly taps into the Ability to Achieve Closure (see, Roets & Van Hiel, 2007).

Need and ability to reach closure: relationships with mental health

Although the potential relationship between cognitive closure and mental health remained unexplored for a long time, it recently became the focus of attention in several studies that investigated the role of NFC in clinical psychopathology. This recent line of research revealed that whereas scores on the NFC scale and its facet scales were overall positively associated with various forms of psychopathology, the decisiveness facet of the original NFC scale showed strong negative relationships. This remarkable finding was consistently obtained in various clinical studies investigating the effects of NFC on Psychosis and Delusion-proneness (Bentall & Swarbrick, 2003; Freeman, et al., 2006; McKay, Langdon, & Coltheart, 2006), Anxiety (Colbert, Peters, and Garety, 2006; Freeman et al., 2006) Depression (Freeman et al., 2006), and Obsessive-compulsiveness (Mancini, D'Olimpio, Del Genio, Didonna, & Prunetti (2002).

The disparity between the dominant part of the NFC scale being positively related to psychopathology and the decisiveness facet scale being negatively related to psychopathology has puzzled clinical researchers and has often led to ambivalent conclusions about the role of NFC in psychopathology. Based on the recent insights on the NFC scale, we propose a new and straightforward interpretation of these results. In particular, we argue that these findings demonstrate that various forms of clinical psychopathology such as Psychotic delusions, Anxiety, Depression, and Obsessive-

compulsiveness may be positively related to the *Need* for cognitive closure but negatively to the *Ability* to achieve cognitive closure. Furthermore, we hypothesize that high levels of NFC or low levels of AAC are associated with impaired mental health (i.e., more symptoms of psychopathology) in the general population as well.

Yet, it is also possible that high NFC or low AAC do not relate to mental health independently, but that both have to be present or that any mismatch between closure needs and abilities is associated with impaired mental health. For example, Bar-Tal, et al. (1997) have argued that ‘obsessive compulsiveness’ in terms of information processing style (i.e., hypervigilance), is typical for a specific combination of high need for structure (closure) *and* low ability to achieve it. This suggests that investigation of the interaction between need and ability in addition to their main effects may be useful when studying potential links with psychological distress.

The present research

In this study we elaborate on the distinction between closure needs and abilities and investigate whether individual differences in NFC and AAC significantly predict symptoms of psychopathology in a non-clinical sample. In particular, we hypothesize that NFC is positively related to the occurrence of symptoms, whereas AAC should show negative relationships. Additionally, we test whether the interaction between the need and ability to reach closure explains any additional variance in psychopathology symptoms.

As a subsidiary issue of interest in relation to previous clinical research, we also compare the original decisiveness facet scale and the revised decisiveness facet scale as predictors of mental health.

Method

Participants and Procedure

Participants were invited to participate by a research assistant who contacted her extended network and posted an invitation on popular press forums in Belgium and the Netherlands. Data collection was conducted in accordance with the ethical protocol of the Institutional Review Board. The questionnaire was provided online on a secure university website, or in a paper and pencil version, if requested. Participants completed the questionnaire anonymously after being informed of the general nature of the measures, the general purpose of the study, and the confidentiality of the data. They could abort the questionnaire at any point in time, without the need to give any justification and were informed that their participation involved no financial compensation. Only data of participants who completed all scales and demographic information were considered for further analyses, resulting in a sample size of $N = 304$ (i.e., 81% of all participants who originally responded to the invitation).

Measures

Need for Closure (NFC). Participants completed the revised NFC scale (Webster & Kruglanski, 1994; Dutch version by Cratylus, 1995; revised by Roets & Van Hiel, 2007) with new items replacing the original Decisiveness items.

Ability to Achieve Closure (AAC). To measure individual differences in AAC, we used a combined scale including the original NFC decisiveness items measuring the ability to decide quickly and confidently (see, Roets & Van Hiel, 2007) and the items from the ability to achieve cognitive structure scale (Bar-Tal, 1994; Dutch version by Roets & Van Hiel, 2007), which primarily tap into the structure component of closure.

All items from the NFC and the AAC scales were rated on a six-point Likert scale ranging from 1 (*very strong disagreement*) to 6 (*very strong agreement*). A general score indicating high NFC or high AAC was calculated by taking the mean of the items after reverse scoring items when necessary.

Symptom Checklist 90. As a general measure of mental health, the SCL-90 (Derogatis, 1977) was administered, tapping into a broad range in psychopathology symptoms in a non-clinical sample. Respondents completed the widely-used, validated Dutch version of the instrument (Arrindell & Ettema, 1986) and rated on a 5-point scale the extent to which they experienced symptoms during the past week ranging from 1 (*absolutely not*) to 5 (*very much*). The SCL-90 includes the following facet scales: Phobic anxiety/Agoraphobia, Anxiety, Depression, Hostility, Obsessive-compulsiveness, Interpersonal Sensitivity, Somatization, Sleeping problems, and Psychoticism (labeled ‘other symptoms’ in the Dutch version). This facet factor structure has been validated in both clinical and non-clinical Dutch samples* (Arrindell & Ettema, 1986). The total SCL-90 score (General severity Index) as well as nine facet scale scores were calculated by taking the sum of all corresponding items, correcting for missing values in accordance with the SCL-90 manual.

Results

Demographic information and descriptive statistics for all measures are provided in Table 1, showing adequate internal consistency for all scales. Before investigating the effects on mental health, we tested the extent to which NFC and AAC were linked to age, gender and education. ANCOVAs with education and gender as fixed variables and age

* The facet scales structure of the official Dutch version of the SCL-90 is slightly different from the nine dimensions proposed by Derogatis (1977). Various studies have shown that the original facet scale structure proposed by Derogatis has limited stability (e.g., Lipman, Covi & Shapiro, 1979).

as covariate were conducted for NFC and AAC. Results showed that both NFC and AAC increased with age; $F(1, 299) = 16.28$, and $F(1, 299) = 24.74$, respectively, both $p < .001$. No effects of gender on NFC or AAC were found; $F(1, 299) = 2.53$, and $F(1, 299) = .07$, respectively, both *ns*. Education level had a significant effect on NFC; $F(1, 299) = 5.81$, $p < .05$, with lower NFC scores for highly educated respondents. No significant effect of education was found on AAC; $F(1, 299) = 1.04$, *ns*. Finally, NFC and AAC were only weakly correlated ($r = .13$, $p < .05$), attesting to the idea that these variables represent distinct constructs.

To test the predictive validity of NFC and AAC on symptoms of psychopathology, a series of hierarchical regression analyses was conducted for the various facet scales of the SCL-90 and the total score (Global Severity Index). The demographic variables of age, gender (-1 = female, 1 = male), and education level (-1 = no higher education, 1 = higher education) were entered as control variables in the first step of the regression analyses. NFC and AAC were entered in the second step and their centered interaction term in the third step.

As shown in Table 2, both NFC and AAC were significant predictors of the general SCL-90 score and the underlying facet scales, after controlling for demographic variables. Only for sleeping problems the effect of NFC was non-significant. The two opposite main effects of NFC and AAC explained between 8.7 and 29.2 % of the variance in the symptom facets and 28.7 % of the variance of the total SCL-90 score (see Table 2). No additional effects were found for the interaction between NFC and AAC, with the exception of a small effect on the Somatization facet scale.

Subsidiary analyses using an identical regression procedure showed that the pattern of results obtained with AAC and NFC was fully replicated for the need and ability pertaining to decisiveness. For decisiveness ability (original facet scale as a part of the AAC measure), significant negative effects were found; all $|t|(298) > 3.78$, all $|\beta| > .21$, all $p < .001$. For decisiveness needs (revised scale as a part of the revised NFC measure), significant positive effects were found; all $t(298) > 4.07$, all $\beta > .21$, all $p < .001$, with the exception of a borderline significant effect on sleeping problems; $t(298) = 1.69$, $\beta = .10$, *ns*.

Discussion

The present study investigated whether stable individual differences in the Need for cognitive Closure (NFC) and the Ability to Achieve cognitive Closure (AAC) significantly predict symptoms of psychopathology in a non-clinical sample. Strong effects of both NFC and AAC were found for the SCL-90 Global Severity Index and the various facet scales, revealing independent and opposite effects on mental health. No significant interaction effects were found. Hence, the effects of NFC and AAC on mental health were ‘additive’ rather than associated with a particular combination (‘mismatch’) between NFC and AAC.

Need and Ability to achieve closure in a world of choice and opportunities

Schwartz (2000, 2004) has argued that the excess of demands for self-determination and individual choice in current Western society has a negative effect on individuals’ mental health. The present research further qualifies this claim, proposing that individual differences are pivotal in the link between the abundance of choice and mental health.

The first individual differences factor identified as important in this regard is the dispositional Need for cognitive Closure, i.e., the strong craving for certainty, structure and firm answers in everyday life. Indeed, previous research in clinical samples has revealed higher levels of NFC in patients suffering from different forms of psychopathology (see e.g., Colbert et al., 2006; Freeman et al., 2006) and hence suggested that high NFC may be associated with higher vulnerability to psychological problems in the present society. Moreover, recent research by Roets and Van Hiel (2008) demonstrated that people high in dispositional NFC experience more distress during ambiguous decision-making tasks, indicated by higher and gradually increasing levels of arousal (assessed by galvanic skin response and cardio-vascular measures) and more acute emotions of distress. Based on previous and present findings, we can conclude that dispositional NFC is an important factor in determining the degree to which the abundance of choice and decision-making demands in everyday life is associated with decreased mental health.

The Ability to Achieve Closure constitutes the second individual differences factor predictive of mental health. In particular, the strong negative relationship between AAC and symptoms of psychopathology revealed that lacking the ability to obtain cognitive closure, with choice and decision making is constantly required in daily life, is associated with psychological distress. Feelings of frustration or helplessness that can arise from this inability might provide a tentative explanation for the relationship between AAC and symptoms of psychopathology and may be tested in future research.

The present findings clearly corroborated our hypothesis that in Western society, high NFC and low AAC are associated with impaired mental health. However, an

interesting question that arises here is whether similar results should be expected in societies where self-determination and individual choice are less valued and emphasized. In particular, it is possible that the effects of AAC on mental health are considerably weaker or even absent in these societies. Indeed, when demands for personal choice are limited, an individual's inability to achieve closure becomes less salient and may therefore be less detrimental to mental health. For NFC, the effects on mental health may even be reversed. Calogero, Bardi, and Sutton (2009) showed that NFC is negatively related to Self-direction and Stimulation but positively related to values of Tradition, Security and Conformity. Societies that focus on the latter 'conservation' values rather than on personal choice may actually satisfy the needs of high NFC individuals especially well. Conversely, people low in NFC may then be more prone to psychological distress because of the limited opportunities for personal choice, Self-direction, and Stimulation. This interesting interplay between individual and society that may affect mental health undoubtedly represents a promising direction for future cross-cultural research.

Limitations and implications for clinical research and therapy

In the present investigation, the SCL-90 was used to measure mental health, tapping into a broad range of psychopathology symptoms. In addition to the effects on the Global Severity Index, NFC and AAC showed remarkable effects on the various facet scales, attesting to their importance for specific forms of psychopathology as well. Nevertheless, the SCL-90 is primarily a general measure of symptom distress and may not be the most suitable instrument to differentiate between different symptomatology clusters such as depression, anxiety, and obsessive-compulsiveness (see, Cyr, McKenna-Folley, & Peacock, 1985). Future research may therefore elaborate on the present

findings and assess the effects of NFC and AAC using more ‘domain-specific’ measures, such as the Beck Depression Inventory (Beck, 1978), as a measure of depression.

A second issue pertains to the causality of the relationship between the cognitive closure components and mental health. Because NFC and AAC represent stable individual traits (see, e.g., Kruglanski & Webster, 1996), it can be assumed that these dispositional variables are the source of differences in mental health. However, the present cross-sectional design does not exclude the possibility that reduced mental health may affect closure needs and abilities as well, especially in cases of clinical psychopathology. Indeed, although high NFC and low AAC may promote, for example, clinical depression and obsessive-compulsiveness, such psychopathology and the accompanying cognitive and motivational changes may further increase the individual’s existing closure needs and reduce their ability to reach closure. Future studies may tackle this issue in prospective or experimental designs. In particular, prospective research may investigate whether people who show high levels of NFC or low levels AAC early in life are more likely to develop psychopathology at a later stage. Interesting possibilities for experimental research pertain to clinical studies comparing control groups to experimental treatment groups. As such, researchers could clarify to what degree these components of cognitive closure are underlying determinants of mental health, or rather the product or symptom of psychopathology.

The present findings suggest some interesting implications for clinical research and therapy. In particular, we believe that the differentiation between closure needs and abilities definitely contributes to a better understanding and interpretation of previous findings from clinical research on the link with psychopathology (see e.g., Colbert, et al.

2006; Freeman et al., 2006). We therefore advise scholars in this research line to explicitly incorporate this vital distinction in future studies. Moreover, the distinct role of ability versus need for closure in psychopathology might advance interesting possibilities for therapy. Indeed, Colbert et al. (2006) already suggested that the increased levels of Need for cognitive Closure in patients suffering from delusions or anxiety disorders may be a valuable focus for cognitive-behavioral therapy, aiming at “a more general cognitive style around tolerating ambiguity and uncertainty, and not always being able to achieve closure and answers...” (p1394). In addition, the present results also highlight the role of the Ability to Achieve Closure and therefore suggest the potential usefulness of an additional therapy focus on mastering the appropriate coping skills to increase the ability to reach cognitive closure and structure when faced with such demands in everyday life. Evidently, further substantive research comparing control groups to experimental treatment groups is necessary to test whether dispositional variables like NFC and AAC can be changed through therapeutic interventions and whether such changes have a substantial impact on reducing psychopathology.

Conclusion

The present research demonstrates the importance of differentiating between the ability and need component of cognitive closure, showing that these components have strong, opposite, and independent effects on mental health. These results demonstrate that individual differences in closure abilities and needs play a pivotal role in the potentially detrimental effects of excessive choice on mental health in Western society and clarify the ambivalent findings from previous clinical studies on the link between cognitive closure and psychopathology.

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