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Worry, Problem Elaboration, and Suppression of Imagery: The Role of Concreteness

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Summary

Both lay concept and scientific theory claim that worry may be helpful for defining and analyzing problems. Recent studies, however, indicate that worrisome problem elaborations are less concrete than worry-free problem elaborations. This challenges the problem solving view of worry because abstract problem analyses are unlikely to lead to concrete problem solutions. Instead the findings support the avoidance theory of worry that claims that worry suppresses aversive imagery. Following research findings in the dual-coding framework (Paivio, 1971, 1986), the present article proposes that reduced concreteness may play a central role in the understanding of worry. First, reduced concreteness can explain how worry reduces imagery. Second, it offers an explanation why worrisome problem analyses are unlikely to arrive at solutions. Third, it provides a key for the understanding of worry maintenance.

Keywords

Anxiety, Anxiety neurosis, Problem solving, Avoidance, Imagery, Cognitive processes

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Most lay persons assume that worry helps problem solving. This holds both for normal samples (Tallis, Davey & Capuzzo, 1994) and for clients diagnosed with generalized anxiety disorder (GAD) (Borkovec & Roemer, 1995). This assumption, however, is not merely a lay concept. From the very beginning of worry research, scientific theory has described the worry process as an attempt to engage in mental problem solving (e.g., Borkovec, Robinson, Pruzinsky, & DePree, 1983). However, the distinction between normal/nonpathological worry and excessive/pathological worry may be critical to this function. Whereas pathological worry of GAD clients is clearly considered to be maladaptive and dysfunctional, nonpathological worry is hypothesized to contain adaptive and constructive elements that help analyzing problems (Davey, 1994). Therefore, only nonpathological worrying may have "the dual benefit of motivating the individual and helping him or her to define and think through any potential problems in good time" (p. 38).

Worry, Problem Elaboration, and Concreteness

To investigate whether worrying is helpful in analyzing and defining problems, the following questions have to be addressed: (a) How can we conceptualize worrisome problem analysis, (b) how can we assess it, and (c) how can we evaluate its quality and usefulness? According to Schönplflug (1984; cf. Stöber, 1996a), all problem situations can be defined by three classes of variables: (1) focal problems, (2) antecedent problems (or risks), and (3) consequential problems (or negative consequences). A thorough problem analysis therefore includes analysis of potential antecedents and consequences. To assess problem analysis associated with worry, a systematic method of problem elaboration was developed for laboratory use (Stöber, 1996b): the central topic of concern is presented as the focal problem, and participants are asked to list potential risks and potential negative consequences (cf. Figure 1). For example, a frequent worry topic is making mistakes at work. When presenting "I make mistakes at work" as the focal problem, problem elaboration consists of generating potential risks that could cause this problem (e.g. "I could not sleep all night" or "I have a noisy office environment") and of generating potential negative consequences of this problem (e.g. "My boss will yell at me" or "My colleagues will look down on me"). If worrying is helpful in defining and analyzing problems, problem elaborations of topics about which the participants worry would be expected to be as refined as, or even more refined than, problem elaborations of topics about which they do not worry.

To evaluate the quality of problem elaborations, concreteness is a key variable. Problem elaborations with a high degree of concreteness contain risks and consequences that are detailed

and specific, thus making it easier to find potential solutions to the problem (Schönplflug, 1989). Moreover, "through concreteness, anticipations of future events and actions gain some of the probative force and self-explanatory power of perceptions. They can serve as internal task models . . . for which action plans can be developed" (p. 248). In sum, concrete problem elaborations may not only motivate the individual to counteract the perceived risks (prevention) or to prepare for the expected negative consequences (anticipatory coping), but may also show ways to tackle the problem.

However, worry may be more hindrance than help in this respect, because worry seems to be associated with problem elaborations of reduced concreteness. In a series of studies (Stöber, 1996b, 1997), items from a questionnaire of nonpathological worry (Tallis, Eysenck & Mathews, 1992) were selected as focal problems for problem elaboration. Nonclinical student samples were asked to elaborate these focal problems by generating potential risks and potential negative consequences according to the model depicted in Figure 1. Afterwards, judges rated the concreteness of these problem elaborations. Across all studies, a highly significant linear effect was found: The more participants worried about a problem topic, the lower was the degree of concreteness of the associated problem elaborations. Even problem elaborations of topics about which participants worried only a little bit were less well-defined than problem elaborations of topics about which participants did not worry at all.

These findings challenge the view that worry may be helpful for defining and analyzing problems. Appropriate definition and analysis of problems have been identified as important steps on the way to problem solution (D'Zurilla & Goldfried, 1971). Consequently, worry is unlikely to help problem solution because it is associated with low concreteness. When the potential risks are less concrete, it is difficult to imagine concrete actions that could counteract the impending dangers and stop the problem from developing in the first place. Moreover, when the negative consequences are less concrete, it is difficult to counteract them or to prepare for their adverse effects. However, whereas reduced concreteness is unlikely to advance problem solutions, it may help to avoid aversive imagery.

Worry, Suppression of Imagery, and Concreteness

According to the avoidance theory of worry (Borkovec, Ray & Stöber, in press), the function of worry is to escape aversive imagery. Worry consists mainly of thought, as opposed to imagery. Thinking about feared stimuli yields much less cardiovascular response than does imagining them (Vrana, Cuthbert & Lang, 1986). By worrying about a problem, individuals reduce the amount of imagery and the physiological fear responses associated with it. The experimental study by Borkovec and Inz (1990) illustrates the typical findings. Participants

underwent experimental phases of relaxation and worry. During both phases, "thought samples" were taken by repeatedly prompting participants to report whether their present mentation was predominantly an image or a thought. When prompted during relaxation, controls reported imagery in 57% of the cases (GAD clients 36%). During the worry phase, however, both groups reported reduced imagery (controls 26% images and GAD clients 21%). These differences are not restricted to the comparison of worry and relaxation. Zuellig and Borkovec (1996) found similar differences in a comparison of worry and trauma recall. During trauma recall, imagery was predominant over thought (53% vs. 38%). During worry, thought was predominant over imagery (64% vs. 21%). Whereas other studies corroborated these findings, the underlying processes have remained unclear. The findings of reduced concreteness in worrisome problem elaboration may have explanatory potential in this regard.

According to the dual-coding theory (Paivio, 1971, 1986), words and sentences are always processed integratively with imagery. Research in this paradigm has demonstrated that the concreteness of words and sentences exerts a strong influence on the associated imagery. First, concrete words and sentences evoke more concrete and vivid imagery than abstract words and sentences (Paivio, 1991). Second, concrete words and sentences elicit imagery much easier and faster. Research has found correlations of .78 to .92 between the concreteness of a word and the ease with which it evokes a mental image (Marschark & Cornoldi, 1991). Moreover, participants have been found to take on average three seconds to generate an elaborate mental image for concrete words, whereas they take four to five seconds for abstract words (Paivio, 1966). Third, concrete words and sentences elicit images that contain significantly more instances related to an individual's biography (Paivio, 1991). Linking these findings to the findings of reduced concreteness for worrisome problem elaborations, imagery associated with worry would be rather unvivid, slow, and difficult to access. Moreover, it would be less personally threatening because of lack of biographical references. With reduced vividness, imagery in worry would be harder to detect (e.g. in experimental thought-sampling) or easier to ignore (e.g. in everyday worry). Moreover, because of its reduced speed, imagery occurring in worry could be avoided simply by switching to a different topic before an elaborate mental image emerges. Clinical observations confirm that the focus of worry shifts repeatedly so that some GAD clients "run through a whole gamut of worries at a single [therapy] sitting" (Butler, 1994, p. 212). Finally, with reduced biographical reference, any remaining imagery in worry may cause only moderate rather than severe distress.

Concreteness and the Maintenance of Worry

Whereas the reduced concreteness of worrisome thought may help to avoid aversive imagery, it is likely to maintain worry. According to the process model by Tallis and Eysenck (1994), worry is initiated by the detection of threat. Following this, negative thoughts and images enter awareness. From this, negative models of the future are constructed initiating a search for problem solution. Only selection and implementation of appropriate problem solutions will terminate the threat. As outlined above, problem elaboration of reduced concreteness will rather reduce the chances of finding appropriate solutions. In this case, the threat is preserved, and worry continues. Furthermore, problem elaborations of reduced concreteness may be harder to invalidate. For example, concrete negative consequences such as "My boss will yell at me" are easy to invalidate, because it is clear which events are incongruent (i.e., he or she did not yell). However, abstract consequences such as "Maybe I will get in a muddle" that are typical for pathological worriers (Butler, 1994) are hard to invalidate. This uncertainty may maintain worry. Finally, problem elaborations of reduced concreteness may block exposure to the perceived threat and thus interfere with emotional processing. By avoiding concrete elaboration of the problem, the individual also avoids the activation of the underlying fear-structures. Without emotional processing, however, fear-incongruent information will not be integrated and the threatening meaning structures will be maintained (Foa & Kozak, 1986). In sum, it appears that concreteness of worrisome thought plays a central role for understanding development and maintenance of normal and pathological worry. Thus, concreteness is a variable that warrants more attention in future research related to worry and generalized anxiety disorder.

References

Borkovec, T. D. & Inz, J. (1990). The nature of worry in generalized anxiety disorder: a predominance of thought activity. Behaviour Research and Therapy, 28, 153-158.

Borkovec, T. D., Ray, W. J. & Stöber, J. (in press). Worry: a cognitive phenomenon intimately linked to affective, physiological, and interpersonal behavioral processes. Cognitive Therapy and Research.

Borkovec, T. D., Robinson, E., Pruzinsky, T., & DePree, J. A. (1983). Preliminary exploration of worry: some characteristics and processes. Behaviour Research and Therapy, 21, 9-16.

Borkovec, T. D. & Roemer, L. (1995). Perceived functions of worry among generalized anxiety disorder subjects: distraction from more emotionally distressing topics? Journal of Behavior Therapy and Experimental Psychiatry, 26, 25-30.

Butler, G. (1994). Treatment of worry in generalised anxiety disorder. In: G. C. L. Davey & F. Tallis (Eds.), Worrying: perspectives on theory, assessment and treatment (pp. 209-228). New York: Wiley.

Davey, G. C. L. (1994). Pathological worrying as exacerbated problem-solving. In: C. G. L. Davey & F. Tallis (Eds.), Worrying: perspectives on theory, assessment and treatment (pp. 35-59). New York: Wiley.

D'Zurilla, T. J. & Goldfried, M. R. (1971). Problem solving and behavior modification. Journal of Abnormal Psychology, *78*, 107-126.

Foa, E. B. & Kozak, M. J. (1986). Emotional processing of fear: exposure to corrective information. Psychological Bulletin, *99*, 20-35.

Marschark, M. & Cornoldi, C. (1991). Imagery and verbal memory. In: C. Cornoldi & M. A. McDaniel (Eds.), Imagery and cognition (pp. 133-182). New York: Springer.

Paivio, A. (1966). Latency of verbal associations and imagery to noun stimuli as a function of abstractness and generality. Canadian Journal of Psychology, *20*, 378-387.

Paivio, A. (1971). Imagery and verbal processes. New York: Holt, Rhinehart and Winston.

Paivio, A. (1986). Mental representations: a dual coding approach. New York: Oxford University Press.

Paivio, A. with Marschark, M. (1991). Integrative processing of concrete and abstract sentences. In: A. Paivio (Ed.), Images in the mind: the evolution of a theory (pp. 134-154). New York: Harvester Wheatsheaf.

Schönflug, W. (1984). Regulation und Fehlregulation im Verhalten: X. Entlastung und Belastung durch gesundheitsfördernde Maßnahmen [Adaptive and maladaptive regulation of behavior: X. Relief and burden associated with supportive health measures]. Psychologische Beiträge, *26*, 692-721.

Schönflug, W. (1989). Anxiety, worry, prospective orientation, and prevention. In: C. D. Spielberger & I. G. Sarason (Eds.), Stress and anxiety (Vol. 12, pp. 245-258). Washington, DC: Hemisphere.

Stöber, J. (1996a). Anxiety and the regulation of complex problem situations: playing it safe? In: W. Battmann & S. Dutke (Eds.), Processes of the molar regulation of behavior (pp. 105-118). Scottsdale, AZ: Pabst.

Stöber, J. (1996b). Besorgnis und Besorgtheit: Untersuchungen über Problemräume, deren Strukturierung und Elaboration [Worry and Worriers: investigations on problem spaces, their structuring and elaboration]. Frankfurt/M., Germany: Lang.

Stöber, J. (1997, November). Worry and problem elaboration: reduced concreteness and imagery for worrisome topics. Poster presented at the meeting of the Association for Advancement of Behavior Therapy, Miami Beach, FL.

Tallis, F., Davey, G. C. L. & Capuzzo, N. (1994). The phenomenology of non-pathological worry: a preliminary investigation. In: G. C. L. Davey & F. Tallis (Eds.), Worrying: perspectives on theory, assessment and treatment (pp. 61-89). New York: Wiley.

Tallis, F. & Eysenck, M. W. (1994). Worry: mechanisms and modulating influences. Behavioural and Cognitive Psychotherapy, *22*, 37-56.

Tallis, F., Eysenck, M. W. & Mathews, A. (1992). A questionnaire for the measurement of nonpathological worry. Personality and Individual Differences, *13*, 161-168.

Vrana, S. R., Cuthbert, B. N. & Lang, P. J. (1986). Fear imagery and text processing. Psychophysiology, *23*, 247-253.

Zuellig, A. R. & Borkovec, T. D. (1996, November). Predominance of thoughts and images during trauma recall and worry. Poster presented at the meeting of the Association for Advancement of Behavior Therapy, New York, NY.

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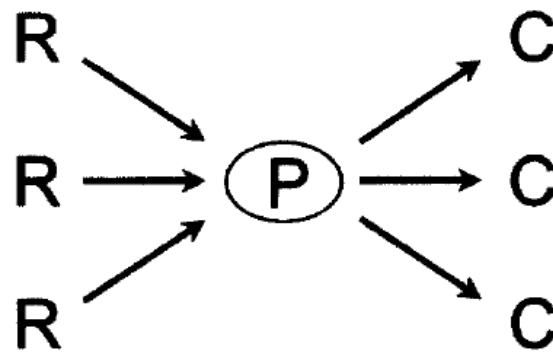


Fig. 1. A model for the elaboration of worrisome topics. P = problem, R = risk and C = consequence. When the worry topic is given as the focal problem (P), problem elaboration consists of generating potential risks and potential negative consequences.