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DEVELOPMENT AND VALIDATION OF THE MULTIDIMENSIONAL STATE BOREDOM SCALE

by **Shelley A. Fahlman**

a dissertation submitted to the Faculty of Graduate Studies of York University in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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Abstract

Although it is an aversive and common experience, boredom has received relatively little attention in psychological research. In part, research on boredom has been constrained by a lack of conceptual clarity (especially regarding boredom's definition) and by limited measurement tools. The purpose of the present work was to address these limitations of the boredom literature by a) generating a definitive definition of boredom and b) creating a new and improved self-report measure of boredom. The first half of this dissertation focuses on the generation of a new definition of boredom. Based upon a critical analysis of essential theoretical questions and a review of relevant theoretical and empirical literature, a comprehensive, theoretically-informed, and well-grounded definition of boredom was generated. The second half of this dissertation describes the development and validation of a new, theoretically- and psychometrically-sound self-report measure of boredom, the Multidimensional State Boredom Scale (MSBS). The development of item content was guided by a qualitative study on the experience of boredom, as well as the review of existing qualitative and theoretical literature described earlier. After conducting item analyses on the initial items (Study 1a), the dimensionality (Studies 1b, 1c, 2), measurement invariance (Study 3), convergent and criterion validity (Study 3), and state-sensitivity (Study 4) of the MSBS were assessed. Results indicated that the MSBS was significantly correlated with the Boredom Proneness Scale (BPS), as well as measures of depression, anxiety, anger, inattention, impulsivity, neuroticism, life satisfaction, and purpose in life. MSBS scores also distinguished between participants who were induced into a state of boredom and those who were not. The final 29-item MSBS contains five

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lower order factors, Disengagement (DIS), Agitated Affect (AA), Dysphoric Affect (DA), Inattention (IN), and Time Perception (TP), with item sums from each showing strong internal consistency. These five factors were significantly related to a single, second-order factor, 'General Boredom.' This factor structure was interpreted as consistent with the conceptual framework of boredom outlined in the first half of the dissertation. The utility of the MSBS as well as some limitations and directions for future research are discussed.

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Acknowledgements

As any researcher knows, the development of a new measurement tool requires a large investment of time and energy from many individuals. This project is no exception, and there are several individuals that I would like to acknowledge and thank for their efforts. First, I would like to acknowledge and thank my supervisor, Dr. John Eastwood, who has been diligently working with me on this project since 2003. Several other researchers and colleagues also contributed their ideas or gave of their time and energy, including Kimberley Mercer, Sanaz Mehranvar, Cory Gerritsen, James Danckert, Daniel Smilek, Katherine Radziszewski, Nicole Nosworthy, and Jennifer Williams. I would also like to acknowledge the members of my supervisory committee, Dr. David Flora and Dr. Joel Katz, who provided helpful guidance and suggestions throughout the research process.

The development of a new scale also requires a lot of data from a large number of research participants. With that in mind, I am grateful to all the many participants for completing my scale, whether in its earliest (and longest!) form, or in its more recent form. The MSBS would not exist without your participation.

Finally, I would like to acknowledge and thank my family and friends who have provided their support over the last five years as I completed this dissertation. A special thank you goes to Jason Goertzen for all his feedback, support, and editorial assistance.

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Table of Contents

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List of Tables

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List of Figures

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CHAPTER 1: THE NEED FOR A DEFINITIVE DEFINITION AND NEW MEASURE OF BOREDOM

> "Were our world a dull and uneventful place, the prevalence of boredom in our society would pose no riddle. But how does boredom grow and spread in an exciting world?"
>
> Bernstein, 1975, p. 512

At first glance, boredom may seem to be a trivial issue, especially when one considers the unprecedented access to information and the many sources of entertainment available in our society. However, as Bernstein asks in the quotation above, how is it that boredom can occur in an eventful society? Boredom is, in fact, a common form of psychological distress. Klapp (1986) argued that boredom is a growing social problem, and not simply "a trivial and temporary discomfort of a few individuals" (p. 26). He maintained that it is difficult to determine the exact prevalence of boredom, given that individuals may not label their experiences as such, may not wish to 'admit' to being bored, or may mask their awareness of boredom through various diversions. Some studies, however, have provided specific estimates of boredom's prevalence. For example, in a recent survey of 1,987 American youth, almost all (91%) reported that they experience boredom, with 66% reporting that they experience 'often' or 'occasional' boredom (National Center on Addiction and Substance Abuse, 2003). The 'riddle' of boredom, as Bernstein has noted in the above quotation, is how and why boredom occurs when our society is presumably full of excitement and easily-accessible entertainment. Because boredom is becoming a more common experience, Bernstein maintained, it cannot be "dismissed as a trivial and unworthy feeling, reflecting some idiosyncratic flaw of shallowness and superficiality in

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the bored person" (p. 512). He argued that phrases such as 'bored to death', 'bored to tears' 'bored to distraction' demonstrate the variety and intensity of experiences of boredom. Fromm (1991), too, described the difficulty of the experience of boredom, noting that boredom involves "a paralysis of our productive powers and [a] sense of un-aliveness. Among the evils of life, there are few which are as painful as boredom, and consequently every attempt is made to avoid it" (p. 202).

Boredom in Twentieth Century Psychology

However, in spite of it being a difficult and relatively common experience, boredom has not received sustained attention in the psychological literature. It has been estimated that, on average, fewer than one paper per year was published on boredom between 1926 and 1980 (Smith, 1981), and that only four papers per year were published between 1983 and 1993 (Leong & Schneller, 1993). Smith (1981), who reviewed studies on boredom published between 1926 and 1981, described how early efforts to study boredom grew out of British industrial psychology, where boredom was equated with monotony. Both this research and experimental research on boredom conducted in the United States examined the impact of boredom on performance during repetitive tasks (e.g., see O'Hanlon, 1981 and Smith, 1981 for review). Overall, it was found that boredom decreases performance efficiency during repetitive work.

The writing of psychoanalytic authors (e.g., Fenichel, 1953; Greenson, 1953) comprises another strand of work on boredom from the early twentieth century. These authors discussed a 'pathological' or chronic type of boredom and its dynamics. Later, in the 1950s and 1960s, boredom was studied using neo-behaviourist frameworks (e.g.,

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Berlyne, 1960; Hebb, 1966; Fiske & Maddi, 1961), with particular emphasis on notions of arousal, curiosity, exploration, sensory deprivation, and fatigue.

A fourth period of research on boredom in twentieth century psychology began in the late 1970s, after the development of two psychometric measures of boredom: the Boredom Susceptibility Scale (ZBS) by Zuckerman and colleagues (Zuckerman, Eysenck & Eysenck, 1978), and the Boredom Proneness Scale (BPS), by Farmer and Sundberg (1986). Subsequently, research on boredom published in the 1980s and 1990s typically employed either the BPS or ZBS. The development of these scales allowed researchers to investigate personality factors and individual differences related to the *tendency* to become bored. That is, given that the two scales assess 'boredom proneness' and 'boredom susceptibility', research using these scales emphasizes individual differences in the propensity to experience boredom.[1] This literature primarily consists of correlational studies measuring the predisposition toward boredom and various constructs of interest. Such correlational research has demonstrated that boredom proneness is related to a number of affective, cognitive, interpersonal, behavioural, and other psychological difficulties.

Affective and Cognitive Correlates

Not only has boredom proneness been shown to be related to negative affect in general (e.g., Gordon, Wilkinson, McGown, & Jovanoska, 1997), but also to many specific types of negative affect, including depression and anxiety (Fahlman, Mercer, Gaskovski, Eastwood, & Eastwood, in press; Farmer & Sundberg, 1986; Sommers &

[1] See Mercer (2008) for a critical review of these scales.

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Vodanovich, 2000; Vodanovich, Verner, & Gilbride, 1991), guilt (McGiboney & Carter, 1988), hopelessness (Farmer & Sundberg, 1986), hostility and anger (Rupp & Vodanovich, 1997; Vodanovich et al., 1991), loneliness (Farmer & Sundberg, 1986), frustration (Perkins & Hill, 1985), and apathy (Ahmed, 1990). Cognitive correlates of boredom proneness include low absorption and negative self-awareness (Seib & Vodanovich, 1998), lack of flow (Harris, 2000), lower attributional complexity (Polly, Vodanovich, Watt, & Blanchard, 1993), perceived monotony (Perkins & Hill, 1985), and attention failure (Damrad-Frye & Laird, 1989; Farmer & Sundberg, 1986; Hamilton, 1981). Interpersonally, it has been shown that the boredom-prone individual is more likely to have a negative social orientation or interpersonal sensitivity (i.e., easily hurt, feel that people are unfriendly; Sommers & Vodanovich, 2000), more likely to be viewed as self-centred and banal (Leary, Rogers, Canfield, & Coe, 1986), and more likely to be alienated (Tolor, 1989), shy (Maroldo, 1986), or lonely (Farmer & Sundberg, 1986).

Behavioural Problems

Behavioural problems associated with boredom proneness include those involving risky behaviour or poor impulse control. Specifically, boredom proneness has been significantly correlated with poor impulse control (Leong & Schneller, 1993; Watt & Vodanovich, 1992b), over-eating and binge eating (Abramson & Stinson, 1977; Ganley, 1989; Stickney & Miltenberger, 1999; Wilson, 1986), alcohol and drug use (Johnston & O'Malley, 1986; Carrol & Zuckerman, 1977; Forsyth & Hundleby, 1987; Lee, Neighbors, & Woods, 2007; Orcutt, 1984; Pascale & Sylvester, 1988; Paulson, Coombs & Richardson, 1990), alcohol abuse (Wiesbeck, Wodarz, Mauerer, Thome, Jakob, et al.,

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1996), problem gambling (Blaszczynski, McConaghy, & Frankova, 1990; Mercer, Stala, & Eastwood, 2007), violence and assaults (Homel, Tomsen, Thommeny, 1992), sensation seeking in general (Kass & Vodanovich, 1990), and specific sensation seeking behaviours such as drunk driving (Arnett, 1990b) and unprotected sexual intercourse (Arnett, 1990a). Other behavioural difficulties associated with boredom include poor job performance and absenteeism (Drory, 1982; Kass, Vodanovich, & Callender, 2001), as well as academic difficulties such as truancy, work avoidance, procrastination, and low achievement in school (Blunt & Pychyl, 1998; Jarvis & Seifert, 2002; Robinson, 1975; Vodanovich & Rupp, 1999).

Psychological Correlates

As well as the behavioural correlates mentioned above, the tendency to become bored is associated with other psychological problems, including alexithymia (Eastwood, Cavaliere, Fahlman, & Eastwood, 2007), psychotic disorders (Todman, 2003), borderline personality disorder (James, Berelowitz, & Vereker, 1996), and somatization complaints (Sommers & Vodanovich, 2000). Furthermore, boredom proneness has *negative* associations with positive psychological variables such as assertiveness (Tolor, 1989), self-actualization (McLeod & Vodanovich, 1991), need for cognition (Watt & Blanchard, 1994), sense of life meaning and purpose (Fahlman et al., in press; Melton & Schulenberg, 2007; Passik, Inman, Kirsh, Theobald, & Dickerson, 2003; Weinstein, Xie, & Cleanthos, 1995), psychosocial development (Watt & Vodanovich, 1999), spirituality (MacDonald & Holland, 2002), job satisfaction (Farmer & Sundberg, 1986; Kass, Vodanovich & Callender, 2001), and life satisfaction (Farmer & Sundberg, 1986).

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Finally, the tendency toward boredom has been shown to be a symptom of poorer psychological well-being in general. For example, Hunter and Csikszentmihalyi (2003) found that adolescents who experienced chronic boredom in everyday life had poorer self-esteem, an external locus of control, and were more pessimistic about their futures compared to adolescents who experienced chronic interest.

Limitations of the Boredom Literature

In the early 1990s, Fisher (1993) noted that "researchers know very little about the phenomenon of boredom. There is no agreed definition of the construct or well-developed instrument for measuring it, and there is no comprehensive theory of its causes" (p. 395). Ten years later, despite continued research, the situation appeared relatively unchanged. Upon review of the boredom literature, Vodanovich (2003) pointed out a number of limitations, including the lack of a uniform definition and the need for new, theoretically-informed measures of the construct. To date, these problems remain unresolved. Researchers in psychology still do not have essential knowledge of boredom, as there is little conceptual clarity regarding the experience of boredom, its components, or its definition. The many correlational studies reviewed above are largely atheoretical in nature. The few qualitative studies on boredom could be extremely useful in gaining conceptual clarity, yet these findings have been largely ignored. All of these issues have, in turn, hindered researchers' ability to measure the construct. Finally, without a reliable, valid measure of boredom, the scientific study of this phenomenon cannot advance.

The Need for a Definitive Definition

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In order to advance research on boredom further, several improvements are needed. First, considering that the bulk of research reviewed in the present chapter had little, if any, grounding in theory, it is imperative that important theoretical issues be discussed. As previously mentioned, existing research on boredom does not typically address important theoretical issues such as what is boredom? What are the defining elements of the experience? What are boredom's varieties, forms, or subtypes? How can boredom best be defined?

The lack of a definitive definition of boredom is perhaps the most important theoretical limitation in the literature. The issue has not been widely considered, let alone collaboratively debated. Without a clear, comprehensive definition of the construct, research on boredom cannot move forward. Thus, conceptual clarity is needed regarding boredom's definition.

The Need for a New Measure of Boredom

In light of the poor self-report scales of boredom that do exist, the measurement of boredom also needs improvement. Although the existing measures have been used in a wide range of correlational studies such as those reviewed above, the measures suffer from a number of theoretical and psychometric limitations. Psychometrically speaking, the scales have weak internal consistency, poor construct validity, and unclear factor structures. Theoretically speaking, the scales were not developed based on a solid theoretical conceptualization or definition of boredom; as such, it is difficult to ensure that they are clear, structured, and valid measures. Indeed, in his review of the psychometric properties of existing boredom measures, Vodanovich (2003) noted that

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"the lack of an agreed-upon definition of boredom has limited the measurement of the construct and partly accounts for the existence of diverse approaches to assessing various subsets of boredom" (p. 570). Finally, it is important to note that the ZBS and BPS measure the *tendency* toward experiencing boredom, rather than the *actual* experience of boredom itself.

Goals of the Present Work

Thus, based upon a critical, synthetic theoretical discussion and a comprehensive, empirically-grounded definition, an improved self-report measure of boredom can be constructed. **Therefore, the goals of this dissertation are twofold: 1) to generate a comprehensive, well-grounded definition of boredom, based on a critical review and synthesis of theoretical and empirical (qualitative) literature; and 2) to develop a new, theoretically- and psychometrically-sound self-report measure of boredom that is based on this theoretical work.**

The first half of the dissertation focuses on the first goal, the theoretical and conceptual work. Specifically, Chapter 2 discusses three essential questions that are important for gaining conceptual clarity regarding boredom, including questions about boredom's key components and various manifestations. In this chapter, both theoretical and empirical literature are reviewed in order to construct a more theoretically-informed and empirically-grounded definition of boredom.

The second half of the dissertation focuses on the second goal, the development of a new measure of boredom. Beginning in Chapter 3, the limitations of existing boredom measures are reviewed. Then, Chapter 4 describes the construct delineation, item

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construction, and initial analyses of items for the new Multidimensional State Boredom Scale (MSBS). Chapter 5 describes research examining MSBS factor structure, and Chapter 6 describes the validation studies for the final version of the new scale. These validation studies assess MSBS factor structure, measurement invariance, and convergent and criterion validity. Finally, Chapter 7 contains a general discussion, considering the theoretical contributions of the present work, the utility of the MSBS, and some limitations and suggestions for future research.

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CHAPTER 2: A DEFINITIVE DEFINITION OF BOREDOM: THREE ESSENTIAL QUESTIONS

Although they demonstrate variety in their emphases, there are several commonly-cited definitions of boredom in the psychological literature. The earliest definition found in the psychological literature is from Lipps (1903): "Boredom is a feeling of unpleasure arising out of a conflict between a need for intense mental activity and lack of incitement to it, or inability to be incited" (cited in Fenichel, 1953, p. 292).[2] Later psychoanalytic authors (e.g., Fenichel, 1953; Greenson, 1953; Lewinsky, 1943) further emphasized that the desire for mental engagement is accompanied by an inhibition of activity, or an inability to identify what it is that one desires – in other words, wanting to do something, but not knowing *what it is* that one would like to do. For example, Greenson's (1953) commonly cited description of boredom captures this and other elements of boredom: "dissatisfaction and a disinclination to action; a state of longing and an inability to designate what is longed for; a sense of emptiness; a passive, expectant attitude with the hope that the external world will supply the satisfaction; a distorted sense of time in which time seems to stand still" (p. 7).

Non-psychodynamic definitions emphasize the degree or quality of stimulation in one's environment. For example, De Chenne (1988) defined boredom as "a negative affect involving a sense of inadequate stimulation from the environment" (p. 73). Similarly, O'Hanlon (1981) defined boredom as "a unique psychophysiological state that is somehow produced by prolonged exposure to monotonous stimulation" (p. 54).

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[2] The original article, and hence the definition, by Lipps was published in German.

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Somewhat more recently, Mikulas and Vodanovich (1993) also focused on the degree of stimulation from one's environment, but added the elements 'arousal' and 'dissatisfaction', ultimately defining boredom as "a state of relatively low arousal and dissatisfaction, which is attributed to an inadequately stimulating situation" (p. 3). Whereas some definitions of boredom emphasize the monotony of the environment or stimulation itself, others emphasize individuals' *perception* of their environment as monotonous (e.g., Hamilton, Haier, & Buchsbaum, 1984; Hill & Perkins, 1985; Todman, 2003).

Although there have been some attempts to propose definitive definitions of boredom (e.g., Mikulas & Vodanovich, 1993) and to provide relevant theoretical contributions (e.g., Fisher, 1993; Neu, 1998), such efforts remain unacknowledged and unintegrated within subsequent literature. Indeed, it appears that overall, the boredom literature is lacking integrative and systematic efforts to study the topic. Instead, it consists largely of atheoretical, one-time studies that correlate the tendency to become bored with other constructs. As a result, important theoretical and conceptual issues have not been discussed and remain unresolved. In particular, the lack of a uniform definition of boredom is a major limitation, and has been lamented by several authors (Martin, Sadlo, & Stew, 2006; Mikulas & Vodanovich, 1993; Vodanovich, 2003). For example, Mikulas and Vodanovich (1993) noted that there is no "comprehensive, integrated, functional definition of the construct 'boredom'" (p. 3). Ten years later, Vodanovich (2003) reviewed the literature and concluded that it remained limited by the lack of a "coherent, universally accepted definition" (p. 570). Indeed, although there are some existing

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definitions, as cited above, they have never been evaluated, debated, or even presented in the same article. Perhaps more importantly than there being a uniform or agreed-upon definition, what is needed is a comprehensive and well-informed definition that is both theoretically sophisticated and grounded in empirical research on the experience of boredom.

In order to achieve the conceptual clarity necessary for such a definition of boredom, three essential questions must be addressed. The first question is *what is boredom?* Or, in other words, what 'kind' or type of experience is it? Boredom has been conceived as several different kinds of experience, and it is not clear how the construct should best be conceived. For example, is boredom a mental state? An affective response? Perhaps an experience involving both cognitive and affective elements?[3] Second, *what are boredom's key distinguishing elements?* Although the literature is fragmented, it is clear that authors have described the experience of boredom as having several elements. In order to create a comprehensive definition, the distinguishing elements of the experience must be determined. A third fundamental question is: *Are there different varieties, forms, or subtypes of boredom*? If so, what are these types of boredom? For example, is boredom a state or a trait? Are there different types of boredom based on whether one is reacting to a particular event or not? And, if there are different types of boredom, what do they all have in common?

[3] Some investigators suggest that boredom should be conceived as a social or historical construction (e.g., see Spacks, 1995). However, my assumption in the present work is that boredom can be meaningfully conceived as a psychological entity. The present review does not explicitly explore boredom as a socially or historically situated concept.

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Answers to these essential questions will provide a basis for creating a definitive definition of boredom. Thus, in order to determine how boredom can best be defined, this chapter addresses each of the three questions via consideration of existing theoretical and qualitative literature. Then, based on this analysis, a new, comprehensive definition of boredom is generated, one that is both empirically-grounded and theoretically-informed.

Question One: What is Boredom?

There have been many different starting points in the psychological literature for defining boredom. In the definitions cited above, the authors labelled boredom 'a feeling of unpleasure', 'a negative affect', 'a unique psychophysiological state', and 'a state of relatively low arousal'. In his review of the early psychological literature, Smith (1981) noted that boredom was typically defined "as a feeling, a drive, or a conflict" (p. 339). In my review, which also included the most recent literature, boredom was considered a negative affect (e.g., De Chenne, 1988; Hamilton et al., 1984; Hartocollis, 1972; Leary et al., 1986; Watt & Blanchard, 1994), a drive (e.g., Berlyne, 1960), an unpleasant feeling (e.g., Greenson, 1951; Wangh, 1975), an emotion (e.g., Ahmed, 1990; Farmer & Sundberg, 1986; Damrad-Frye & Laird, 1989; Hebb, 1966), and a state (e.g., Fisher, 1993; Hebb, 1966; Mikulas & Vodanovich, 1993; von Gemmingen et al., 2003; Sundberg, Latkin, Farmer, & Saoud, 1991). Thus far, based on a review of the literature, boredom's potential 'kinds' include a feeling, emotion, affect, state, or drive.[4]

[4] For those authors who consider boredom to be an 'emotion', 'feeling' or 'affect', it does not appear that the authors make any fine distinctions between such terms. Rather, they all seem to be using these terms simply to refer to boredom as some kind of emotional experience.

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Furthermore, there is an additional dimension of negativity—that is, the experience of boredom has a negative valence and is unpleasant.

This analysis is consistent with emotion literature more broadly, in which some authors have included boredom in a dimensional or circumplex model of emotions (e.g., Posner, Russell, & Peterson, 2005; Russell, 1980; Russell & Mehrabian, 1977; Smith & Ellsworth, 1985). Typically in such models, two orthogonal dimensions are used to categorize emotions, with one dimension representing the degree of arousal (high versus low) and the other representing the degree of pleasantness-unpleasantness. Accordingly, in this literature, boredom is placed in terms of low arousal and negative valence.[5]

Other authors defined boredom as an experience with multiple components. For example, Hill and Perkins (1985) defined boredom as "an experience having cognitive, affective and (possibly psychophysiological) components" (p. 235), although their view was offered largely at a psychological level. O'Hanlon (1981) added to his starting point of 'a unique psychophysiological state' that boredom is a state "possessing interrelated and inseparable emotional, motivational, perceptual and cognitive components" (p. 53).

---

[5] In addition to dimensional models of emotion, there are also categorical approaches to understanding emotion. Categorical models consider emotions to be discrete entities with different adaptive functions, facial expressions, patterns of autonomic arousal, and so on. Typically, these models argue for a number of "basic" or primary emotions (e.g., authors such as Ekman, Izard, Plutchik, or Tomkins). Boredom is not typically discussed by such authors. One exception to this rule is the work of Plutchik (1980). In his psychoevolutionary theory of emotion, Plutchik (1980) included boredom in his structural model. Specifically, he argued that there are eight primary emotions that vary in intensity, similarity, and polarity, and that all other emotions are mixtures or combinations of the primary emotions. In his model, disgust is one of the primary emotions, and boredom is considered to be a less intense form of disgust, just as annoyance is a less intense form of anger. He notes that the function of disgust is to reject a toxic substance or experience. In addition, although Izard (1977, 1991) does not mention boredom in his key papers on interest as an emotion, he briefly refers to boredom in an encyclopedia entry (Izard, 2000). Here, he considers a temporary loss of interest to be "no more serious than a state of boredom" (p. 332), while a more enduring loss of interest is considered typical of depression.

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Wangh (1975) chose to call boredom "a state of mind" which, in doing so, leaves open "the decision whether boredom is an intellectual, cognitive mental state or an emotional, affective mental state" (p. 538). Ultimately, he concluded that boredom involves both cognitive (e.g., mental dullness) and affective (e.g., feeling of unpleasantness) components.

It is important to note that some individuals use the term 'boredom' more freely. For example, Hill and Perkins (1985) commented that some individuals use the term 'boredom' "to refer to more general states of negative affect" (p. 235). Similarly, Conrad (1997) argued that it is not clear what is meant when the term 'boredom' is used, because it is often used to simply describe "a feeling or situation that we find unpleasant or unrewarding" (p. 468). He further explained: "In our society, to call something boring attributes certain characteristics to it, at the same time discounting it or at least presenting it in a negative light. ...boring has become an all purpose term of disapproval, especially among the young" (p. 468). It is assumed in the present work, however, that although some individuals may use the term boredom loosely, or to imply that they simply dislike or disapprove of something, there remains a distinct psychological experience of boredom that can be specified and investigated.

So, what kind of experience is boredom? For the moment, it can be said that boredom is a negative psychological experience, wherein the term 'psychological' encompasses the potential emotional, cognitive, motivational components mentioned so far. The second essential question, *what are the key distinguishing elements of boredom*, will help

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further discern exactly what emotional, cognitive, or other components may be involved in this experience.

Question Two: What are the Key Elements of Boredom?

Although there have been individual studies that describe some of boredom's elements, there have not been any attempts to integrate these findings in order to create a definitive statement about its key elements. In what follows, I derive a number of defining elements of the experience of boredom, based on a) a review of theoretical contributions, b) eight qualitative studies on boredom, and c) a large qualitative study that I conducted in 2003 (Fahlman, Eastwood, & Williams, 2004). The theoretical selections were chosen after a comprehensive literature review, with the final selections spanning several decades of the psychological literature on boredom and including several theoretical orientations (i.e., Berlyne, 1960; Bernstein, 1975; Conrad, 1997; De Chenne, 1988; Fenichel, 1953; Fisher, 1993; Fiske & Maddi, 1961; Greenson, 1951, 1953; Hamilton et al., 1984; Hartocollis, 1972; Hebb, 1966; Hill & Perkins, 1985; Leary et al., 1986; Mikulas & Vodanovich, 1993; O'Connor, 1967; O'Hanlon, 1981; Perkins & Hill, 1985; Sundberg et al., 1991; Todman, 2003; Wangh, 1975; Windholz, 1951). The eight qualitative were published by Bargdill (2000a, 2000b), Conrad (1997), Fisher (1993), Gallagher, Harradine, and Coleman (1997), Harris (2000), Jervis, Spicer, and Manson (2003), Kanvesky and Keighley (2003), and Martin, Sadlo, and Stew (2006), the methodologies and findings from which are described in Appendix A. The methodology and findings from my qualitative study are described in greater detail in Chapter 4.

Element One: Activity / Arousal

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The first major element of boredom that can be discerned in the literature is the issue of activity, action, or arousal. Although authors have utilized diverse terminology, the need to be engaged in activity (and the 'failure' to do so) is one of the main features upon which definitions of boredom converge (e.g., Berlyne, 1960; Csikszentmihalyi, 1975/2000; De Chenne, 1988; Fenichel, 1953; Fiske & Maddi, 1961; Greenson, 1953; Hebb, 1966; Mikulas & Vodanovich, 1993; O'Hanlon, 1981; Sundberg et al., 1991; Todman, 2003). I will discuss the concepts of 'activity' and 'arousal' separately.

Activity

Several psychoanalytic authors mention the issue of a need for activity. For example, Lipps (1903) articulated 'a need for intense mental activity and lack of incitement to it, or inability to be incited' in boredom. Similarly, Fenichel (1953) included "a need for activity" or "urge to activity" in his definition of boredom. Fenichel's concept of 'normal boredom' is doing what one does not want to do, or *not* doing what one *does* want to do. Other authors have described a lack of interest or connection with the current activity or environment. For example, Fisher (1993) defined boredom as "a pervasive lack of interest...in the current activity" (p. 396) and Sundberg et al. (1991) mentioned "a lack of interest or connection with the current environment" (p. 210).

Arousal

Other authors have utilized the terms 'arousal' or 'stimulation' in their respective definitions of boredom. Although the authors' use of these terms may suggest that they are describing something different from 'activity', they are indeed describing the same fundamental issue of engagement with the environment. For example, De Chenne (1988)

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mentioned "a sense of inadequate stimulation from the environment" (p. 73). Similarly, O'Hanlon defined boredom in terms of "prolonged exposure to monotonous stimulation" (p. 54). In contrast to the definitions in the previous paragraph which emphasize the individual and his or her need for activity or connection, the definitions from De Chenne and O'Hanlon focus on the 'objective conditions' of the individual's surroundings. Specifically, they consider the stimulation to be 'inadequate' or 'monotonous'. In a later definition, Mikulas and Vodanovich (1993) also stated that individuals seek to maintain an optimal level of arousal and that boredom is 'a state of relatively low arousal.' Yet, as made explicit by Mikulas and Vodanovich, such low arousal must be experienced as objectionable for it to count as an instance of boredom. Similarly, it is inherent in the definitions from De Chenne and O'Hanlon that the monotonous or inadequate stimulation is undesirable for the individual. Indeed, it appears that the low arousal *must be lacking* in some way (i.e., the individual must desire something more or different), otherwise low arousal would simply be experienced as relaxation, for example. In other words, low arousal is not always equivalent to a perceived lack of activity unless there is a mismatch between the current level of activity or arousal and the level *desired or needed by* the individual.

Neo-behaviourist definitions of boredom most explicitly draw on concepts of 'arousal' and 'stimulation'. Some of these authors emphasize the subjective state of the individual and some highlight the external conditions of the stimuli. For instance, Fiske and Maddi (1961) emphasized the individual's state. They argued that organisms seek to maintain a normal level of activation and that negative affect is experienced when "activation level

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differs markedly from normal level" (p. 46). In particular, they maintained that boredom is one component of a low level of arousal. Berlyne (1960), in contrast, emphasized the conditions of the stimulation itself. He asserted that boredom is produced "when external stimuli are excessively scarce or excessively monotonous" (p. 187), and that problematic stimuli tend to lack novelty, uncertainty, or complexity. In his textbook of psychology, Hebb (1966) noted that mental activeness or play is found in monkeys, apes, and humans and that the need for 'mental exercise' and varied stimulation are fundamental for these organisms. He further argued that humans seek a balance between low and high arousal and that boredom is associated specifically with low arousal or low activity. He further argued that "*Boredom* is a state in which the subject seeks a higher level of excitement, usually in some form of play" (p. 250). Again, the underlying concept is one of an individual lacking appropriate or satisfying engagement in activity. Although some authors disagree with the use of the term 'stimulation' due to the fact that it emphasizes the environmental stimuli and "connotes a passive reactivity" to these stimuli (i.e., Todman, 2003), it is clear that all of these authors agree that a bored individual is lacking an appropriate degree of activity or engagement in activity.

Evidence From Qualitative Research

Remarkably, but perhaps unsurprisingly, the central issue in boredom described in the eight qualitative studies was identical to that of the theoretical literature described above. Upon review of these studies, it is apparent that the primary issue in the experience of boredom is a lack of, or disengagement from, activity. This disengagement can be characterized in several ways. The first way is in terms of 'understimulation', a low

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amount of activity, having 'nothing to do', or having a lack of things to do (e.g., Harris, 2000; Jervis et al., 2003; O'Connor, 1967), in other words, a kind of 'quantitative underload' (Fisher, 1993). A second way to characterize the disengagement from activity is via the qualitative features of the activity: the activity is perceived to be too simple, repetitive, redundant, or lacking challenge or complexity (Gallagher et al., 1997; Harris; Kanevsky & Keighley, 2003), in other words, a kind of 'qualitative underload' (Fisher). Third, and oppositely, an individual can become disengaged in the face of a 'qualitative overload' (Fisher), where the activity may be too complex for an individual to become engaged. That is, the information or activity is too difficult for an individual to connect with, thus creating the feeling of lacking appropriate or satisfying activity. Finally, although one lacks engagement in activity during boredom, it is important to note that an individual *wants* something to do (e.g., O' Connor) or wants to be near excitement (e.g., Jervis et al.), but may be unable to fulfill this need. Although the individual wants to do something, he or she may not be able to identify what that 'something' might be (e.g., Martin et al., 2006).

Results from my qualitative study were similar. I found that boredom is the negative experience of a lack of engagement in satisfying activity. Boredom was most commonly referred to in terms of "having nothing to do" – a lack of activity – or in terms of participating in activity that one does *not* desire (which can involve feelings of constraint, repetitiveness, etc.). Again, a bored individual *does* desire to be engaged in activity, although in the moment, it can be difficult to identify specifically what activity would be satisfying (i.e., the experience of not knowing what it is that one wants to do). However,

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based on my findings, it is clear that a desirable activity is one that would be experienced as interesting, exciting, or entertaining, or one that has some form of meaning, purpose, or personal significance.[6] Interestingly, several authors have noted theoretical links between meaningfulness and boredom (e.g., Fiske & Maddi, 1961; Frankl, 1959/1962/1984; Maddi, 1967, 1970; Svendsen, 2005), and correlational research has consistently shown that boredom is negatively related to individuals' sense of life meaning and purpose (e.g., Fahlman et al., in press; Melton & Schulenberg, 2007; Passik, Inman, Kirsh, Theobald, & Dickerson, 2003; Weinstein, Xie, & Cleanthos, 1995).

Another important finding in the qualitative studies was that boredom can occur not only in the absence of activity but also *during the course of an activity*, namely activity that can be characterized by qualitative features such as repetitiveness, simplicity, or lack of challenge (i.e., parallel to Fisher's [1993] 'qualitative underload' concept). The notion that undesirable activities can be characterized as repetitive, monotonous, or lacking in complexity is entirely consistent with definitions of boredom proposed by O'Hanlon (1981), Berlyne (1960), and Todman (2003). It is also consistent with Fenichel's definition of 'normal' boredom as 'doing what we do not want to do'. Finally, the finding that an individual may not be able to identify what it is that he or she would like to do (e.g., Fahlman et al., 2004; Martin et al., 2006) is consistent with psychoanalytic authors' descriptions of boredom (e.g., Fenichel, 1953; Greenson, 1953; Lewinsky, 1943).

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[6] Indeed, the desire for more interesting or stimulating activities perhaps explains boredom's associations with impulsive, sensation-seeking-type behaviours (Mercer, 2008), including binge eating (e.g., Stickney & Miltenberger, 1999), marijuana use (e.g., Lee, Neighbors, & Woods, 2007), or alcohol abuse (e.g., Wiesbeck, Wodarz, Mauerer, Thome, Jakob, et al., 1996).

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In sum, based on this review and analysis of theoretical and empirical literature, it is clear that a major component of the experience of boredom is a lack of engagement in appropriate or satisfying activity (which, clearly, can occur in the absence *or* the presence of current activity). Thus, I believe that a definition of boredom should include the component of *disengagement*[7] *from satisfying activity.*

Element 2: Dissatisfaction and Difficulty

Dissatisfaction

Closely related to the issue of activity, boredom has been characterized as a *negative* experience, especially in terms of dissatisfaction or displeasure. The experience of boredom is typically described as *displeasing* or *unsatisfying*. It has been referred to as a 'negative reaction' (De Chenne, 1988), 'unpleasant' (Fisher, 1993), 'aversive' (Perkins & Hill, 1985), 'unpleasurable' (Fenichel, 1953), and dissatisfying (Bernstein, 1975; Greenson, 1953; Mikulas & Vodanovich, 1993; Todman, 2003). Additionally, Bernstein referred to "the restless discontent" (p. 521) and "restless dissatisfaction" (p. 518) of boredom. Mikulas and Vodanovich (1993) added the term 'dissatisfaction' to their definition of boredom, arguing, "*for it to be boredom, the person must not like it*" (p. 5, emphasis added). This is particularly important because, as Mikulas and Vodanovich illustrated, an individual can experience low arousal during relaxation and *not* feel bored. Thus, they argued that dissatisfaction is another necessary element in the experience of boredom.

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[7] The term 'disengagement' was purposefully chosen over the term 'unengagement' to denote that the experience of boredom involves a sense of something being lost, as opposed to something simply being lacking or absent. That is, the bored individual is aware that their experience could be different and yearns for this. Thus, it is as though boredom is more than just a 'lack' of engagement; it is more like a disrupted engagement.

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Difficulty

Furthermore, not only does boredom involve dissatisfaction with the current activity, an additional, subtle point is that boredom is a negative experience that *itself* is difficult to bear. Phrases such as 'bored to death', 'bored to tears', or 'bored to distraction' demonstrate the variety and intensity of its difficulty (Bernstein, 1975). Hartocollis stated that boredom is "an unpleasant or painful feeling, even though it may not impress the observer as much as the suffering that depression or anxiety usually suggest (sic)" (p. 96-97). Wangh (1975) and Sundberg et al. (1991) also mentioned the pain and unpleasantness of boredom. Wangh maintained that "the feeling of boredom is unpleasant—usually only mildly so, but it may become quite painful" (p. 538). Sundberg et al. noted that boredom ranges "from mild to severe unpleasantness" (p. 210). Finally, Bernstein claimed that boredom is an experience for which we have a limited tolerance. He stated that observers of bored individuals can detect "frantic and desperate efforts of the chronically bored to find relief from their misery" (p. 515). Thus, it appears that boredom is especially painful to tolerate. On top of it being an experience that involves dissatisfaction in and of itself, boredom has an added quality whereby the experience involves an intense desire to eliminate or change one's current mental state and reach a different mental state.

Evidence From Qualitative Research

Qualitative studies (e.g., Fahlman et al., 2004; Martin et al., 2006) support the idea that boredom is a negative, stressful, and difficult experience. In my study, participants' comments demonstrated just how difficult boredom is: "It drives me crazy"; "I don't

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really let myself get bored because I hate it so much"; "[It is] painful"; "Want to die"; "I hate being bored"; "Feel like jumping out of my skin"; "Boredom is a killer. Can't stand it." Indeed, that boredom is a negative, stressful experience is also consistent with quantitative studies linking boredom and poor psychological well-being (e.g., Hunter & Csikszentmihalyi, 2003), general negative affect (e.g., Gordon, Wilkinson, McGown, & Jovanoska, 1997), and lower life satisfaction (e.g., Farmer & Sundberg, 1986).

Based on this consensus in the theoretical literature and qualitative research, I believe that the experience of boredom is negative and contains a definite element of dissatisfaction. Thus, I believe that a definition of boredom should include an element of *dissatisfaction* and *difficulty*.

Elements Three and Four: Inattention and Time Perception

The third and fourth major components of the experience of boredom are two cognitive elements: a) difficulty paying attention, and b) perception that time is passing slowly.

Inattention

The issue of attentional control – specifically, difficulty paying attention when bored – has been widely mentioned in the psychological literature (e.g., Bernstein, 1975; Fisher, 1993; Hamilton et al., 1984; Hartocollis, 1972; O'Connor, 1967; Leary et al., 1986; Todman, 2003). For Bernstein (1975), one major feature of boredom is "the difficulty in paying attention" (p. 516). Similarly, Hartocollis noted that boredom involves "an inability to synchronize attention with the activities of the surroundings" (p. 96). In her definition of boredom, Fisher also included "difficulty concentrating on the current

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activity" (p. 396). She maintained that, during boredom, individuals "feel that it takes conscious effort to maintain or return attention to [an] activity" (p. 396).

Todman (2003) subscribed to the definition of boredom proposed by Mikulas and Vodanovich (1993) but added "the experiential component of *attentional constraint*" (p. 149). Todman explained that it makes little sense for a bored individual to continue to attend to monotonous stimuli; thus, he argued that normal coping mechanisms (e.g., self-distraction through fantasy) are not 'brought to bear' when bored. He concluded that the dissatisfaction in boredom is caused by the conflict between the "psychological injunction to allocate attentional resources...to a stimulus environment that is no longer interesting versus the natural tendency to reallocate attentional resources to the exploration of new environments" (p. 149). Similarly, Leary et al. (1986) maintained that boredom goes beyond mere disinterest, in that it occurs when an individual "must exert concerted effort to maintain their attention on a particular stimulus" (p. 968). They argued that rather than switching one's attention when a stimulus is not 'intrinsically captivating', the individual continues to attend and thus becomes bored. Relatedly, Hamilton et al. (1984) conceptualized both boredom and interest as "'affects' associated with paying attention" (p. 184). They argued that boredom and interest are part of "an affective-experiential continuum that accompanies the cognitive, information-processing act in attention" (p.184).

Evidence from qualitative research. The qualitative studies clearly demonstrated that attentional difficulties are part of boredom. For example, studies by both Harris (2000) and Martin et al. (2006) found that participants experience wandering attention or poor

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concentration when bored. Findings from my qualitative study were consistent in this regard, but slightly more nuanced. Specifically, participants described changes in their thought processes, including having 'no thoughts' (blank mind), experiencing wandering or 'out of control' thoughts (i.e., frantic, preoccupied, distracted mind), or generally trying to think about what to do next. Additionally, the inability to control one's attention was particularly common among their statements: "I get distracted very easily and my mind wanders off"; "When I'm bored, I can't seem to focus on anything"; "When I wander off even if someone is talking about something I thought I was interested in."

Clearly, the issue of attentional difficulty is a candidate element for defining boredom. Some of the theorists cited above consider inattention to be a feature of boredom itself, whereas other authors believe that disrupted attentional processes *cause* boredom (e.g., Cheyne, Carriere, & Smilek, 2006; Leary et al., 1986; Hamilton et al., 1981; Damrad-Frye & Laird, 1989). Further, Mikulas and Vodanovich (1993) argued that attention difficulties are an *outcome* or *consequence* of boredom, rather than part of boredom per se. However, participants in the qualitative studies clearly described attentional difficulties as a feature of boredom, rather than a cause or consequence of boredom. Thus, based primarily on these qualitative findings, I assume that inattention is another key element in boredom. Thus, I believe a definition of boredom should include *inattention* as a defining feature of the experience.

Time Perception

Another common feature of boredom described in theoretical literature is distorted time perception – that is, time is perceived to move more slowly during the experience of

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boredom (e.g., Conrad, 1997; Fenichel, 1953; Greenson, 1953; Hartocollis, 1972; O'Connor, 1967; Wangh, 1975). Indeed, an obvious point here is that the German word for boredom, *Langeweile*, literally translates into 'long while' or 'long time.' Fenichel (1953) pointed out that this basic feature of the experience of boredom is how it got its German name. As he explained, during boredom,

> there are always changes in the person's subjective experience of time. When we experience many varying stimulations from the outside world, the time, as we know, appears to pass quickly; but should the external world bring only monotonous stimuli, or should subjective conditions prevent their being experienced as tension-releasing, then the 'while is long.' (p. 301)

Hartocollis (1972) also described "a slow-moving, almost immobile present" (p. 99) during boredom. Greenson (1953) highlighted "a distorted sense of time in which time seems to stand still" (p. 7), and, in another article, "the torturous waiting, and the painful slowness of the passage of time" (1951, p. 346). Wangh (1975) mentioned "the unpleasant feeling of concern with the passage of time in boredom" (p. 539). More specifically, Wangh described how one's time perception is altered during boredom: "Time seems endless, there is no distinction between past, present, and future. There seems to be only an endless present" (p. 541). Hartocollis also discussed the concept of an 'endless present'. He argued that different affects have an inherent time dimension. More specifically, whereas anxiety and fear are oriented toward the future and 'coming evils', depression and grief are oriented toward the past, and evils 'that have already occurred'. With respect to boredom, however, he stated that "more than any other affect,

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boredom is experienced as a disturbance in the sense of time" (p. 96).[8] Hartocollis specifically linked boredom with a displeasing focus on the present moment.[9]

Evidence from qualitative studies. A painful awareness of time during boredom was found in several of the qualitative studies (e.g., Fahlman et al., 2004; Jervis et al., 2003; O'Connor, 1967; Martin et al., 2006), in that time passes slowly or is difficult to fill. In my qualitative study, participants generally described a negative awareness of the passage of time, having nothing interesting to fill time, or experiencing time as filled with repetitive activity. Additionally, participants described wanting to pass the time as quickly as possible, how time 'drags', and how it feels as though time is being wasted during boredom.

Like inattention, Mikulas and Vodanovich (1993) argued that changes in time perception are an outcome or consequence of boredom, rather than an integral defining feature of boredom itself. However, it is abundantly clear that the other authors cited above and the participants in the qualitative research described changes in time perception as a major feature of the experience of boredom. Thus, based on the majority of theoretical writing on this topic and the robust evidence from the qualitative research, I believe that *perception of time passing slowly* is another key element in the experience of boredom. Consequently, I believe that a definition of boredom should include *changes in time perception.*

Element Five: Emotional Components of Boredom

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[8] I do not necessarily share Hartocollis' definition of boredom as an affect.

[9] Hartocollis further pointed out that an endless present or timelessness can potentially be pleasurable, for example, during the use of alcohol, ecstasy, or LSD. During such experiences, "the present becomes eternity, as in the experience of boredom, except that the subject is able to enjoy it rather than suffer with it; to be with it, rather than without" (p. 106).

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Several emotional components of boredom have been suggested in the literature, and these elements are also important to consider when constructing a comprehensive definition of the construct. These emotional components expand upon and specify the idea that boredom is a negatively valenced, disagreeable feeling, as described in the first section. However, unlike the previous five elements that were all considered necessary features of the experience of boredom, the various emotional components described below are not *all* experienced by an individual during a single episode of boredom. Instead, I believe that an individual will experience *at least some* of the following emotional features of boredom outlined below.

Irritability and Frustration

In the literature, increased irritability and frustration are commonly mentioned elements of boredom (e.g., Bailey et al., 1976; Hartocollis, 1972; Hill & Perkins, 1985). In particular, Hill and Perkins (1985) claimed that both dislike and boredom share negative affect as a common feature, yet boredom is associated with a high degree of frustration while dislike is not. Mikulas and Vodanovich (1993) disagreed with Hill and Perkins, arguing that frustration is often confused with boredom, but is not boredom per se. They contended that "as a general rule, a person does not feel bored and frustrated ...at the same time" (p. 7). However, the qualitative studies support the arguments of Hartocollis and Hill and Perkins, in that the researchers unquestionably found irritability and frustration to be a part of the experience of boredom (i.e., Harris, 2000; Kanevsky & Keighley, 2003; Martin et al., 2006; and Fahlman et al., 2004). Indeed, these findings

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appear to dispute the claim of Mikulas and Vodanovich that frustration is not typically experienced at the same time as boredom.

Anger

Mikulas and Vodanovich (1993) made a similar argument regarding anger, though this claim may also be unfounded, considering the evidence in some of the qualitative research that anger can be a part of the experience of boredom (e.g., Bargdill, 2000b; Fahlman et al., 2004). Furthermore, previous quantitative studies have linked boredom and anger (e.g., Rupp & Vodanovich, 1997; Vodanovich, Verner, & Gilbride, 1991).

Anxiety

Some theoretical work (e.g., Csikszentmihalyi, 1975/2000) has linked anxiety and boredom. In two of the qualitative studies (e.g., Fahlman et al., 2004; Harris, 2000), a large number of participants described anxiety as a component of boredom. This finding is consistent with quantitative research that has linked these two constructs (e.g., Fahlman et al., in press; Sommers & Vodanovich, 2000; Vodanovich, Verner, & Gilbride, 1991).

Sadness, Dysphoria, and Emptiness

Depression and boredom have been established as highly related yet separate constructs (e.g., Fahlman et al., in press; Farmer & Sundberg, 1986; Greenson, 1953; Neu, 1998). Thus, it is not surprising that participants commonly described feelings of sadness or dysphoria as part of their experience of boredom (e.g., Fahlman et al., 2004; Harris, 2000; Martin et al., 2006). Additionally, several quantitative studies have also shown significant correlations between measures of boredom and depression (e.g., Farmer & Sundberg, 1986; Sommers & Vodanovich, 2000).

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Closely related to depression, authors such as Greenson (1951, 1953) and Sundberg et al. (1991) have described boredom as involving feelings of emptiness. This was indeed described by some participants in the qualitative studies (e.g., Bargdill, 2000b; Fahlman et al., 2004; Harris, 2000).

In sum, the emotional components are another defining feature of the experience of boredom. In my view, the negativity of boredom is evident in *at least some type* of negative emotional experience, which can include irritability, frustration, anger, anxiety, sadness or emptiness. Again, it is very important to note that they are not *all* experienced by an individual at the same time; rather, each is a potential element of boredom, and these elements can be present in various combinations, though at least one will always be present. Consequently, a definition of boredom should include *the full range of potential emotional elements* of boredom.

Element Six: Impaired Vitality

The final component of boredom could be conceptualized as a motivational element, yet the term 'motivational' has several meanings and is thus too imprecise. Instead, I have chosen the term 'vitality', which I explain after a brief review of relevant literature.

Agitated versus Lethargic Boredom?

Several authors have described the contrasting experiences of agitation or restlessness in boredom, versus lethargy or tiredness in boredom (e.g., Berlyne, 1960; Bernstein, 1975; Fenichel, 1953; Fiske & Maddi, 1961; Greenson, 1953). In other words, whereas restlessness and tension are said to be associated with boredom, the opposite experiences of tiredness, lethargy, and tedium are also said to be experienced during boredom. Fiske

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and Maddi (1961), for example, noted that "lethargic feelings and overt reactions of irritability and restlessness" accompany boredom and that "one or another of these somewhat opposed forms of reaction may predominate in a given subject" (p. 110). They cite Davis (1948), who found that boredom was associated with tiredness in an 'inert' group and with "excessive responses" in an 'over-reactive' group. Davis observed that "any one subject can show combinations of these several reactions, at least during different stages in the extended time period" (cited in Fiske & Maddi, 1961, p. 110). Similarly, Bernstein (1975) stated that boredom coexists with restlessness and apathy and that these two forms can "dominate the picture of one person's boredom while the other may dominate the next, or their dominance may alternate within one person, but restlessness and apathy are always present together to some degree in boredom" (p. 516). Some psychoanalytic authors have labelled this distinction as 'agitated' versus 'apathetic' boredom (e.g., Fenichel, 1951, 1953; Greenson, 1953).

Evidence from qualitative studies. Indeed, several of the qualitative studies found that the experience of boredom involves restlessness and fidgetiness (e.g., Fahlman et al., 2004; Harris, 2000; Martin et al., 2006), which is consistent with the theoretical literature described above. For example, participants in my study described how engaging in an activity that one does not desire creates agitation, restlessness, and feelings of constraint. On the other hand, there was also the contrasting finding that boredom involves lethargy or tiredness, which participants described using the terms 'energy' or 'motivation.' That is, boredom involving restlessness and frustration was described as having an excess of energy or having high motivation (e.g., "When I have lots of energy and nothing to do

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with it"); in contrast, boredom involving tiredness and lethargy was described in terms of having low energy or a lack of motivation (e.g., "When I am bored, I usually feel tired"; "Just not having the energy or drive to do anything"). Similarly, participants in the studies by Harris and Martin et al. mentioned a lack of motivation during boredom, or "a dispiriting lack of energy or motivation to become engaged" (Martin et al., p. 206).

Impaired Vitality in Boredom

How can it be that some individuals feel restless, agitated, and full of energy during boredom, and others experience weariness, lethargy, and a lack of energy? I believe that these opposing manifestations are not different 'types' of boredom, because they are often experienced by one individual during a single episode of boredom (i.e., Bernstein, 1975; Fiske & Maddi, 1961). It cannot simply be said that motivation is impaired during boredom, since, as was noted in the first key element of boredom, a bored individual always desires more satisfying engagement in activity; in this sense, a bored individual is always 'motivated' toward satisfying activity or engagement. However, the re-engagement process is somehow blocked or prevented, otherwise, boredom would never endure. Thus, as part of lacking engagement, an individual oscillates between resignation and agitation. In one instance, the individual resigns himself or herself to the disengagement, actively withdrawing, giving up, and experiencing an associated loss of physical energy. In the next instance, his or her sense of efficacy or agency[10] is briefly

[10] Some authors have explicitly discussed link between boredom and passivity or personal agency (e.g., Bernstein, 1975; Greenson, 1953). Bernstein (1975) described how chronically bored individuals experience themselves as 'phonies' in that rather than fully participating in life, they have the feeling that they are "always observers of the passing scene, watching it all happen as though from some distant vantage point" (p. 517). Greenson (1951) commented on the bored individuals' "passive, expectant attitude toward the external world" and, in another article, the "passive, expectant attitude with the hope that the

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reignited, and he or she moves into a period of restless, desperate, agitated grasping, with a corresponding high level of physical energy. I consider this oscillation to be disruption in *vitality*: one's degree of physical energy to act, as well as one's sense of agency or efficacy to become re-connected with satisfying activity.

Thus, in terms of my definition, I believe that a final element in the experience of boredom is *impaired vitality*, which involves the oscillation between having a sense of efficacy and physical energy to re-connect with satisfying activity, and then lacking this sense of efficacy and physical energy in the next moment. Again, because they are often experienced by the same individual, I do not consider these manifestations to be different types of boredom; they are simply different aspects of one element, namely impaired vitality. Indeed, these two poles of impaired vitality correspond with specific negative emotions described above: the restless, agitated, sense of energy and efficacy is associated with feeling irritability, frustration, anger, or anxiety; in contrast, the resigned, lack of energy and efficacy is associated with feelings of sadness, dysphoria, and

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external world will supply the satisfaction" (Greenson, 1953, p. 7). The link between boredom and personal agency was also apparent in some of the qualitative studies, which found a tendency toward passivity and a diminishment of the individuals' intentionality, sense of agency, or self-determination (e.g., Bargdill, 2000b; Kanevsky & Keighley, 2003; Martin et al., 2006). For example, Kanevsky and Keighley's participants described 'boring' school experiences as associated with a lack of control or choice. Such experiences involved copying, repetition, and passive listening. Thus, these students' understanding of boredom was similar to Fisher's 'qualitative underload' concept, although in Kanevsky and Keighley's study there was an emphasis on the individuals' sense of agency and on experiencing oneself as active and 'alive'. In Bargdill's study, participants were originally "active and interested in their lives", pursuing desired life goals and projects, but they eventually adopted a passive and avoidant stance when they sacrificed key life goals and thus grew bored with more aspects of their lives. Interestingly, a related finding in my qualitative study was that participants described feeling somewhat powerless or unable to remedy their feeling of boredom. This sense of futility or helplessness may be a similar, though less pronounced, experience. Perhaps this element accounts for boredom's relationship with constructs with inherent agentic dimensions such as assertiveness (e.g., Tolor, 1989), locus of control (e.g., Hunter & Csikszentmihalyi, 2003), procrastination (e.g., Blunt & Pychyl, 1998; Vodanovich & Rupp, 1999), psychosocial development (Watt & Vodanovich, 1999), and self-actualization (e.g., McLeod & Vodanovich, 1991).

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emptiness. In sum, I believe a comprehensive definition of boredom should include the element of *impaired vitality*.

Summary of Key Elements of Boredom

Based on the above analysis, it is clear that there are multiple defining elements of boredom. The first element is disengagement from activity, which is closely linked with the second element, dissatisfaction, difficulty, and the desire to change one's mental state. Cognitive elements include changes in time perception (i.e., that it is passing slowly) and changes in one's ability to pay attention. Emotional elements of boredom include a combination of specific negative emotions such as irritability, frustration, anger, anxiety, sadness or emptiness. Finally, boredom involves impaired vitality, such that an individual oscillates between a feeling of low energy and efficacy (i.e., tired resignation) and a feeling of heightened energy (i.e., restless [and fruitless] grasping). I believe all six of these elements are candidates for inclusion in a comprehensive definition of boredom.

However, before moving on to the creation of a new definition of boredom, one must also ask how boredom manifests, or whether it has different forms or subtypes. In the literature, investigators have used the term 'boredom' to refer to a variety of different experiences. According to my analysis, some of the ways in which the different types of boredom have been distinguished are redundant with one another and some are not. These different dimensions or types of boredom must also be described and taken into account in order to construct the best definition of boredom. Thus, now that the core elements of boredom have been discerned, what can be said about the different 'types' of

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boredom described in the literature? Are all of these types accounted for by the core elements I have extracted?

Question Three: Are There Different Types of Boredom?

The third essential question concerns whether there are different types of boredom and, if so, what these types might be.[11] Indeed, several 'types' of boredom have been described in the literature, in particular, 'state' versus 'trait' boredom. In the following section, I argue that the distinction made between 'state' versus 'trait' boredom actually encompasses three, non-overlapping dimensions: a temporal dimension (duration of boredom across time), a locus of causation dimension (the individual versus environment as causally important), and a pathology dimension (normal versus pathological boredom). In addition, I highlight a fourth, separate dimension, wherein types of boredom are distinguished based on the role of objects (referent-specific versus non-specific boredom). These dimensions are discussed in turn, beginning with the issue of state versus trait boredom.

'State' Versus 'Trait' Boredom

One of the most common distinctions in the literature is between 'state' and 'trait' boredom. Vodanovich (2003) concluded that "it would be useful for researchers to differentiate between (and assess) state and trait boredom" (p. 589). Indeed, boredom has been explicitly been defined as a state by several researchers cited earlier (e.g., Fisher, 1993; Mikulas & Vodanovich, 1993). Fisher defined boredom as a "transient negative

[11] As described earlier, some authors distinguished agitated and apathetic forms of boredom; however, I argued that these are not different types of boredom per se, but merely different sub-components of boredom that can be experienced serially for an individual.

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affect" or emotion that is "shorter-lived" than something like an attitude (p. 396). Regarding their definition of boredom as a 'state', Mikulas and Vodanovich noted that 'state' implies "a state of being or state of consciousness, a particular combination of perceptions, affect, cognitions, and attributions," and that 'state' also implies a *transitory* experience, because an individual "may be in a state of boredom in one instant and not in the next instant" (p. 3). However, many authors have discussed how, in addition to being a state-like experience, boredom can be a more enduring, trait-like experience. For example, O'Connor (1967) commented that boredom can run "from brief episodes of tedium occasioned by particular events (a boring book, movie, conversation) to protracted and pervasive moods of melancholy and ennui, which border on pathological depression and despair" (p. 382). Psychoanalytic authors, in particular, have contrasted a more state-like boredom with a more trait-like or chronic boredom. Wangh (1975) stated that boredom can come on quickly, being "highly labile," yet he also discussed "those who are chronically bored" (p. 549). Indeed, Wangh established different forms of boredom as they vary across time. Greenson (1953) and Windholz (1951) also discussed types of boredom that vary in temporal duration, yet their conceptualization implicitly adds an element of pathology. Specifically, Greenson argued that boredom occurs "in *healthy* people as a transient state" (p. 7, emphasis added) and then discussed a case example of a chronically bored 29-year-old woman, in particular the "oral impulses and the defense mechanisms involved in this syndrome" (p. 8). Similarly, Windholz mentioned "transient or 'normal' boredom, a reaction to external frustration" as well as "the habitual boredom of a character neurosis" (p. 345). Indeed, with the use of terms

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such as 'normal' and 'neurosis,' their conceptualizations imply that state boredom is not only shorter-lived than trait boredom but that trait boredom is also a *more pathological* experience than state boredom.

Other psychoanalytic authors' discussion of state and trait boredom confounds three separate issues: the temporal dimension, the pathology dimension, and what I call a 'locus of causation' dimension. Fenichel (1953) contrasted 'normal boredom' with 'pathological boredom'. In his view, normal boredom "arises when we must not do what we want to do, or must do what we do not want to do" (1951, p.359). He argued that humans "have *the right to expect* some 'aid in discharge' from the external world. [And] if this is not forthcoming, we are, so to speak, justifiably bored" (p. 359-360). In contrast, he argued that pathological boredom involves "an instinctual tension which, while its aim is repressed, is nevertheless perceived, although it is denied, and from which the subject hopes to be rescued by an intervention from the outside world" (p. 300). Similarly, Bernstein (1975) argued for 'responsive boredom', which he defined as a responsive feeling, and 'chronic boredom', which he defined as a malaise. He claimed that responsive boredom is "an affective response to an appropriate external situation" or "a transient feeling response evoked by a specific external circumstance" (p. 513). He argued that a monotonous task could evoke this type of boredom in any individual, for example, when trapped in one's cottage during a week of rainy weather. Importantly, in responsive boredom, a change of environment is assumed to readily reduce boredom. On the contrary, chronic boredom among those "who are bored all or most of the time" is "a chronic feeling state,...a specific psychopathological entity, the expression of an internal

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dysfunction" (p. 513). In chronic boredom, "external change avails little" (p. 514). (Indeed, there are published case reports of individuals experiencing chronic or habitual boredom in recent literature [Bargdill, 2000; Drob & Bernard, 1987] and one even describing a man who was 'almost bored to death' [Maltsberger, 2000].)

According to my analysis, both Fenichel's (1953) 'normal' boredom and Bernstein's (1975) 'responsive' boredom imply a *temporary* boredom (temporal dimension) that is *non-pathological* in nature (pathology dimension). Importantly, they also imply that this type of boredom occurs *in reaction to an external situation*, a distinct issue that I call the 'locus of causation dimension.' In contrast, 'pathological' boredom or 'chronic' boredom are both enduring across time (temporal dimension), clearly pathological (pathology dimension), and stem from within an individual rather than in response to an external situation. Clearly, these are three non-overlapping dimensions that have been subtly confounded in discussions of state versus trait boredom.

Further examples can be found in more recent boredom literature. Neu (1998) distinguished between *endogenous* and *reactive* boredom. His distinction is between boredom that comes 'from within' (i.e., endogenous boredom) and boredom that comes 'from without' or in reaction (i.e., reactive boredom). He compared these terms to *endogenous depression*, which is 'sadness without cause,' and *reactive depression*, which is a response to an external event, such as the death of a loved one. He argued, "similarly, there is boredom from within, which tends to color the whole of life, and there is reactive boredom, which seems to arise as a response to more particular objects" (p. 160). Thus, Neu explained that in order to determine whether boredom should be regarded as reactive

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or endogenous, one must consider "whether a feature of the *object* or of the *person* is thought to explain the state" (p. 160, emphasis added). Indeed, this is a pure example of types of boredom that are distinguished by the locus of causation dimension. Similarly, Todman (2003) recently argued that there are 'two non-mutually exclusive conceptions of boredom and boredom proneness,' which he labelled *situation-dependent boredom* (SDB) and *situation-independent boredom* (SIB). In situation-dependent boredom, he noted, there is a "central role for environmental conditions" (p.147). Thus, it is "the natural response to external stimulus conditions that are understimulating and/or repetitive. Once these stimulus conditions are removed, it is assumed that the feelings of boredom will also dissipate" (p. 147). In contrast, SIB is a category of boredom experiences that are "neither triggered nor maintained by specific environmental conditions" (p.149). Todman cites examples from psychoanalytic literature and existential literature of this type of chronic boredom. Clearly, Todman has also distinguished between two types of boredom based on a locus of causation dimension.[12]

In sum, the concepts pathological versus normal, chronic versus responsive, endogenous versus reactive, and situation-independent versus situation dependent appear to make similar distinctions, yet there are extremely important differences between them. The simple interpretation of these concepts is that boredom can be a normal reaction experienced by almost anyone, in a state-like form, in response to an inadequately stimulating environment (i.e., 'state boredom'), or boredom can be experienced by some

[12] Though Todman does add a pathology dimension to SIB: He says that this literature converges on two points: "1) Chronic boredom results from an inability to utilize the coping mechanisms needed to provide escape from monotony and to give perspective and meaning to the routine activities of life..., and 2) many of the components of this type of boredom proneness—such as depression, a constricted fantasy life, distorted time perception—are maladaptive, if not pathological" (p.149).

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individuals more pervasively across a range of environments (i.e., 'trait boredom'). The major difficulty, however, is that discussions of state and trait boredom in the literature have conflated three separate dimensions outlined above: the temporal dimension, the pathology dimension, and the locus of causation dimension. With respect to the temporal dimension, 'state' brings to mind something presently occurring that changes and fluctuates easily over time, and 'trait' brings to mind something more permanent that endures over time. With respect to the pathology dimension, 'state' implies a 'normal' experience that can happen to anyone, whereas 'trait' implies a pathological experience that presumably occurs in a smaller proportion of the population.[13] Finally, with respect to the locus of causation dimension, the terms connote a 'locus' or presumed 'cause' of a phenomenon: 'state' connotes a reaction to specific environmental stimuli, but 'trait' connotes an experience that arises from within an individual.

Thus, the temporal, pathology, and causal dimensions are three separate distinguishing dimensions that are confounded among descriptions of boredom's 'types.' While many authors have discussed the idea of state and trait boredom, they have not always been describing the same concept. For example, the discussion of boredom as a 'state' by Fisher (1993) and Mikulas and Vodanovich (1993) clearly referred to a *temporal* state. The psychoanalytic authors described above discussed trait or chronic boredom, though they imply all three dimensions: temporal, causal, and pathological. Finally, Neu's (1998)

[13] At this point, it is not entirely clear what would constitute a 'pathological' experience of boredom versus a non-pathological one. However, it is clear that the pathology dimension itself is a coherent, distinct dimension that has been used to describe different types of boredom. Thus, the concept of 'pathological boredom' should be investigated and expanded in future research.

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endogenous and reactive boredom and Todman's (2003) SIB and SDB both emphasize the locus of causation dimension only.

Boredom and the Locus of Causation Dimension

Although the temporal dimension and the pathological dimension are relatively straightforward, the locus of causation dimension deserves further attention. Again, the distinction here is between boredom that occurs in reaction to a problematic environment and boredom that 'comes from within' an individual.

Most definitions of boredom emphasize the degree of external stimulation in one's environment, and some authors have argued that this dimension is the most important for distinguishing between different forms of boredom. Bernstein (1975), for example, argued that the main difference between responsive and chronic boredom is "not in the duration or the frequency of the feeling but in the location of the cause" (p. 514). He provided the example of an individual living in constant fear because his or her life "is always in real danger, and the constancy of that fear does not make it anxiety," adding that "it is possible to live a life of constant boredom because the real circumstances of that life are boring, and it remains responsive, not chronic, boredom" (p. 514). Bernstein's example refers to poor or uneducated individuals who are forced to face chronic boredom because they are 'trapped in menial jobs' and 'economically unable to avail themselves...of stimulating variety and change'. However, can we really distinguish between types of boredom based on a locus of causation? I believe that locating a cause of boredom is particularly problematic. How can, as Bernstein described, 'real circumstances' that produce boredom be determined? Does every individual in a 'menial'

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job automatically find it boring? How can it be determined whether an individual is responding to an external stimulus or whether his or her reaction is coming from within? These questions broach the issue of environmental monotony versus the role of the individual.

Environmental monotony versus the role of the individual. It has been pointed out by several authors (e.g., Conrad, 1997; Fisher, 1993; Neu, 1998) that individuals do not react in the same manner to the same external objects. O'Hanlon (1981) maintained that boredom occurs in reaction to monotonous stimulation and yet, decades of research in industry have found that "degrees of boredom reported by different individuals in the same monotonous working environment vary greatly" (p. 54). Fisher (1993) argued that the assumption of traditional approaches that boredom occurs due to "causes outside the person" (e.g., repetitive tasks) is not sufficient. Relatedly, it has been argued that monotony alone is not sufficient to produce boredom. Neu (1998) discussed how repetition is not necessarily boring and may actually be enjoyable, for example, children hearing the same stories, dogs playing fetch, or adults praying the same prayers. He concluded that "monotony is not by itself sufficient to explain the boredom, or monotony should always lead to boredom. But it doesn't" (p. 162). Wangh (1975) also argued that monotony is not sufficient for boredom, citing similar examples (e.g., infants hearing similar lullabies, children hearing the same stories). He concluded that "the quality of the external stimulus, or the lack of it, does not lead in a straight line toward boredom" (p. 547).

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Perkins and Hill (1985) emphasized *perceptions* of monotony, independent of 'actual' monotony as crucial for boredom (i.e., subjective monotony, rather than objective monotony). They argued for a cognitive component of boredom, namely the manner in which an individual 'construes' an event: "two persons confronted by the same set of physical stimuli may construe them differently and consequently have different experiences" (p. 235). Their research has shown that construing "in a very differentiated and heterogeneous manner" results in an experience of subjective variety and thus interest in a given task, whereas construing in a "more undifferentiated and homogeneous" manner leads to the experience of subjective monotony and boredom. They concluded that "boredom occurs when stimulation is construed as subjectively monotonous" (Hill & Perkins, 1985, p. 237). Relatedly, Fisher (1993) maintained that although there are 'objective task and environmental conditions' which have 'main effects' on boredom" (i.e., increase the probability that a given situation will be perceived as boring), she also discussed 'main effects' of the *person* on boredom, including intelligence, personality, and mental health, current concerns, or schema complexity. However, she concluded that *both* individual and external factors should be considered, saying that "a more complex approach suggests that certain individual differences...*interact* with the specific content of situations to produce boredom" (p. 396-397, emphasis added) and thus "a more sophisticated view of both the situation and the person is needed" (p. 404).

Similarly, Neu (1998) commented on the role of the individual in so-called 'reactive' depression. He noted that internal factors (such as love for someone who has died) also

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contribute to reactive depression. He therefore concluded that, depending on our purposes, "we always pick out 'the' cause from a multiplicity of causal factors" (p. 163) and that "insistence on a contrast between 'objective' and 'subjective' features may not ultimately be helpful in understanding the difference between reactive and endogenous boredom" (p. 163). Similarly, Conrad (1997) argued that boredom cannot be considered an *either/or* phenomenon with respect to external or internal causes: "Boredom is not a characteristic of an object, event or person, but exists *in the relationship between* individuals and their interpretation of their experience. ...While there may be some activities that are nearly universally experienced as boring, this does not negate the insight that boredom is a relationship and is not intrinsic to any event or object" (p. 468-469, emphasis added). He concluded that there are no intrinsically boring objects or events and that "'Boringness' isn't out there; it is between there and us" (p. 474).

As a result of these difficulties, I believe it is unfeasible to distinguish between internal and external causal factors of boredom, as every experience of boredom is likely always a combination of internal and external factors. Thus, I assume in the present work that the simple distinction between externally- or internally- caused boredom is inadequate. Indeed, internal and external factors are both important and can contribute to *both* state (i.e., temporary) or trait (i.e., long-term) boredom – that is, locus of cause and temporal duration are separate issues. In the present work, I assume that there can be an enduring or long-term experience of boredom (temporal distinction) that can be influenced by *both* internal and external factors (locus of cause distinction) *and their interplay*. There can also be a current or temporary experience of boredom that is

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influenced by both internal and external factors. With respect to the pathology distinction, it is assumed that this is yet another separate issue from types of boredom that are distinguished by the temporal dimension. That is, many authors have assumed that boredom that endures over time is automatically a more pathological experience than boredom that changes quickly. However, I believe it is possible for a 'long-term boredom' to still be a non-pathological experience. Thus, I believe that the temporal dimension and the pathology dimension are orthogonal. In sum, I conclude that boredom can manifest along a temporal and a pathology dimension, but the locus of causation dimension is problematic and unhelpful.

Types of Boredom: A View from Within

The distinctions made above could all be described as ones made 'from the outside looking in.' However, the *phenomenology* of boredom—how the experience 'seems' or 'feels' to an individual in a given moment—may be different than how it appears to an external observer. Typically, during boredom an individual feels as though the external world is problematic or 'to blame', but this feeling may or may not be valid. Below, I describe different types of boredom in which distinctions are made 'from the inside looking out'.

Boredom and referents. A further approach to distinguishing types of boredom takes into consideration objects or referents. On one hand, boredom can have a specific focus or referent, or on the other hand, it can be a more diffuse experience without a particular target. For example, one may feel bored with a specific lecture or book (referent), or one may feel bored with one's life in general. This distinction has been noted in the literature

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by Neu (1998) and O'Connor (1967). Neu contrasted 'particular' versus 'general' objects in boredom, which involves a distinction between "being bored by something in particular and ...finding life boring" (p. 163). O'Connor argued that the term boredom is used "both for direct and reflexive conscious states" (p. 383). He explained that a 'direct' use of the term would be 'I was bored by the lecture', compared to a reflexive use, which would be 'I am utterly bored.' He concluded "that there are two kinds of boredom, one directed at particular phenomena, the other at one's self" (p. 383). Essentially, both authors have pointed out the difference between being bored 'by' or 'with' a particular object and being bored in general, without a specific referent to presumably 'cause' one's boredom.

Boredom as a mood versus boredom as an emotion. Svendsen (2005) recently made a similar distinction in his discussion of 'boredom as a mood' versus 'boredom as an emotion.' He argued that when one is in the midst of a particular mood, everything one sees will reflect this mood; in contrast, emotions tend to be more specific and can be related to particular objects: "A mood is always general, affecting the world as a whole. Emotions are not necessarily general...Broadly speaking, we can say that an emotion normally has an intentional object, while a mood is objectless. Moods have more to do with the totality of all objects, i.e., the world as a whole" (p. 110). With respect to boredom specifically, Svendsen argued that it can be either a mood or an emotion: "It is an emotion one when one is bored by something specific and it is a mood when the world as such is boring" (p. 111).

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Indeed, these distinctions made by Neu (1998), O'Connor (1967), and Svendsen (2005) make the same point using different terminology. Specifically, they argued that when boredom has an object or referent, it can be conceptualized an emotion; when it does not have an object or referent, it can be conceptualized as a mood. This referent versus no-referent categorization is distinct from the three dimensions (temporal, pathological, locus) discussed earlier. That is, one may be tempted to argue that boredom with a referent is the same as state (externally-caused) boredom while boredom without a referent is more like trait (internally-caused) boredom. I believe, however, that this argument would be an incorrect consolidation of terms. Presumably, one could have a 'temporary' or 'state-like' experience of boredom that does not have a referent, for example, temporarily feeling as though one is bored with one's life during an extended break from school or work. Furthermore, the reverse could also be true; one could experience a more 'long-term' or 'trait-like' boredom that *does* have specific referents. Such a possibility is demonstrated, for example, in Maltsberger's (2000) 'man almost bored to death', who mentioned several referents for his chronic boredom, including work, friends, and hobbies.

Types of Boredom: Summary and Conclusions

In sum, I have extracted four different dimensions on which 'types' of boredom can be derived or categorized. In the existing boredom literature, discussions of 'state' and 'trait' boredom have confounded several, non-overlapping dimensions that can be used to describe different types of boredom. The first dimension is a temporal one. Here, 'state' means a short duration and 'trait' means a longer duration over time. The second

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dimension is a locus of causation dimension. Here, 'state' suggests an experience that is in reaction to an external stimuli and 'trait' suggests an experience that comes from within. This dimension, however, is problematic, since every experience of boredom is likely influenced by a combination of both internal *and* external factors. The third dimension is a pathology dimension. Here, 'state' refers to a 'normal' experience while 'trait' refers to an abnormal or pathological experience. Finally, the fourth dimension involves the role of objects; sometimes boredom has a specific referent (i.e., Svendsen's 'boredom as an emotion') and sometimes it does not (i.e., 'boredom as a mood'). Overall, it is important to note that because these four dimensions are discrete or orthogonal, one must specify which dimension one is referring to when using the terms 'state' and 'trait' boredom.

Finally, I return to my earlier question of how types of boredom are related to the key elements of boredom that I extracted. Did this discussion of types of boredom reveal any missing elements? I believe that the elements extracted in response to question two are, in fact, *separate* from the types and dimensions of boredom just described. That is, the key elements of boredom apply to *all the dimensions*; the dimensions simply represent different aspects of the same experience. Thus, the elements of boredom I extracted would be present among all of the different manifestations of boredom. Whether boredom manifests temporarily, with or without a referent, in a pathological form or not, the defining features of boredom are the same: boredom still involves disengagement from satisfying activity, dissatisfaction and difficulty, inattention, altered time perception, impaired vitality, and some combination of the emotional elements.

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How Can Boredom Best be Defined?

Having considered what boredom is, its components, and its types or manifestations, existing definitions of boredom can now be evaluated. As noted earlier, definitions of boredom have never been assessed or compared to one another to determine the merit of each. The commonly-cited definitions reviewed at the outset of this paper are clearly quite diverse, yet there has been little, if any, consideration of their strengths and weaknesses. Mikulas and Vodanovich (1993) stated that their paper would provide a "comprehensive, integrated, functional definition" of boredom and that they would review "a number of critical distinctions" (p. 3). Interestingly, although their definition is one of the more commonly cited, it does not appear to have made a substantial impact on the field as a whole.

More so than a simply universally agreed-upon definition of boredom, I believe that a *comprehensive* and *well-informed* definition is needed. As such, I believe boredom can best be defined by integrating existing theoretical contributions, analyzing important conceptual issues, and integrating findings from qualitative research. The three questions discussed in this chapter comprise the fundamental conceptual work required for generating such a definition of boredom and, in this work, I have considered and integrated qualitative research findings. This work provides the basis for a comprehensive, empirically-grounded, and theoretically-informed definition of boredom.

In answering the question of boredom's key elements, I demonstrated that boredom is a psychological experience with both affective and cognitive components. As such, boredom is defined as more than simply an emotion or negative affect; it can be thought

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of as a complex set of interrelated psychological, emotional, cognitive, and motivational elements. Indeed, boredom is more like a condition or syndrome—a collection of 'symptoms' or elements—rather than a cognitive or affective experience alone.

Evaluating Existing Definitions

I illustrated that the key elements in the experience of boredom include a) disengagement from activity, b) dissatisfaction and difficulty, c) inattention, d) distorted time perception, e) impaired vitality, and f) a combination of emotional components such as irritability, frustration, anger, anxiety, sadness, and emptiness. Based on these results, it is clear that all of the existing definitions of boredom cited earlier are lacking.

First, Lipps' (1903) definition (i.e., "a feeling of unpleasure arising out of a conflict between a need for intense mental activity and lack of incitement to it, or inability to be incited") includes the elements of disengagement and dissatisfaction, but does not mention any of the cognitive or emotional components. Greenson's (1953) description of boredom mentions disengagement ("disinclination to action", "state of longing") and dissatisfaction ("dissatisfaction"), some of the cognitive elements (i.e., time perception: "a distorted sense of time in which time seems to stand still"), and some of the emotional components (e.g., "sense of emptiness", "passive, expectant attitude"). However, he does not mention difficulty paying attention or the full range of possible emotional components, such as frustration or anxiety.

Both De Chenne's (1988) and O'Hanlon's (1981) definition suffer from similar limitations. De Chenne called boredom "a negative affect involving a sense of inadequate stimulation from the environment" (p. 73). This definition alludes to the issue of activity

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or stimulation, but is very narrow in scope. His definition focuses only on the idea of environmental stimulation, leaving out the role of the individual and the complex interplay between persons and environments. The concept of 'inadequate' stimulation is useful, however, as it leaves room for disengagement to occur either with or without activity occurring. O'Hanlon's "unique psychophysiological state that is somehow produced by prolonged exposure to monotonous stimulation" (p. 54) also emphasizes environmental stimulation at the expense of the individual. Furthermore, his emphasis on 'monotonous' stimulation is too narrow, as I have already discussed how monotony is not sufficient for boredom to occur and how the more important issue is disengagement from activity. Finally, neither of these two definitions includes the cognitive or emotional components of boredom.

Lastly, Mikulas and Vodanovich's (1993) definition also has some limitations. They called boredom "a state of relatively low arousal and dissatisfaction, which is attributed to an inadequately stimulating situation" (p. 3). First, as they explained, they use the term 'state' to mean temporary.[14] However, in my discussion of types of boredom, it was clear that experiences of boredom can go beyond the short-term. Mikulas and Vodanovich's concept of 'relatively low arousal' covers the concept of disengagement, but it focuses only on a *lack* of activity, thus excluding the possibility that disengagement can occur during the course of an activity. Other strengths of their definition are the inclusion of the 'dissatisfaction' element and the notion of 'attribution', or the role of the individual in

[14] These authors also noted that state means "a state of being or state of consciousness, a particular combination of perceptions, affect, cognitions, and attributions" (p. 3). Given their definition, however, it is unclear what they believe the affect or cognitions in boredom to be, considering that they purposely exclude frustration and anger from their definition.

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perceiving a given situation. Unfortunately, these authors explicitly defined boredom as separate from experiences such as frustration or anger. Indeed, findings from qualitative research overwhelmingly support theorists who identified several affective components of boredom. As I have argued above, boredom contains at least some emotional components, which can include frustration or anger. Finally, Mikulas and Vodanovich do not mention either of the cognitive elements, inattention and changes in time perception.[15]

My Definition of Boredom

After reviewing existing definitions of boredom, reviewing and evaluating important theoretical issues, and considering the findings from qualitative research, I have generated a definition of boredom that is more comprehensive, theoretically-informed, and empirically-grounded than previous definitions.[16] This new definition addresses the six defining elements of boredom, including the central issue of an individual's desire for engagement in activity of appropriate quantity and quality, the dissatisfaction that this engagement is not occurring, as well as the cognitive components, emotional components, and impaired vitality:

> *Boredom is a psychological syndrome, or a collection of symptoms that must be present in a specified combination. Boredom primarily involves a desire to be engaged in interesting, meaningful, or otherwise satisfying activity, yet being disengaged from such activity and dissatisfied that this disengagement is occurring.*

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[15] Indeed, these authors purposely excluded inattention from their definition, reasoning that it is an outcome of boredom rather than a feature of boredom itself.

[16] In fact, very few, if any, authors referenced theoretical or empirical data used as the basis for their respective definitions.

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The disengagement can include a sense of there being nothing available to do (i.e., low stimulation), having to do something that one does not want to do (i.e., constraint), or not knowing what it is that one wants to do. Cognitively, the bored individual experiences a slow passage of time and an inability to focus his or her attention. Vitality is impaired during boredom, in that the bored individual oscillates between agitated, high energy and desperate attempts at finding satisfying activity, and lethargy, low energy and resignation. In addition, the experience of boredom always involves a combination of negative emotions, such as agitated affect (e.g., frustration, irritability, anger), or dysphoric affect (e.g., sadness, emptiness).

Although these core features of boredom are always present, boredom can manifest along several dimensions. It can be experienced across varying durations of time (temporal dimension); it can be a 'normal' experience or take a more pathological form (pathology dimension); and it may or may not have a specific referent or focus (role of objects dimension).

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CHAPTER 3: EXISTING MEASURES OF BOREDOM AND THE RATIONALE FOR NEW MEASURE

Beginning in this chapter, I move from the creation of a more comprehensive definition of boredom to constructing a new self-report measure of boredom based on this definition. After describing and critiquing the existing measures of boredom, I provide my rationale for the development of the Multidimensional State Boredom Scale (MSBS). Subsequent chapters will describe the actual construction of the MSBS.

Overview of Existing Boredom Measures

As described earlier, the two foremost measures of boredom used in the psychological literature are the Boredom Susceptibility Scale (ZBS) by Zuckerman (Zuckerman, 1979; Zuckerman, Eysenck, & Eysenck, 1978), and the Boredom Proneness Scale (BPS) by Farmer and Sundberg (1986).[17] Each scale is reviewed in light of its psychometric and theoretical limitations.

Boredom Susceptibility Scale (ZBS)

The earliest published measure of boredom is the Boredom Susceptibility Scale (ZBS), a subscale of Zuckerman's Sensation Seeking Scale (SSS), Form V (Zuckerman, 1979; Zuckerman, Eysenck, & Eysenck, 1978). Zuckerman defined sensation seeking as a trait involving the "need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experience"

[17] In addition to these two scales, several other boredom measures exist, including the Job Boredom Scale (JBS; Lee, 1986), Boredom Coping Scale (BC; Hamilton, Haier, & Buchsbaum, 1984), Leisure Boredom Scale (LBS; Iso-Ahola & Weissinger, 1990), Free Time Boredom (FTB) scale (Ragheb & Merydith, 2001), and the Sexual Boredom Scale (SBS; Watt & Ewing, 1996). However, these particular scales are not only limited in scope but have received extremely little empirical attention. Thus, I focus on the scales that have received the most attention in the psychological literature.

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(Zuckerman, 1979, p. 10). As a subscale of the SSS, the ZBS measures the inability to tolerate monotonous environmental stimulation, or "an aversion to repetition, routine, and dull people, and restlessness when things are unchanging" (Zuckerman, Eysenck & Eysenck, 1978, p. 140). Thus, *boredom susceptibility*, the inability to tolerate monotonous surroundings, is conceptualized as a trait on which individuals vary. The subscale consists of 10 pairs of forced-choice items (e.g., "I get bored seeing the same old faces" versus "I like the comfortable familiarity of everyday friends").

Zuckerman (1979) reported that the internal consistency reliability of the ZBS ranges from .56 to .65, with a three-week test-retest reliability of .70. Similarly, in a review of 21 articles reporting coefficient alpha statistics for the ZBS, Deditius-Island and Caruso (2002) found a mean and median coefficient alpha of .62 and .61, respectively. Zuckerman (1979) himself has concluded that "the [SSS] scales have shown good internal consistency and retest reliability, ...with the exception of [Z]BS" (p. 121). The ZBS has been significantly correlated with personality traits such as extraversion (e.g., Eysenck & Zuckerman, 1978) and impulsivity (e.g., Dom, De Wilde, Hulstijn, & Sabbe, 2007), as well as risky behaviours such as gambling (e.g., Bonnaire, Lejoyeux, & Dardennes, 2004), drug use (e.g., Zuckerman, 1979), and drunk driving (e.g., Arnett, 1990b).

Boredom Proneness Scale (BPS)

In developing the BPS, Farmer and Sundberg (1986) also focused on boredom as a trait. They defined boredom as the degree of "connectedness with one's environment on many situational dimensions, as well as the ability to access adaptive resources and

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realize competencies" (p. 10). Thus, *boredom proneness* is the tendency toward experiencing boredom in terms of connectedness with one's environment. The original BPS consisted of 28 true-false items, had an internal consistency reliability of .79, and a one-week test-retest reliability of .83 (Farmer & Sundberg, 1986). It was significantly correlated with individuals' self-reports of boredom proneness (r = .67), with lack of interest (r = .23) and attention (r = -.29) in the classroom, and with depression (r = .54), hopelessness (r = .41), loneliness (r = .53), and life satisfaction (r = -.42; Farmer & Sundberg, 1986). In order to increase its sensitivity, Vodanovich and Kass (1990a) converted the BPS into a seven-point Likert format. The internal consistency of this version has been reported to range from .79 to .83 (Ahmed, 1990; McLeod & Vodanovich, 1991; Vodanovich & Kass, 1990a), with a one-week test-retest reliability of .79 (Polly, Vodanovich, Watt, & Blanchard, 1993).

Limitations of Existing Measures

Although these two measures have been used in a wide range of studies, they suffer from a number of theoretical and psychometric limitations (also see Vodanovich, 2003). Theoretically speaking, the scales were not developed based on a uniform or well-grounded definition of boredom. In addition, these scales only measure trait-like tendencies and do not assess the experience of boredom itself. In terms of their psychometric properties, the scales have relatively weak reliability, poor convergent validity, and poorly established factor structures. These issues are described in further detail below.

Reliability

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As noted above, the ZBS and BPS have rather poor reliability. Because the reliability of a measure is a necessary (but insufficient) condition for its validity, an unreliable measure can never be valid. Reliability estimates of .70 or less are considered low, unless the tests are being used for broad goals such as preliminary screening purposes (Murphy & Davidshofer, 2001); thus, BPS approaches moderate levels of reliability, while ZBS has low reliability. Overall, the reliability of these measures is inadequate for research purposes, and certainly inadequate for use in applied settings.

Convergent Validity

The convergent validity of BPS and ZBS is questionable. Using the original true-false format of the BPS, Farmer and Sundberg (1986) found only a weak correlation with the ZBS (r = .25). Kass and Vodanovich (1990) also reported a weak correlation between these two measures (r = .29). More recently, Mercer (2005) found a slightly larger correlation between the 7-point BPS and the ZBS (r = .34). Considering that these scales are both intended to measure trait boredom, such low correlations suggest that their convergent validity is problematic.

Factor Structure

The factor structure of the ZBS is of concern. As a subfactor of the Sensation Seeking Scale (SSS), its factor structure is weak compared to the other SSS subscales. Zuckerman (1979) noted that, unlike the other subscales of the SSS, ZBS has not been "reliably identified between the sexes and national samples" (p. 121). Specifically, although ZBS item factor loadings were small to moderate in males (average .37, range .25 to .50), they averaged only .16 (range .03 to .39) in females (Zuckerman, Eysenck, & Eysenck, 1978).

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The BPS factor structure is also problematic. The scale was designed with the assumption that boredom proneness is a unidimensional construct. Empirical research using the BPS, however, has not supported a single-factor structure for this scale. For example, Ahmed (1990) found a three-factor solution, one of which he eliminated because it was dominated by a single item. The remaining two factors he labelled 'apathy/interest in environment', and 'inattention.' Based on a review of the literature, Vodanovich and Kass (1990a) hypothesized that boredom consists of five factors: 1) lack of external stimulation; 2) perception of time; 3) constraint; 4) affective responses; and 5) ability to keep oneself entertained. Using the 7-point Likert form of the BPS, they found partial support for this solution. Gordon, Wilkinson, McGown, and Jovanoska (1997) found only partial support for the five-factor solution proposed by Vodanovich and Kass. In another study, Vodanovich, Watt, and Piotrowski (1997) described eight factors of the BPS: 1) perception of time; 2) internal stimulation: creativity; 3) external stimulation: monotony; 4) constraint; 5) affect; 6) patience; 7) internal stimulation: attention and maintenance; and 8) external stimulation: challenge. Most recently, Vodanovich, Wallace, and Kass (2005) presented evidence for a two-factor short form of the BPS, including an Internal Stimulation and an External Stimulation factor. Thus, although there is strong evidence that the BPS is not unidimensional, no clear conclusion has been reached as to how many factors do underlie BPS items.

Theoretical Issues

Theoretical and psychometric issues are intimately related. More specifically, without a solid conceptualization of the experience of boredom, it is difficult to create a clear,

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structured, and valid measure of the construct. This is certainly one reason behind the difficulties with BPS and ZBS. Indeed, in his review of the psychometric properties of boredom measures, Vodanovich (2003) noted that the lack of a widely-accepted definition of boredom is one limitation of the boredom literature, and that this lack of a "coherent, universally accepted definition ... has limited the measurement of the construct and partly accounts for the existence of diverse approaches to assessing various subsets of boredom" (p. 570). Farmer and Sundberg's (1986) definition of boredom, as evidenced in the construction of the BPS, clearly has a different emphasis than the definition used by Zuckerman in developing the ZBS. Thus, as argued earlier, a more fully-developed definition of boredom is necessary, one that has firmer grounding in theory and empirical observation. Such definitional, conceptual advancement is needed to construct an improved measure of boredom.

Furthermore, as discussed in Chapter 2, boredom appears to have several key components as well as several different manifestations that should be taken into consideration with respect to the measurement of the construct. Unfortunately, existing measures of boredom do not comprehensively address these major components, nor do they fully acknowledge boredom's different forms or types. That is, although BPS and ZBS assess one's *tendency to become bored*, neither of them assess the actual (state) *experience of boredom in a given moment*. The creation of a new measure with more comprehensive content, as well as an awareness of boredom's manifestations, would allow for more precise and complete study of boredom.

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Rationale for the Multidimensional State Boredom Scale (MSBS)

In light of the growing relevance of and interest in studying boredom, the measurement of boredom must be improved. As Vodanovich (2003) concluded in his review of boredom measures:

> It would be beneficial for future researchers to focus on the development of additional measures of boredom, particularly those that are both multidimensional and full-scale in nature. Ideally, the construction of such measures would be guided by an integrated theory and definition of boredom. ...In addition, it would be useful for researchers to differentiate between (and assess) state and trait boredom. (p. 588-589)

Thus, a new measure should be a full-scale measure of the experience of boredom, not limited to a single domain (e.g. job boredom). Furthermore, a new measure should be constructed based on a coherent theory and definition of boredom.

The *Multidimensional State Boredom Scale* (MSBS) was created to address the theoretical and psychometric limitations of previous measures. In contrast to existing scales that were not necessarily guided by any particular theory or empirical grounding, the development of the MSBS was guided by an in-depth analysis of the phenomenology of boredom as well as the review of existing qualitative and theoretical literature (Chapter 2). As a result, the MSBS is more comprehensive in scope and more faithful to the experience in question. Being a multidimensional measure, the MSBS allows for more comprehensive measurement of the experience of boredom. Finally, the MSBS allows for the measurement of the experience of boredom itself, in a given moment, as opposed to

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examining the trait of boredom proneness or boredom susceptibility. The following chapter describes the construction of this measure.

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CHAPTER 4: CONSTRUCT DELINEATION, ITEM CONSTRUCTION, AND INITIAL ANALYSIS

Construct Delineation

The creation of the MSBS was achieved in several stages, the first of which are described in the present chapter. The initial construction of a scale typically involves construct delineation and subsequent item construction. Thus, in order for the MSBS to be a theoretically-informed, full-scale measure of the experience of boredom, existing theoretical and empirical literature was first reviewed and analyzed (Chapters 1 and 2) in order to assist with construct delineation. Furthermore, detailed information about the experience of boredom was sought out with qualitative research. However, when this project began in 2003, existing qualitative studies were deemed somewhat limited. Specifically, although two of the studies used large sample sizes (i.e., Gallagher et al., N = 871; Harris, N = 170), the data from these particular studies were not sufficiently detailed with respect to the experience of boredom itself, in that they consisted solely of a list of specific associations with boredom. In contrast, the qualitative studies employing in-depth interviews were a richer source of data, but were conducted with small samples ranging from only six to ten individuals,[18] making it difficult to generalize the results to a larger population. Furthermore, most of the in-depth interviews available at the time were conducted with individuals experiencing chronic or frequent boredom. It was thus unclear how similar these findings would be to a conceptualization of boredom derived from a more normative sample.

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[18] Specifically, Kanevsky and Keighley (2003), N = 10; Jervis et al. (2003), N = 10; Bargdill (2000a, 2000b), N = 6; and Martin et al. (2006), N = 10.

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A New Qualitative Study

Consequently, due to the limited availability of information on the experience of boredom, I conducted a new qualitative study (Fahlman, Eastwood, & Williams, 2004). This study sampled from a general population rather than from individuals experiencing extreme boredom in order to examine how boredom is experienced in everyday life (i.e., state, 'non-pathological' boredom). In addition, a large sample size was used ($N = 199$) to allow for more generalizable results. The purpose of the study was to perform an exhaustive, in-depth analysis of the phenomenology of boredom to better understand the components of the experience. An additional goal of the study was to aid in establishing a comprehensive definition of the experience of boredom (Chapter 2). In general, this approach to defining boredom was intended to ensure an empirically-based, well-grounded, and ecologically-valid basis for the MSBS.

Participants and Procedure

Participants were 199 undergraduate students (81% female, 19% male) recruited from introductory psychology courses. Participants' mean age was 20.7 ($SD = 5.0$, range 17 to 53). Participants were asked to provide written responses to two open-ended questions: 1) "Describe what the experience of boredom means to you"; and 2) "What is the experience of boredom like for you? Please describe what you think/feel/experience while you are bored."

A modified grounded theory analysis (Strauss & Corbin, 1998) was conducted on written responses to the two questions. For each question, the analysis was completed in three stages: 1) open coding, 2) axial coding, and 3) selective coding. During the process

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of open coding, labels or 'codes' were used to break apart the data, carefully dissecting the data into categories (codes) until all meaningful data was included. For example, responses to question one initially required 41 codes to include the entire scope of data. After breaking down the data for each question, categories were reviewed for accuracy and reworked or revised where necessary (e.g., for question one, the *decision* category had only one passage which fit more accurately under *inability*).

During the axial coding stage, connections within and between categories (codes) were established first by analyzing and taking extensive notes on themes within each category and then by simultaneously reviewing categories to find relationships *between* them. At that point, some categories were combined because of their conceptual similarities. For example, for question one, the categories *drive/motivation* and *energy* were combined to make *drive/motivation/energy*. They were similar in that participants described either having no drive, motivation, or energy to do things when they were bored, or having much drive, motivation, or energy to do things but that it is not successfully expended or put into action. At the end of axial coding, analysis of question one data resulted in five major categories, some with several subcategories.

Finally, during selective coding, the discovered links between the categories are tightened and refined in order to understand the concepts at a higher, theoretical level. However, this step could not be completed because the data were too shallow; that is, each participant provided only two or three written sentences to each question. Thus, higher conceptual relationships could not be detected without more detailed information.

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Instead, the final axial coding categories and illustrative quotes were taken as the final results.

Results

Similar to the defining elements of boredom discussed in Chapter 2, it was determined that to be bored is to perceive one's environment as inadequately providing for one's need for engagement in satisfying activities. Boredom was most commonly referred to in terms of "having nothing to do" in terms of a lack of activity (including not knowing what it is that one wants to do) or the presence of activity that one does *not* desire. Some representative quotes include: "It's a feeling of doing nothing. Often I feel boredom when I am sitting around and just waiting with nothing to do"; "I get frustrated because I want to do something fun but nothing appeals to me at that time"; "I want something to happen but [I'm] not sure what"; and "Boredom means engaging in an activity that strongly disinterests me and does not stimulate my interest in any way regardless of my earnest efforts to concentrate and become enthusiastic."

Whereas some participants described a desire for activities that were interesting, exciting or entertaining, others emphasized the desire for activities with some form of meaning, purpose, or personal significance: "Boredom is the feeling that the activity you are doing (or not doing) is pointless and has no significance in the greater scheme of things"; or "Boredom is doing a routine activity which has no meaning or significance to you." In sum, boredom was predominantly described as feeling disengaged from one's environment, or more specifically, feeling disengaged from interesting or meaningful activity. Importantly, a bored individual does desire to be engaged. However, when one is

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bored, it can be difficult to identify specifically what activity would be satisfying (i.e., not knowing what it is that one wants to do), yet it is certain that a desirable activity is one that would be experienced as interesting, exciting or entertaining, or has some form of meaning, purpose, or personal significance.

In addition to the core component of 'having nothing to do', participants described common emotional experiences associated with the lack of engagement, including anxiety, irritability, emptiness, or sadness: "I get pretty annoyed when bored"; "I feel very empty"; and "I get a little depressed and sometimes moody." Cognitive changes were also described, including changes in attention and problems concentrating (e.g., "When I'm bored, I can't seem to focus on anything"; "I get distracted very easily and my mind wanders off"). Changes in the perception of time were also commonly reported (e.g., "Time seems to travel very slowly"). Finally, whereas some participants described boredom as marked by restlessness and an excess of energy (e.g., "when I have lots of energy and nothing to do with it"), others associated boredom with tiredness and a lack of motivation (e.g., "When I am bored, I usually feel tired"; "Just not having the energy or drive to do anything").

Item Construction

The creation of the initial pool of items for the MSBS was guided primarily by these findings and also by the theoretical and conceptual review described in Chapter 2. The data from the qualitative analysis were particularly useful not only because they contained detailed information about the major components of the experience of boredom, but also they provided information about the manner in which participants

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tended to speak or think about the experience of boredom. This information, in turn, aided item wording. In total, 76 items were constructed (Appendix B) with a 7-point Likert format in order to maximize the sensitivity of the scale. Items were created to represent all major components of boredom.

Study 1a: Analysis of Initial Item Pool

The purpose of Study 1a was to examine item content and descriptive statistics in order to eliminate items from the initial item pool. Thus, the 76 items were administered to 1028 undergraduate participants from two large universities in Ontario, Canada. Item statistics examined included means, standard deviations, skewness, kurtosis, range of responses, and item-total correlations. Items were also reviewed for conceptual redundancy.

Results

Data from 16 participants were eliminated due to extreme responding (e.g., choosing only 1s or 7s), resulting in a final sample size of 1012. Participants in the final sample were 72% female (n = 731) with a mean age of 19.6 (SD = 3.1, range 16 to 46). Information on participants' ethnic background was available for n = 705 (70%): 50% identified as White/Caucasian, 13% as South Asian, 11% Chinese, 6% Arab/West Asian, 6% Black, 4% Bi-racial, 3% Latin-Canadian, 2% West Indian, 2% Filipino, 2% Korean, 2% South East Asian, 1% Aboriginal/First Nations, 1% Japanese, and 1% 'Other'.

In total, 32 items were eliminated due to redundancy of content or poor item statistics, such as extreme skewness (i.e., skewness > .9) or poor item-total correlations (e.g., ≤ .30). This elimination resulted in 44 remaining items. The remaining items were found to

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retain content validity in that they captured the dimensions and themes that emerged from the qualitative and theoretical analyses.

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CHAPTER 5: MSBS FACTOR STRUCTURE

Study 1b: Exploratory Factor Analysis

In Study 1b, exploratory factor analysis (EFA) was used to suggest a possible factor structure for boredom and for the MSBS specifically. That is, because it has been suggested that boredom ought to be considered a multi-dimensional construct, and because the number and nature of factors have not been agreed upon, an exploratory factor analysis could suggest a potential factor structure for boredom more broadly, not just for the MSBS items. Indeed, the MSBS items were created to be comprehensive in their representation of the experience of boredom. Therefore, a factor analysis of these items was assumed to represent a parsing of the entire content domain of boredom.

Participants and Procedure

One-third of the data from Study 1a (n = 315) was randomly chosen for EFA. Because all items were measured on a 7-point scale and lacked excess skewness and kurtosis, they were considered suitable for factoring methods requiring continuous observed distributions (Finney & DiStefano, 2006). Principal axis factoring with a quartimax rotation was performed on the 44 items. The number of factors was determined by examining the scree plot, the total variance accounted for, and the root mean square error or approximation statistic (RMSEA). In addition, multiple factor models were estimated, requesting both greater and fewer factors than the number suggested by the scree plot (as recommended by Costello & Osborne, 2005, and Fabrigar, Wegener, MacCallum & Strahan, 1999). Thus, in total, four models were estimated, requesting three, four, five, and six factors.

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Results

The three-, four-, five-, and six-factor models accounted for 48.0%, 51.4%, 54.3%, and 57.1% of the variance, with RMSEA values (and 90% confidence intervals) of .072 (.069-.076), .068 (.064-.072), .058 (.053-.062), and .053 (.049-.058), respectively. Although the six-factor model accounted for the most variance and had the lowest RMSEA value, the sixth factor was uninterpretable. Thus, the five-factor model was chosen as the final solution. An item was considered salient on a given factor if it loaded at .3 or higher on that particular factor. After removing items without any salient loadings,[19] 26 items comprised a new shortened set of items (see Table 1).

The five factors were named: 1) Disengagement (DIS; 9 items); 2) Agitated Affect (AA; 6 items); 3) Dysphoric Affect (DA; 5 items); 4) Inattention (IN; 4 items); and 5) Time Perception (TP; 2 items). The summed scores of items on each factor had internal consistency reliability (i.e., coefficient alpha) estimates of .87, .86, .88, .83, and .73, respectively. The coefficient alpha for the total, 26-item scale was .94. Table 2 contains the factor correlations, which ranged from .26 to .58.

These five factors are unequivocally consistent with the components of boredom outlined in Chapter 2. Specifically, the first necessary component of boredom involves disengagement and the desired quantity and quality of 'things to do'; this component is reflected by the items loading on the Disengagement factor (e.g., "I seem to be forced to do things that have no value to me"; "I wish I was doing something more exciting"; "I

[19] One exception was the Disengagement (DIS) factor, on which two items whose loadings were above .25 were retained. Keeping these two items ensured that the items on this factor sampled all the necessary content related to 'doing', as revealed by the qualitative analysis.

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want something to happen but I am not sure what"). Important emotional components of boredom include frustrated and irritated affect, which is the focus of the items on the Agitated Affect factor (e.g., "Everything seems to be irritating me right now"; "I feel agitated"), as well as more subdued, dysthymic affect, which is the focus of the Dysphoric Affect items (e.g., "I feel down"; "I feel empty"). Clearly, these factors parallel the emotional elements of boredom (i.e., feeling irritated, anxious, sad, or empty) described in Chapter 2. Furthermore, items on the Time Perception factor (e.g., "Time is passing by slower than usual") and the Inattention factor (e.g., "It is difficult to focus my attention"; "My mind is wandering") mirror the elements of changes in one's perception of time and one's ability to pay attention, respectively.

The consistency of these results with my qualitative study and with the theoretical analysis provided in Chapter 2 suggests that this shortened set of MSBS items has retained content validity. Moreover, the results provide evidence for the multidimensionality of boredom.

Study 1c: Confirmatory Factor Analysis

In order to verify the five-factor structure found in Study 1b, a confirmatory factor analysis (CFA) was conducted on the remaining two-thirds (n = 697) of the Study 1 data set. It was predicted that a five-factor model consistent with that derived above with EFA would provide a better fit to the data than either a four-factor model (which combined the two types of affect into a single factor) or a one-factor model (representing a strictly unidimensional conception of boredom). In addition, because the five factors were intended to represent separate, yet interrelated, components of the experience of

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boredom, it was predicted that a second-order model with five first-order factors and one second-order factor, 'General Boredom', would also fit the data well. That is, based on theoretical work in Chapter 2, it was predicted that the lower-order factors would not simply be separate constructs, but meaningfully related subcomponents that combine to form a general boredom construct. Thus, a second-order model was tested.

Participants and Procedure

Twenty six participants had missing data and were excluded from the factor analysis, resulting in a final sample size of $n = 671$. Maximum likelihood estimation was used to fit each model to the data from the 26-item version of the MSBS. Fit indices chosen to evaluate model fit included the chi-square test (χ^2), Tucker-Lewis index (TLI), comparative fit index (CFI), and RMSEA statistic. For CFI and TLI, values greater than .90 were considered to represent good fit. For RMSEA, excellent fit was indicated by values of .05 or less, adequate fit by values of .08 or less, and poor fit by values of .10 or above (Hu & Bentler, 1999).

Results

The five-factor model fit the data well ($\chi^2_{(289)} = 886.07$, TLI = 0.98, CFI = 0.98, RMSEA = 0.056), and fit the data better than either the four-factor or one-factor model (Table 3). Factor loadings were all strong, ranging from .54 to .82, with an average standardized loading of .69 (Table 4). Correlations among the factors were also strong, ranging from .54 to .86 (Table 5).

Again, because the five factors were intended to represent separate yet correlated aspects of a single boredom construct rather than conceptually distinct constructs, a

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model with a single second-order factor was estimated. The fit of this model was also good ($\chi^2_{(294)} = 900.48$, TLI = .98, CFI = .98, RMSEA = .055). Loadings relating the five first-order factors to the items were virtually identical to the previous five-factor model, again ranging from .54 to .82 with an average standardized loading of .70 (Table 4). The loadings relating the single, second-order factor to the five first-order factors are of particular interest. Specifically, the DIS factor had the strongest relationship with the second-order factor (.97), and the loadings for AA, DA, IN, and TP were also strong (.81, .88, .71, and .70, respectively). Overall, these results indicate that *the total score of the MSBS is a meaningful measure of a general boredom construct.* The first-order factors can be thought of as specific constructs that combine to form a single, general construct of boredom, rather than conceptually distinct constructs that are correlated with one another. Furthermore, the fact that the DIS factor had the strongest relationship with the second-order factor is consistent with the conceptualization of boredom described earlier.[20] Thus, although the first-order model and the second-order model both had very good fit to the data, the second-order model was theoretically and statistically preferred, and thus chosen as the final structural model of the MSBS.

Study 2: Bolstering MSBS Content

The purposes of Study 2 were to bolster the content of the MSBS by adding further items to factors that were not well-represented by existing items and to cross-validate the

[20] The relative strength of the second-order loadings, especially the fact that the DIS subfactor had the highest loading on the General Boredom factor, reflects the process of choosing which items to retain on the five factors. In particular, the greatest number of items were deliberately retained on the DIS factor, as these items describe the core or necessary features of boredom (i.e., related to 'doing'). Thus, given that more items were purposely retained on this factor and that this factor represents the core elements of boredom, it is not surprising that it had the strongest relationship with the second-order factor.

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revised scale with a different sample. To this end, five items were added: Four items were intended to increase the number of items on DIS and TP, whereas the fifth item ('I feel down') was intended to replace the item 'I feel depressed', in order to move away from an association with clinical depression. With the addition of the five new items, the MSBS contained 31 items.

Participants and Procedure

The 31-item MSBS was administered to a new sample of participants ($N = 209$). Information on gender and age was available for 193 (92%) participants. Specifically, 76% ($n = 147$) were female and the mean age was 19.7 ($SD = 3.1$, range 17 to 44). Information on ethnic background was available for 156 (75%) participants: 51% identified as White/Caucasian, 14% as South Asian, 11% Chinese, 7% Black, 5% Arab/West Asian, 4% Latin-Canadian, 3% Filipino, 3% Korean, 1% South East Asian, and 1% Japanese. Item statistics were computed (e.g., mean, standard deviation, range, item-total correlations), and coefficient alpha of each subscale was examined

Results

The 26 original items were examined first. The item 'I feel tense' had a particularly low item-total correlation ($r = .34$) was the only item whose deletion would slightly increase the full-scale coefficient alpha (.94 to .95). For these reasons, it was eliminated.

The five new items had moderate to strong item-total correlations (range $r = .46$ to .67). Furthermore, the deletion of any of these new items decreased the full-scale coefficient alpha. Thus, all the new items were retained and the original 'I feel depressed' item was eliminated, being replaced with 'I feel down'.

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In sum, two items ('I feel tense' and 'I feel depressed') were deleted from the 31-item version, resulting in a 29-item final version of the MSBS (Appendix C). Coefficient alphas for the final, 29-item version were .88 for Disengagement, .84 for Agitated Affect, .86 for Dysphoric Affect, .80 for Inattention, .92 for Time Perception, and .95 for the full scale. This final, 29-item MSBS that was then subject to further validation, the studies for which are described in the next chapter.

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CHAPTER 6: VALIDATION OF THE FINAL MSBS

Studies 3 and 4 represent the validation of the final, 29-item MSBS. It should be noted upfront that all aspects of Study 3 constitute my original research; data for Study 4, however, were collected by colleagues also studying boredom (Radziszewski, 2007), yet I chose and conducted my own analyses relevant to the validation of the MSBS.

Study 3

The purpose of Study 3 was to assess a) the dimensionality, b) measurement invariance, and c) convergent and criterion validity of the final MSBS.

First, with respect to its dimensionality, the fit of the second-order structural model previously identified was evaluated for the final MSBS using confirmatory factor analysis. The structural model included one second-order factor, 'General Boredom', and five first-order factors: Disengagement (DIS), Agitated Affect (AA), Dysphoric Affect (DA), Inattention (IN), and Time Perception (TP) (Figure 1).

Secondly, because there has been some suggestion of gender differences in boredom, measurement invariance was examined across gender. Specifically, some studies have shown males to have higher boredom proneness scores than females (e.g., Zuckerman, Eysenck & Eysenck, 1978) while some studies have not (e.g., Watt & Vodanovich, 1992a; Vodanovich & Kass, 1990b). It is not clear whether such differences can be interpreted as true-score differences in boredom between females and males because such differences may be due to properties of the ZBS and BPS scales themselves. Thus, a second goal of Study 3 was to test for measurement invariance of MSBS scores.

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Next, in order to assess convergent and criterion validity, the MSBS was correlated with hypothetically related variables. Based on theory and past research, specific correlations were predicted between MSBS scores (both total and subscale scores) and key constructs. Specifically, MSBS total scores were predicted to be positively correlated with existing measures of trait boredom[21] and with measures of anxiety, depression, anger, inattention, neuroticism, and impulsivity. It was also predicted that MSBS total scores would be negatively correlated with purpose in life and life satisfaction. Finally, the MSBS was not expected to be related to a measure of social desirability.

Based on its proposed five-factor structure, correlations among MSBS subscale scores and related constructs were also predicted. Specifically, the Inattention subscale was expected to correlate with a measure of attention problems; the Dysphoric Affect factor was expected to correlate with measures of depression; and the Agitated Affect factor was expected to correlate with measures of anxiety and anger.

Finally, given that the MSBS was developed as a state measure of boredom, it was predicted that MSBS subscales would correlate with state measures of related constructs (e.g., state anxiety), in addition to trait measures of the same construct (e.g., trait anxiety). Thus, all forms of such measures were expected to be significantly correlated.

Participants and Procedure

The final, 29-item version of the MSBS was administered to 576 undergraduate participants from a large university in Ontario, Canada. Participants were 55% female (*n*

[21] The ZBS was included in this study because it is one of the most commonly used measures of boredom; however, a low correlation between ZBS and MSBS was anticipated, considering the low correlations typically found between BPS and ZBS.

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= 318) with a mean age of 20.0 (*SD* = 4.1, range 17 to 56). The sample was highly ethnically diverse: 41% identified as White/Caucasian, 15% as South Asian, 10% Arab/West Asian, 9% Chinese, 6% Bi-racial, 5% Black, 4% South East Asian, 3% West Indian, 3% Korean, 2% Filipino, 2% Latin-Canadian, 1% Aboriginal/First Nations, 1% Japanese, and 1% as 'Other'.

Confirmatory Factor Analysis

For the confirmatory factor analysis, the general procedure was identical to the CFA conducted in Study 1c with the exception of using the final 29-item MSBS rather than the earlier version.

Tests of Measurement Invariance

For the analysis of measurement invariance, a series of nested multiple-group CFA models were tested by gender group. The first or baseline model (Model 1) was a simultaneous analysis, wherein all parameters were free to vary across gender. In this model, the variance of the second-order factor was constrained to 1.00, and all other parameters were freely estimated. Next, two models were tested to examine partial invariance of the MSBS (i.e., whether first- and second- order factor loadings are invariant across gender). In Model 2, all first-order loadings were constrained to be equal across gender. In Model 3, second-order loadings were tested for invariance over and above the constrained first-order loadings. Finally, provided that invariance was found in the first three models, Model 4 was a test of strict invariance, testing the equivalence of error variances of the observed variables (over and above the constraints specified in previous models).

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For all models, rather than comparing the associated chi-square statistic for each model against that of the baseline model, the CFI and RMSEA fit indexes were examined and compared for each model. That is, although nested model comparisons using multiple-group CFA typically rely on the χ^2 difference test, recent research (e.g., Cheung & Rensvold, 2002; MacCallum, Browne, & Cai, 2006) has suggested that alternative fit indices should be examined because the χ^2 statistic is overly sensitive to sample size and ignores model parsimony. Thus, for the present analyses, two models were deemed to have equivalent fit when the difference in CFI (ΔCFI) was .01 or less (Cheung & Rensvold, 2002) and when the difference in RMSEA (ΔRMSEA) was not significantly greater than .01 (MacCallum et al., 2006).[22]

Convergent and Criterion Validity

For the analyses of convergent and criterion validity, all participants completed the MSBS as well as two measures of trait boredom, BPS and ZBS. However, to reduce the burden on participants, one subsample (n = 243) completed one set of criterion measures (STPI, CESD, ASRS, and BIDR; see below), and a second subsample (n = 333) completed a second set of criterion measures (BFI-N, BIS-11, PIL, and SWLS; see below).

Boredom measures. All participants completed the final, 29-item version of the MSBS. In the present study, coefficient alpha was .87 for Disengagement, .85 for Agitated Affect, .86 for Dysphoric Affect, .80 for Inattention, .88 for Time Perception,

[22] Note that ΔCFI is a descriptive statistic, while ΔRMSEA relies on an inferential procedure (described by MacCallum et al.) that can be used to formally test whether the value is significantly greater than another value.

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and .94 for the full scale. In addition, trait boredom was measured by the Boredom Proneness Scale (BPS; Farmer & Sundberg, 1986) and the Boredom Susceptibility Scale (ZBS; Zuckerman, 1979; Zuckerman, Eysenck, & Eysenck, 1978), the psychometric properties of which were described in Chapter 3. In the present study, coefficient alpha was .80 for BPS and .51 for ZBS.

State-Trait Personality Inventory (STPI). The STPI (Spielberger, 1995; Spielberger & Reheiser, 2004) measures both trait and state depression (T-Depression, S-Depression), curiosity (T-Curiosity, S-Curiosity), anxiety (T-Anxiety, S-Anxiety), and anger (T-Anger, S-Anger). It consists of 80 items with 10 items per subscale. In the present study, the state and trait measures of depression, anxiety, and anger were included. In adult samples, coefficient alpha for these subscales has been reported to range from .91 to .93 for T-Depression, 87 to .93 for S-Depression, .88 to .92 for T-Anxiety, .91 to .94 for S-Anxiety, .88 to .92 for T-Anger, and .93 to .94 for S-Anger (Spielberger, 1995). In the present study, subscales had similar coefficient alphas: .90 for T-Depression, .86 for S-Depression, .66 for T-Anxiety, .85 for S-Anxiety, .81 for T-Anger, and .91 for S-Anger.

Center for Epidemiologic Studies Depression Scale (CESD). The CESD (Radloff, 1977) is a 20-item scale measuring current level of depressive symptomatology. According to Radloff, the internal consistency is .85 and the test re-test reliability ranges from .45 to .70. In the present study, coefficient alpha was .90.

Adult ADHD Self-Rating Scale (ASRS). The ASRS (Kessler, Adler, Ames, Demler, Faraone, et al., 2005) contains 18 items assessing recent symptoms of adult Attention Deficit Hyperactivity Disorder (ADHD). Nine of the items assess 'Inattention' and nine

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assess 'Impulsivity'. Only the Inattention subscale was used in the present study, for which coefficient alpha was .76.

Brief Inventory of Desirable Responding (BIDR). The BIDR (Paulhus, 1991) was designed to measure "self-deceptive positivity (the tendency to give self-reports that are honest but positively biased) and impression management (deliberate self-presentation to an audience)" (p. 37). It contains 20 items assessing self-deceptive enhancement (SDE) and 20 items assessing impression management (IM). Total scores are computed only from items with extreme responses (i.e., 6 or 7). Coefficient alpha has been reported to range from .68 to .80 for SDE and .75 to .86 for IM (Paulhus, 1991). In the present study, coefficient alpha was .73 for SDE and .81 for IM.

Big Five Inventory – Neuroticism Subscale (BFI-N). The Neuroticism subscale of the Big Five Inventory (Benet-Martinez & John, 1998) contains eight items assessing the personality trait of neuroticism, which "contrasts emotional stability with a broad range of negative affects, including anxiety, sadness, irritability, and nervous tension" (p. 730). Coefficient alpha of this subscale has been reported to range from .80 to .84 (Benet-Martinez & John, 1998) and was .83 in the present study.

Barratt Impulsivity Scale (BIS-11). The BIS-11 (Patton, Stanford, & Barratt, 1995) is a 30-item measure of "the general personality trait of impulsiveness" (p. 773). Coefficient alpha of the BIS-11 was reported to range from .79 to .84 (Patton et al., 1995) and was .81 in the present study.

Purpose in Life Test (PIL). The PIL (Crumbaugh, 1968; Crumbaugh & Maholick, 1964) contains 28 items measuring "the degree to which the individual [experiences]

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'purpose in life'"(Crumbaugh & Maholick, 1964, p. 201). The internal consistency of the PIL has been reported to range from .90 to .92 (Crumbaugh & Maholick, 1964; Reker, 1977). In the present study, coefficient alpha was .84.

Satisfaction with Life Scale (SWLS). The SWLS (Diener, Emmons, Larsen, & Griffin, 1985) is a 5-item scale measuring global life satisfaction. Coefficient alpha was reported to be .87 with a two-month test-retest reliability of .82 (Diener et al., 1985). In the present study, coefficient alpha was .85.

Results

CFA of Second-Order Model

Using the final, 29-item MSBS, the second-order model (Figure 1) had a good fit to the data ($\chi^2_{(372)} = 1329.77$, TLI = 0.97, CFI = 0.97, RMSEA = 0.067). First-order factor loadings were consistently strong, ranging from .48 to .88 (see Table 6), as were the second-order factor loadings (.95 for DIS, .86 for AA, .85 for DA, .85 for IN, and .58 for TP). These results confirm the finding from Study 1 that MSBS items measure five separate subfactors which combine to form a single, general construct of boredom.

Measurement Invariance

Model 1, the baseline model, had good overall fit for both females and males, $\chi^2_{(744)} = 1731.00$, CFI = .97, RMSEA = .068. Model 2, the first test of partial invariance (i.e., constrained first-order loadings), also fit the data well ($\chi^2_{(768)} = 1765.78$, CFI = .97, RMSEA = .067), and its fit was not significantly different from that of Model 1 (ΔCFI = .00, ΔRMSEA = -.01, $p = 1.0$). These findings indicate that first-order factor loadings were invariant across females and males.

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Model 3, a second test of partial invariance (this time constraining both first- and second-order factor loadings across gender), also fit the data well ($\chi^2_{(773)} = 1779.40$, CFI = .97, RMSEA = .067). Importantly, its fit was not significantly different from that of Model 2 (ΔCFI = .00, ΔRMSEA = .00, $p = 1.0$) indicating that second-order factor loadings were also invariant across gender.

Finally, given that partial invariance was established for Models 2 and 3, Model 4 assessed strict invariance (i.e., constrained error variances). Overall, Model 4 fit the data well ($\chi^2_{(801)} = 1820.28$, CFI = .97, RMSEA = .067), and, again, the fit was not significantly different from that of Model 3 (ΔCFI = .00, ΔRMSEA = .00, $p = 1.0$).

Overall, these results suggest that the measurement of boredom and its five first-order factors using the MSBS is equivalent across females and males. In other words, the relationships among the observed item responses and the first-order factors are not different for females and males. Likewise, there is no difference in the relationships between the first-order factors and the General Boredom factor across gender.

Convergent and Criterion Validity

On the convergent and criterion measures, several outliers (i.e., greater than three standard deviations above or below the mean) were detected: one each on BPS, CESD, ASRS, SDE, BIS, two on IM and PIL, and five on Ang-S. These total scores were deleted on these individual variables (i.e., leading to some missing values). Tables 7 and 8 contain the correlations among MSBS scores and the validation measures.

As predicted, MSBS total score and subscale scores were moderately to strongly correlated with one existing measure of trait boredom, the BPS (*r*s range from .44 to .62

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in subsample one and .39 to .63 in subsample two). In contrast, MSBS scores were not significantly correlated with the ZBS (*r*s range from .05 to .09 in subsample one and .03 to .20 in subsample two). However, given the extremely low coefficient alpha of ZBS (i.e., .51) in the present study and given that ZBS was not significantly correlated with any of the mood-related measures (e.g., state and trait depression or anxiety), this finding is not surprising.

As predicted, MSBS total scores were moderately to strongly correlated with measures of depression, anxiety, anger, inattention, neuroticism, and impulsivity (*r*s range from .30 to .68). MSBS total scores were also significantly negatively correlated with purpose in life (r = -.52) and life satisfaction (r = -.45). Neither MSBS total scores nor subscale scores were positively correlated with the measure of social desirability. In fact, there were significant *negative* correlations between the MSBS scores and the Self-Deceptive Enhancement (SDE) subscale (*r*s range from -.20 to -.29). More importantly, there were no significant positive correlations between MSBS scores and the Impression Management (IM) subscale (*r*s range from -.03 to -.15).

On the state-trait measures, as predicted, the MSBS total score was significantly correlated with the state measures and trait measures of anxiety (r = .59 and .56, respectively), anger (r = .46 and .30), and depression (r = .68 and .56). For MSBS subscales, Agitated Affect was strongly correlated with state and trait anxiety (r = .65 and .45) and state and trait anger (r = .58 and .24). Similarly, Dysphoric Affect was correlated .74 with state depression and .62 with trait depression. Finally, the ASRS Inattention

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subscale was strongly and significantly correlated with the MSBS Inattention subscale (r = .45).

Taken together, these results provide support for the convergent and criterion validity of MSBS total and subscale scores.

Study 4

The purpose of Study 4 was to validate the state sensitivity of the MSBS through the use of an experimental manipulation of boredom. Specifically, the MSBS was compared to existing measures of boredom for its ability to distinguish between individuals who had been induced into a state of boredom and those who had not.[23]

Participants and Procedure

Seventy-five introductory psychology students participated in Study 4 in exchange for course credit. The sample was 84% female (n = 63), with a mean age of 21.2 (SD = 6.9, range 17 to 53). With the exception of two participants who did not respond, participants reported identification with the following ethnic groups: 41% percent White/Caucasian, 15% South Asian, 13% Black, 8% Chinese, 7% Arab/West Asian, 4% West Indian, 4% 'Other', 3% Korean, 1% Aboriginal/First Nations, and 1% Latin-Canadian.

Each participant was seen individually for approximately 60 to 90 minutes. Participants were randomly assigned to one of three experimental conditions (25 to each): 1) over-stimulating boredom (OSB); 2) under-stimulating boredom (USB); or 3) a non-boredom (NB) control condition. All participants were told that they would be watching a video clip. The manipulation involved varying this video clip. Specifically, participants in

[23] Again, as noted earlier, these data were collected by my colleagues, though I performed my own analyses relevant to the validation of the MSBS.

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the OSB condition watched a 25-minute clip about advanced computer graphics and modelling techniques (Rose & McDermott, 1998). Participants in the USB condition watched a 25-minute clip on learning English as a second language (ESL; Video Tutor, 1995).

The computer graphics video in the OSB condition was perceived as highly over-stimulating with respect to both its content difficulty and visual stimulation. With an abundance of incomprehensible, 'noisy' information, participants were expected to disengage and become bored (see Klapp, 1986). This approach is similar to Fisher's (1993) concept of a 'qualitative overload' during boredom. The ESL clip shown to participants in the USB condition was seen as monotonous, well below participants' skill level with the English language, and therefore extremely under-stimulating. Lacking necessary stimulation, participants were expected to become bored. This approach embodies Fisher's concept of qualitative underload. Finally, participants in the NB condition watched a 25-minute clip of the action movie *Speed* (de Bont, 1994). The clip was a segment from the middle of the film, chosen for its high-action, engaging content.

To maximize the effects of the manipulation, participants' perceptions of volition and experience of time were also manipulated. Specifically, participants in both boredom conditions (OSB and USB) were led to believe that they had no choice in which video they would watch. They were told, "We have two videos that we were asking people to choose from for this task. However, because we are experiencing technical difficulties with one of the videos, you will not have a choice in which video you watch." The perception of having no choice was thought to maximize the desired effect of the

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manipulation by making participants feel forced into a boring situation (see London & Monello, 1974). In addition, participants in the USB and OSB conditions were also told that the video would be stopped after exactly 20 minutes. However, in both conditions, the videos were stopped after exactly 25 minutes, creating the feeling of a slow passage of time (see Troutwine & O'Neal, 1981).

Conversely, participants in the NB condition were falsely led to believe that they *did* have choice in which video they would watch. Each participant was given descriptions of two possible video clips; however, both descriptions were actually describing the same film from a different perspective. Thus, regardless of which option was chosen, all participants in the NB condition watched the same clip. The illusion of choice was used to make participants feel more in control of their participation and thus more engaged in what they were doing (see London & Monello, 1974). Finally, participants in the NB condition were told that in exactly 30 minutes the video would be stopped; however, the video was stopped after 25 minutes, creating the experience that time had passed quickly.

Measures

Immediately following the manipulation, participants completed the BPS, ZBS, and the final 29-item MSBS. In Study 4, coefficient alpha for the MSBS was .96 for the full scale and .90, .88, .87, .83 and .93 for DIS, AA, DA, IN, and TP subscales, respectively.

Results

Manipulation Check

A manipulation check was included whereby participants were asked to list four words that describe their thoughts and feelings after watching the video. In the USB

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condition, 22 out of 25 (88%) spontaneously used the word 'bored' to describe how they felt after watching the ESL video. The remaining participants used words synonymous with 'bored', such as "repetitive, dull", "antsy, restless" or "frustrated, meaningless, irritated". In the OSB condition, 18 out of 25 (72%) spontaneously used the word 'bored' and four additional participants used related words like 'irritated', 'distracted', and 'restless.' Only three individuals used unrelated words such as 'curious', 'inquisitive', and 'content.' In total, 80% of individuals (40 out of 50) in the boredom conditions used the word 'bored' and 94% (47 out of 50) used either the word 'bored' or synonyms.

In contrast, only one person used the word bored in the NB condition. In general, participants in the control condition wrote positive words like 'excited', 'interested', 'curious' or 'attentive', and only two participants used negative terms such as 'disengaged' or 'moody/stressed.' Thus, the boredom manipulation appeared effective in producing feelings of boredom.

Dependent Measures

One-way ANOVAs were conducted for each of the three dependent measures: BPS, ZBS, and MSBS total score. For BPS, the three conditions were not significantly different, $F(2,71) = .001$, $p = .99$ (USB $M = 98.00$, $SD = 15.95$; OSB $M = 98.00$, $SD = 21.62$; NB $M = 97.79$, $SD = 16.69$). Similarly, the three conditions were not significantly different on ZBS, $F(2,71) = .314$, $p = .73$ (USB $M = 2.40$, $SD = 1.35$; OSB $M = 2.46$, $SD = 2.45$; NB $M = 2.08$, $SD = 1.44$). However, MSBS scores were a significantly different between the groups, $F(2,71) = 5.09$, $p = .01$. Furthermore, post hoc comparisons (Tukey's HSD) indicated that participants in the USB condition ($M = 116.36$, $SD = 36.51$) had

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significantly higher state boredom scores than those in the NB condition ($M = 86.17$, $SD = 27.73$), $p = .01$. Similarly, participants in the OSB condition ($M = 111.20$, $SD = 40.28$) had significantly higher state boredom scores than those in the NB condition, $p = .04$. Finally, the USB and OSB conditions were not significantly different from one another on state boredom, $p = .86$.

In sum, these results indicate that the BPS and ZBS are not sensitive to detecting changes in state boredom, whereas the MSBS can successfully detect such changes. These findings strongly support the construct validity of the MSBS.

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CHAPTER 7: GENERAL DISCUSSION

Prior to the present work, the measurement of the experience of boredom was hindered by the lack of appropriate measures of the construct. Existing measures of boredom were found to be lacking in several ways. The two most popular measures of boredom, BPS and ZBS, were designed to measure one's *proneness* to boredom rather than the actual experience of boredom itself. Less well-known scales such the Job Boredom Scale, Leisure Boredom Scale, and the Sexual Boredom Scale constrain the measurement of boredom to specific contexts. In contrast, the Multidimensional State Boredom Scale (MSBS) is the first and only full-scale measure of state boredom. That is, the MSBS was designed to measure the experience of boredom itself, and to be unrestricted by the particular context of its participants. Unlike existing measures, the MSBS was developed using an empirically-grounded conceptualization of boredom, which itself was based on an analysis of theoretical and empirical literature. Considering that there are currently no dominant or integrated conceptualizations of boredom, this type of empirical grounding is especially needed as the basis for a new measurement tool. Furthermore, given that the definition of boredom was grounded in every-day, common usage of the term, those using the MSBS to study boredom can be sure that the 'boredom' being measured corresponds with individuals' conception of the term.

While previous research clearly suggested that boredom is not a unidimensional construct, the number and kind of factors that should be included in a measure of boredom were not evident. Thus, in addition to being the first, full-scale measure of state boredom, the MSBS represents the first validated *multidimensional* measure of boredom.

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Its five-factor structure was clearly supported by EFA and CFA analyses of two independent samples, thus validating the multidimensional nature of the scale. Furthermore, all subscales were significantly related to a single, second-order factor, indicating that MSBS *total* scores can be taken to represent a meaningful 'General Boredom' construct. Finally, the 29-item final version demonstrated good internal consistency reliability for all five subscales (αs range from .80 to .88) and for the full scale (α = .94).

The fact that the MSBS demonstrated measurement invariance for males and females is of both practical and theoretical importance. Specifically, past research has found gender differences in boredom. Males tend to score higher than females on the ZBS (e.g., Zuckerman, Eysenck & Eysenck, 1978), but there have been mixed findings regarding the BPS (e.g., Watt & Vodanovich, 1992a; Vodanovich & Kass, 1990b). Although this relationship has previously been interpreted as a true-score difference in boredom between females and males, it may be that these differences were due to properties of the ZBS and BPS scales themselves. Because the MSBS has shown measurement invariance across gender, future research resulting in gender differences on the MSBS can be interpreted in terms of actual gender differences in boredom rather than differences in measurement.

Taken together, the results from Studies 3 and 4 suggest that the MSBS is a valid measure of boredom. With respect to convergent validity, all of the MSBS subscale and total scores were moderately to strongly correlated with the Boredom Proneness Scale. Although the MSBS did not correlate with the ZBS, this finding was not surprising

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because the coefficient alpha for the ZBS was extremely low (.51) and because ZBS was only weakly correlated with the measures of negative affect (i.e., depression, anxiety, anger). Similarly, Farmer and Sundberg (1986) also found that the ZBS was not significantly correlated with measures of negative affect such as hopelessness, depression, loneliness, and life satisfaction. Importantly, the majority of participants in the qualitative studies indicated that boredom was associated with some form of negative affect (i.e., sadness, anxiety, or irritability). Thus, it appears that the type of boredom measured by the ZBS is separate from negative affect.

With respect to criterion validity, the expected pattern of intercorrelations was observed among MSBS scores and depression, anxiety, anger, neuroticism, impulsivity, purpose in life, and life satisfaction scores. These results indicate that an individual experiencing state boredom is also likely to experience negative affects such as sadness, anxiety, or anger, which is consistent both with the qualitative studies discussed earlier and with quantitative studies linking these constructs (e.g., Farmer & Sundberg, 1986; Rupp & Vodanovich, 1997; Sommers & Vodanovich, 2000). The MSBS was also significantly related to emotional instability (i.e., neuroticism) and impulsivity, indicating that those who are bored may have fluctuations in their mood and may behave in a careless manner. In addition, bored individuals are more likely to feel as though their lives lack purpose or meaning and to feel dissatisfied with their lives. These findings are again consistent with the qualitative studies and with existing research (e.g., Drob & Bernard, 1987; Farmer & Sundberg, 1986; Weinstein, Xie, & Cleanthos, 1995).

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The state-sensitivity of the MSBS was also established. Specifically, Study 3 demonstrated that MSBS scores were strongly correlated with state measures of negative affect. In addition, Study 4 demonstrated that, unlike existing measures of boredom (BPS and ZBS), the MSBS is sensitive to changes in state boredom, given that participants in the boredom conditions scored significantly higher on MSBS than those in the control condition.

Finally, with respect to social desirability, there were no significant positive correlations between MSBS scores and the Impression Management (IM) subscale of the BIDR. Given that the IM subscale measures the tendency to present oneself in a positive light intentionally (i.e., similar to traditional 'lie scales'), these findings indicate that scores on the MSBS are unlikely to be biased by individuals attempting to portray themselves in an overly favourable manner. A second type of social desirability, measured by the Self-Deceptive Enhancement (SDE) subscale, is concerned with *unintentionally* providing positively-biased self-reports. Interestingly, all of the MSBS scores were significantly *negatively* correlated with this subscale. According to Paulhus, negative correlations with SDE indicate that these items are "undesirable in connotation" (personal communication, October 1, 2007). Considering that boredom is an undesirable, negative experience, this finding is not surprising, as it would be undesirable to endorse items describing the experience of boredom. In addition, the significant negative correlation between MSBS and SDE is consistent with Paulhus' finding that high self-deceptive enhancement is linked with the 'adjusted personality'. More specifically, his research has shown that individuals high on self-deceptive enhancement exhibit higher

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self-esteem, lower neuroticism, lower depression, lower empathic distress, and lower anxiety (Paulhus, 1991; Paulhus & Reid, 1991). Thus, given the current finding that MSBS was positively correlated with depression, anxiety, and neuroticism, it is not surprising that the MSBS would correlate negatively with self-deceptive enhancement. Most important, however, is the fact that MSBS scores were uncorrelated with the measure of impression management.

Theoretical Contributions

The definition of boredom used in the construction of the MSBS is itself an important conceptual contribution to the field. This comprehensive, well-grounded definition can aid in advancing research on boredom. Furthermore, the review and conceptual analysis of existing theoretical and empirical literature has provided a clear, conceptual basis for understanding boredom more broadly.

Also of note is that the concept of unfulfilled disengagement in boredom is consistent with long-standing as well as more recent theoretical frameworks that emphasize engagement as an important type of motivation or drive, such as White's (1959) theory of *effectance motivation* and Nakamura and Csikszentmihalyi's (2003) concept of *vital engagement.*

White (1959) created his theory of effectance motivation as a solution to the growing dissatisfaction with drive theories of motivation, especially in terms of their inability to account for exploratory behaviour and the need for novelty and mastery. Based on a synthesis of trends in animal psychology, psychoanalytic ego psychology, developmental psychology, and personality psychology, White constructed the concept of *competence*,

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which he defines as "an organism's capacity to interact effectively with its environment" (p. 297). Thus, competence emphasizes humans' desire for satisfying interactions with their environment. He argues that competence is pursued because of *effectance motivation*, which is not a deficit motive but a process-oriented motive that "aims for *the feeling of efficacy*, not for the vitally important learnings that come as its consequence" (p. 323, emphasis added). Thus, activities undertaken in the service of competence are viewed as motivated in their own right. Effectance motivation involves intentional, persistent action that is initiated "for the sole reward of engaging in it" (p. 323). Indeed, the concept of effectance motivation is highly related to the concept of disengagement in boredom (i.e., the unfulfilled desire to be engaged in satisfying activity and to have some interest or connection with the environment). Additionally, the finding that participants described disengagement during the course of activity that they found too repetitive, too simple, or lacking in challenge, is consistent with White's argument for competence and the motive to feel a sense of efficacy and mastery within a given environment. Certainly, the importance of such a motivational concept is highlighted by the fact that a lack of engagement in activity would simply be experienced as relaxation if an individual did not have some kind of underlying motivation or desire to be engaged in activity.

Nakamura and Csikszentmihalyi's (2003) *vital engagement* is also consistent with the concept of disengagement from satisfying activity. Within the context of the study of optimal development, they construe vital engagement as a type of relationship to the world involving "a strong felt connection" or a "completeness of involvement or participation" with an object or activity in work, love, or play (p. 87). The engagement is

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considered 'vital' in the sense that the relationship is felt to be meaningful or important, and vital in the sense that an individual experiences in-the-moment vitality during a successful interaction. In other words, the sense of connection and involvement leads to enjoyment and absorption, otherwise known as *flow* (Csikszentmihalyi, 1975/2000, 1990/1997). Thus, a vitally engaged relationship "is characterized *both* by experiences of flow (enjoyed absorption) *and* by meaning (subjective significance)" (p. 87, emphasis added). Finally, another important feature of vital engagement is that the relationship endures over a long period time. Such individuals do not simply have separate flow experiences but participate in "a flow activity with which they have become heavily identified and to which they have sustained a long commitment" (p. 89). In other words, given that flow can occur "in virtually *any* interaction, even the most trivial" (p. 90, emphasis added), it is imperative that the flow activity be valued by the individual, provide a sense of meaning, or serve a larger purpose.

Thus, vital engagement appears to correspond with the concept of disengagement outlined earlier. A bored individual desires to feel connected and be engaged in activities that are enjoyable or exciting (similar to the in-the-moment vitality element), or ones that provide a sense of challenge, meaning, or purpose (similar to the subjective significance element).

Utility of the MSBS

As a validated multidimensional measure of state boredom, the MSBS will allow researchers to investigate and better understand this difficult yet common experience. Until now, the boredom literature has been limited by the lack of a clear definition of

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boredom and the lack of a well-validated measure. The present work has further established the pain and difficulty of boredom, both through the delineation of boredom's components and through the significant relationships between the MSBS and other negative constructs. As such, the need to further investigate boredom is even more apparent.

The MSBS also has applications in specific contexts. Several researchers have discovered that boredom is relevant to their area of study, including those examining traumatic head-injury (e.g., Seel & Kreutzer, 2003), binge eating (e.g., Stickney & Miltenberger, 1999), substance use (e.g., Laudet, Magura, Vogel, & Knight, 2004; Lee, Neighbors, & Woods, 2007), and gambling (e.g., Grant, Won Kim, & Brown, 2001). Unfortunately, these researchers did not have a choice in whether or not they would employ a validated measure of boredom. In the future, researchers investigating such topics could make use of the MSBS to measure state boredom explicitly.

In the absence of a validated measure of state boredom, some researchers have created provisional measures of the construct. For example, in a study examining temporal perception, Danckert and Allman (2005) gave a 'post-study questionnaire' intended to measure state boredom. Another group of researchers (i.e., Cherrier, Small, Komo, & La Rue, 1997) examined how participants' mood state (including boredom) influenced positron emission tomography. However, they assessed boredom with a visual analogue scale (i.e., using the mood pair "bored-interested") rather than a validated state measure of boredom. Again, the MSBS could be useful in such research as it eliminates the need for such provisional measures.

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Boredom as a Methodological Issue

Some researchers have pointed out that participants may experience state boredom while undergoing research procedures, which is considered a potential methodological confound. For example, the study by Cherrier et al. (1997) demonstrated that state boredom was correlated with various asymmetries in the brain; consequently, the authors concluded that individuals undergoing brain imaging procedures may become bored, which may in turn influence the results of a given study. In another example, D'Angiulli and Smith LeBeau (2002) noted that experimental procedures may unintentionally lead to feelings of boredom in participants and that such boredom could influence the data being collected. The authors' remark: "Would you trust the results of a study in which your participant was bored?" (p. 168). Moreover, studies have linked boredom with attention problems (e.g., Cheyne, Carriere, & Smilek, 2006; Diamond, 2005; Kass, Wallace, & Vodanovich, 2003), which further suggests that there are serious implications for the quality of data collected from participants experiencing boredom. The implication of this issue is that the MSBS could have application as a control measure.

Boredom as an Ethical Issue

Perhaps it is also an ethical issue if experimental research protocols induce state boredom in participants? D'Angiulli and Smith LeBeau (2002) have argued as such. As a solution, they suggest making changes to informed consent or debriefing protocols. In order to employ such debriefing procedures, perhaps the MSBS could aid in identifying participants particularly affected by 'boring' research protocols.

Future Research

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Future research could examine the validity of the MSBS in various applied settings. That is, because boredom has been cited as a trigger or precursor to various addictive behaviours, for example, drug use (e.g., Levy, O'Grady, Wish, & Arria, 2005), gambling (e.g., Carroll & Huxley, 1994), and binge eating (e.g., Stickney & Miltenberger, 1999), researchers could explore the utility of the MSBS for research on populations with similar problems.

Finally, the MSBS may also have application in more general populations for which boredom has been cited as a challenging issue, including adolescents (e.g., Jarvis & Seifert, 2002), juvenile delinquents (e.g., Newberry & Duncan, 2001), college students (e.g., Vodanovich & Rupp, 1999; Watt & Vodanovich, 1999), inmates (e.g., Farnworth, Nikitin, & Fossey, 2004; Yocum, Anderson, DaVigo, & Lee, 2006), commuters (e.g., Gatersleben & Uzzell, 2007), and adults in the workforce (e.g., Kass, Vodanovich, & Callender, 2001).

Limitations

There are a few limitations of the MSBS that should be noted. First, some researchers may find 29 items somewhat long for their research purposes. The necessity of a longer scale was dictated by the multidimensionality of the construct; however, future research could investigate the possibility of a valid short form of the MSBS. Another limitation is that the conceptualization of boredom, development of the scale, and the ensuing scale validation studies were all conducted with relatively educated, young adult samples. Thus, researchers should exercise caution when employing the MSBS in populations with

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very different demographic characteristics. It is important that future research examine the validity of the MSBS in other adult samples (e.g., community or elderly samples).

Conclusions

Although boredom historically has not received sustained attention in the psychological literature compared to other types of negative experiences, there is a growing awareness of and interest in studying boredom. In light of this growing interest, the conceptual clarity achieved, the new definition of boredom, and the development of the MSBS all represent valuable contributions to this area of study. Not only is the definition and conceptualization of boredom comprehensive and well-grounded in empirical observation, the subsequent development of a new measurement tool improves upon the theoretical and psychometric limitations of existing measures. Thus, as a well-validated, multidimensional measure of state boredom, I hope that the MSBS will have many fruitful applications in future psychological research.

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Table 1

MSBS 44-item Exploratory Factor Analysis, Retained Items and Loadings (Study 1b)

	Factor				
Item text	DIS	AA	DA	IN	TP
I am wasting time that would be better spent on something else.	**.65**	.07	-.05	.09	.09
I feel like I'm sitting around waiting for something to happen.	**.51**	.07	.09	.20	.09
I am stuck in a situation that I feel is irrelevant.	**.46**	.25	.09	.05	.15
I seem to be forced to do things that have no value to me.	**.43**	.09	.06	.17	.12
Everything seems repetitive and routine to me.	**.43**	.14	.01	-.13	.15
I want something to happen but I'm not sure what.	**.39**	.00	.20	.10	.01
I wish I was doing something more exciting.	**.36**	-.02	.20	.14	.05
I am indecisive or unsure of what to do next.[a]	**.29**	.08	.04	.35	.10
I want to do something fun, but nothing appeals to me.[a]	**.27**	.12	.15	.10	.37
Everything seems to be irritating me right now.	.15	**.71**	.04	-.06	.10
I feel agitated.	.14	**.68**	-.07	.05	.05
I am more moody than usual.	-.05	**.60**	.19	.09	-.01
I feel tense.	-.04	**.58**	.10	.14	-.20
I am annoyed with the people around me.	-.18	**.55**	.18	.05	.28
I am impatient right now.	.23	**.52**	-.09	.23	-.08
I am lonely.	.01	-.06	**.78**	.07	.00
I feel empty.	.09	-.07	**.71**	.14	.10
I feel cut-off from the rest of the world.	.03	.06	**.65**	.03	.05
I feel depressed.	-.04	.23	**.63**	.04	.06
It seems like there's no one around for me to talk to.	.04	.16	**.54**	-.13	.14
It is difficult to focus my attention.	-.08	.03	.00	**.84**	.04
I am easily distracted.	.01	-.03	-.09	**.72**	-.04
My mind is wandering.	.08	.07	.12	**.64**	.02
My attention span is shorter than usual.	.08	.02	.05	**.56**	.12

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Table 1 continued.

Time is moving very slowly.	.17	-.16	.12	.17	**.41**
Time is dragging on.	.12	.00	.22	.16	**.35**

Note. DIS = Disengagement; AA = Agitated Affect; DA = Dysphoric Affect; IN = Inattention; TP = Time Perception.
[a]Despite higher loadings on other factors, item was retained on DIS for its representative content with respect to 'doing'.

Table 2

MSBS Exploratory Factor Analysis: Factor Correlations (Study 1b)

Factor	1	2	3	4	5
1. DIS	—	.44	.52	.45	.32
2. AA		—	.58	.46	.27
3. DA			—	.46	.39
4. IN				—	.26
5. TP					—

Note. DIS = Disengagement; AA = Agitated Affect; DA = Dysphoric Affect; IN = Inattention; TP = Time Perception.

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Table 3

Fit Statistics for 26-item MSBS Confirmatory Factor Analysis (Study 1c, N = 671)

	Model			
	5-factor	4-factor[a]	1-factor	Second-order[b]
χ^2	886.07	1576.17	2519.19	900.48
Df	289	293	299	294
TLI	.98	.97	.94	.98
CFI	.98	.97	.95	.98
RMSEA	.06	.08	.11	.06
RMSEA 90%CI	.05-.06	.08-.09	.10-.11	.05-.06

Note. TLI = Tucker Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; RMSEA 90%CI = Root Mean Square Error of Approximation 90% Confidence Interval. [a]4 factors = Disengagement, Negative Affect (Agitated Affect and Dysphoric Affect items combined), Inattention, and Time Perception. [b]Second-order factor = General Boredom; First-order factors = Disengagement, Agitated Affect, Dysphoric Affect, Inattention, Time Perception.

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Table 4

Factor Loadings for 26-item MSBS CFA (Study 1c, N = 671)

Item text	Loadings	
	First-Order Model	Second-Order Model
Disengagement (DIS)	—	**.97**
I wish I was doing something more exciting.	.57	.57
I seem to be forced to do things that have no value to me.	.58	.58
I feel like I'm sitting around waiting for something to happen.	.72	.72
I want something to happen but I'm not sure what.	.61	.61
I am indecisive or unsure of what to do next.	.63	.63
I am wasting time that would be better spent on something else.	.61	.61
I want to do something fun, but nothing appeals to me.	.71	.71
I am stuck in a situation that I feel is irrelevant.	.73	.73
Everything seems repetitive and routine to me.	.58	.58
Agitated Affect (AA)	—	**.81**
I feel tense.	.55	.54
I am impatient right now.	.54	.54
Everything seems to be irritating me right now.	.82	.82
I am more moody than usual.	.68	.68
I am annoyed with the people around me.	.70	.70
I feel agitated.	.78	.77
Dysphoric Affect (DA)	—	**.88**
I feel empty.	.81	.81
I am lonely.	.77	.77
I feel cut-off from the rest of the world.	.75	.75
It seems like there's no one around for me to talk to.	.75	.75
I feel depressed.	.81	.80
Inattention (IN)	—	**.71**
My attention span is shorter than usual.	.71	.71
I am easily distracted.	.69	.70
My mind is wandering.	.70	.70
It is difficult to focus my attention.	.82	.82
Time Perception (TP)	—	**.70**
Time is dragging on.	.80	.80
Time is moving very slowly.	.68	.68

Note. Bolded values represent first-order factor loadings on second-order 'General Boredom' factor.

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Table 5

Factor Correlations for 26-item MSBS CFA, First Order Model (Study 1c, N = 671)

Factor	1	2	3	4	5
1. DIS	—	.77	.86	.70	.68
2. AA		—	.73	.61	.54
3. DA			—	.57	.64
4. IN				—	.54
5. TP					—

Note. DIS = Disengagement; AA = Agitated Affect; DA = Dysphoric Affect; IN = Inattention; TP = Time Perception.

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Table 6

Factor Loadings for 29-item MSBS CFA, Second-Order Model (Study 3, N = 576)

Item text	Loading
Disengagement (DIS)	**.95**
I am stuck in a situation that I feel is irrelevant.	.54
Everything seems repetitive and routine to me.	.55
I seem to be forced to do things that have no value to me.	.61
I feel bored.	.67
I am indecisive or unsure of what to do next.	.71
I want to do something fun, but nothing appeals to me.	.65
I wish I was doing something more exciting.	.66
I am wasting time that would be better spent on something else.	.48
I want something to happen but I'm not sure what.	.71
I feel like I'm sitting around waiting for something to happen.	.76
Agitated Affect (AA)	**.86**
Everything seems to be irritating me right now.	.80
I am more moody than usual.	.73
I feel agitated.	.83
I am impatient right now.	.61
I am annoyed with the people around me.	.67
Dysphoric Affect (DA)	**.85**
I am lonely.	.74
I feel down.	.77
I feel empty.	.80
I feel cut-off from the rest of the world.	.74
It seems like there's no one around for me to talk to.	.66
Inattention (IN)	**.85**
I am easily distracted.	.63
It is difficult to focus my attention.	.78
My attention span is shorter than usual.	.76
My mind is wandering.	.65
Time Perception (TP)	**.58**
Time is passing by slower than usual.	.68
I wish time would go by faster.	.73
Time is dragging on.	.77
Time is moving very slowly.	.88
Right now it seems like time is passing slowly.	.80

Note. Bolded values represent first-order factor loadings on second-order 'General Boredom' factor.

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Table 7

Correlations between Final MSBS and Related Constructs, Subsample One (Study 3, N = 243)

Scale	7	8	9	10	11	12	13	14	15	16	17	18
1. MSBS-Tot	**.62**	.09	**.66**	**.68**	**.56**	**.59**	**.56**	**.46**	**.30**	**.37**	**-.29**	-.11
2. DIS	**.61**	.07	**.56**	**.59**	**.54**	**.49**	**.55**	**.36**	**.30**	**.37**	**-.28**	-.09
3. AA	**.47**	.06	**.61**	**.66**	**.48**	**.64**	**.45**	**.58**	**.24**	**.26**	**-.22**	-.07
4. DA	**.53**	.07	**.70**	**.74**	**.62**	**.59**	**.61**	**.40**	**.25**	**.27**	**-.22**	-.03
5. IN	**.44**	.12	**.51**	**.43**	**.35**	**.44**	**.43**	**.34**	**.24**	**.45**	**-.27**	**-.15**
6. TP	**.45**	.05	**.35**	**.36**	**.24**	**.26**	**.23**	**.24**	**.18**	**.17**	**-.20**	-.10
7. BPS	—	**.22**	**.53**	**.50**	**.54**	**.39**	**.51**	**.30**	**.37**	**.51**	**-.43**	**-.20**
8. ZBS		—	.05	.08	-.02	.03	.02	**.13**	**.15**	**.20**	.06	**-.16**
9. CESD			—	**.71**	**.71**	**.64**	**.67**	**.41**	**.29**	**.34**	**-.23**	-.08
10. S-Dep				—	**.73**	**.73**	**.65**	**.55**	**.23**	**.26**	**-.31**	-.06
11. T-Dep					—	**.62**	**.75**	**.34**	**.32**	**.23**	**-.35**	**-.16**
12. S-Anx						—	**.59**	**.58**	**.29**	**.25**	**-.26**	-.04
13. T-Anx							—	**.29**	**.43**	**.37**	**-.37**	-.13
14. S-Ang								—	**.24**	**.16**	**-.19**	**-.15**
15. T-Ang									—	**.31**	-.10	**-.19**
16. ASRS										—	**-.29**	**-.23**
17. SDE											—	**.32**
18. IM												—
Alpha	.80	.51	.90	.86	.90	.85	.66	.91	.81	.76	.73	.81

Note. $p < .05$ for correlations in bold type. MSBS-Tot = MSBS Total Score; DIS = Disengagement subscale; AA = MSBS Agitated Affect subscale; DA = MSBS Dysphoric Affect subscale; IN = MSBS Inattention subscale; TP = MSBS Time Perception subscale; BPS = Boredom Proneness Scale; ZBS = Boredom Susceptibility Scale; CESD = Centre for Epidemiological Studies Depression Scale; S-Dep = STPI State Depression; T-Dep = STPI Trait Depression; S-Anx = STPI State Anxiety; T-Anx = STPI Trait Anxiety; S-Ang = STPI State Anger; T-Ang = STPI Trait Anger; ASRS = Adult ADHD Self-Rating Scale, Inattention subscale; SDE = Brief Inventory of Desirable Responding, Self-Deceptive Enhancement subscale; IM = Brief Inventory of Desirable Responding, Impression Management subscale.

Table 8

Correlations between Final MSBS and Related Constructs, Subsample Two (Study 3, N = 333)

Scale	7	8	9	10	11	12
1. MSBS-Tot	**.62**	**.18**	**.39**	**.44**	**-.52**	**-.45**
2. DIS	**.63**	**.18**	**.37**	**.44**	**-.51**	**-.47**
3. AA	**.43**	**.20**	**.24**	**.32**	**-.39**	**-.31**
4. DA	**.48**	.09	**.40**	**.29**	**-.51**	**-.50**
5. IN	**.50**	**.13**	**.36**	**.48**	**-.39**	**-.33**
6. TP	**.39**	**.12**	**.18**	**.23**	**-.22**	**-.11**
7. BPS	—	**.34**	**.34**	**.57**	**-.58**	**-.50**
8. ZBS		—	**-.13**	**.39**	**-.26**	**-.15**
9. BFI-N			—	**.19**	**-.38**	**-.35**
10. BIS				—	**-.46**	**-.35**
11. PIL					—	**.70**
12. SWLS						—
Alpha	.80	.57	.83	.81	.84	.85

Note. $p < .05$ for correlations in bold type. MSBS-Tot = MSBS Total Score; DIS = MSBS Disengagement subscale; AA = MSBS Agitated Affect subscale; DA = MSBS Dysphoric Affect subscale; IN = MSBS Inattention subscale; TP = MSBS Time Perception subscale; BPS = Boredom Proneness Scale; ZBS = Boredom Susceptibility Scale; BFI-N = Big Five Inventory, Neuroticism subscale; BIS = Barratt Impulsivity Scale; PIL = Purpose in Life Inventory; SWLS = Satisfaction with Life Scale.

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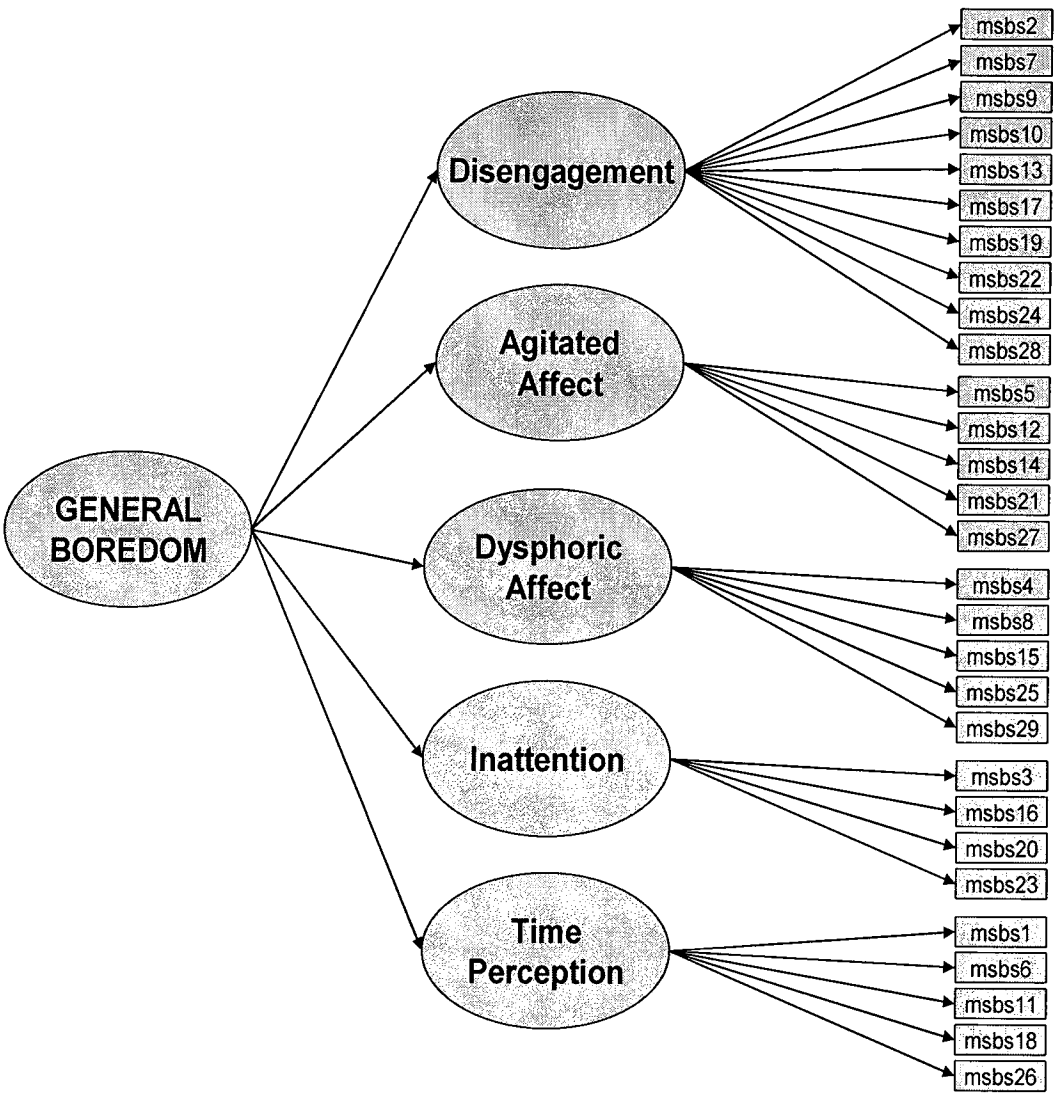

Figure 1. *Structural and Measurement Model of the Final, 29-item Multidimensional State Boredom Scale (MSBS)*

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Appendix A: Eight Qualitative Studies: Summary of Methodologies and Findings

1. Fisher (1993)

One of the first published studies on boredom using qualitative methods is by Fisher (1987, cited in Fisher, 1993). Her study, concerned with boredom at work, collected narrative reports on instances of boredom from workers. Fisher categorized the responses into three types of incidents: those involving 1) *quantitative underload*, 2) *qualitative underload*, and 3) *qualitative overload*. Responses that fit under the 'quantitative underload' category were the most frequent (55% of responses), and involved situations on the job where workers felt they had 'nothing to do'. In other words, the workers felt they had a *small amount* of work to do. Fisher noted that some individuals "were particularly bored when they had nothing to do following a busy period in which they had become accustomed to a high level of activity" (p. 397). Responses categorized as 'qualitative underload' included on-the-job incidents that were "simple, repetitive, had low mental demands, were not challenging, did not utilize their skills, or required watching for infrequent events (inspection, life guarding)" (p. 398). Here, it was not the *amount* of work that was problematic per se; instead, the *quality* of the work was an issue, in that it was too simple or unchallenging. Fisher's third category, 'qualitative overload'—the opposite of qualitative underload—included situations where participants felt bored and "[had] difficulty in keeping their attention on lectures and books on topics which they did not understand and regarded as too difficult" (p. 398). Here, rather than being too simple, the tasks were too demanding. Fisher notes "the idea that an optimal level of challenge, neither too difficult nor too easy, is required for a task to engage and sustain attention is widespread in the psychological literature" (p. 398).

2. Conrad (1997)

Conrad (1997) conducted a 'preliminary exploration' of "the meanings of boredom in everyday life," based on his own experience and on 35 students' written descriptions of a boring experience. He notes that the term 'boredom' is used as a label for something we find uninteresting, unpleasant, or unrewarding—an "all purpose term of disapproval" (p. 468). He further argues that the use of the term indicates that "something is happening (or not happening) but says little of what that is," and thus, he attempts to "unpack what is meant when boredom is invoked" (p. 469). Based on the students' written descriptions, Conrad concluded that there are two meanings of the term 'boredom': 1) *boredom as understimulation* and 2) *boredom as disconnection.*

With respect to 'boredom as understimulation', Conrad noted that the most common response from the students was that of having 'nothing to do'—that there was "nothing they wanted to do or that aroused their interest" or that they had "exhausted all their resources" (i.e., tried everything they could think of; p. 470). Importantly in such a scenario, the individual *wishes* they had something to do, "if only to occupy them enough so the time would seem to pass more quickly" (p. 470). However, Conrad points out that boredom can also occur *during* the course of an activity, especially where the stimulation involved is low. Further, he argues that understimulation can be experienced in an immediate situation or over a longer period of time (e.g., over a semester with a light

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courseload). In sum, responses categorized as 'boredom as understimulation' included situations where individuals "experienced little stimulation from their social environs" (p. 471). This category is very similar to Fisher's quantitative underload.

With respect to 'boredom as disconnection', Conrad emphasizes a lack of *engagement* with a particular situation. Specifically, he notes that in everyday life, "we continually engage and disengage in social interactions. When we are engaged, we feel interested and connected to the world around us. Sometimes disengagement is pleasant, as when we rest, relax or just 'chill out.' But if the disengagement is a disconnection to what is going on, if the activity continues without our making a connection with it, we can feel bored" (p. 471). Conrad gives examples from students' experiences during their coursework: characteristics of 'boring' lecture situations include lectures on a redundant topic ("repeated what I already knew"), or an unfamiliar or difficult topic ("over my head"). Thus, "too much or too little familiarity seem to make it difficult for students to connect to the interaction" (p. 471). Again, one notices parallels with Fisher's work. Conrad's situations characterized as 'boredom as disconnection' have similar features to those categorized by Fisher as qualitative underload or overload, although Conrad's conceptualization also alludes to the role of the individual in boredom, rather than emphasizing the environmental stimuli.

3. Gallagher, Harradine, and Coleman (1997)

Two qualitative studies conducted with academically gifted students are also relevant to boredom (Gallagher, Harradine, & Coleman, 1997; Kanevsky & Keighley, 2003). The first, by Gallagher et al., examined 871 academically gifted students' perceptions of their academic classes, especially whether or not they perceive them to be challenging. Overall, students reported "boring, repetitive classrooms" (p. 136). Students referred to boredom in terms of specific subjects that they found 'boring'. For example, one student called foreign language class 'boring' because it involves doing 'the same thing over and over'. In sum, boredom was associated with particular subjects that were found to be repetitive.

4. Kanevsky and Keighley (2003)

Authors of the second study with gifted students (Kanevsky & Keighley, 2003) argued that previous investigations on underachieving gifted students' process of disengagement and boredom have been superficial. Thus, their purpose was to give 10 underachieving gifted adolescents "an opportunity to describe the nature of their boredom." Results indicated that students equated boredom with 'schooling', which they viewed as opposite to 'learning'. Schooling was seen as "teacher-directed, textbook-based, and addressed content students already knew" (p. X). 'Boring' school experiences involve copying, repetition, and passive listening, and boring assignments were of a "familiar, artificial, concrete, decontextualized, simplistic nature" (p. 24). In contrast, 'learning' was seen to involve control, choice, challenge, complexity and caring teachers. Students desired a sense of control, self-determination, choice in learning, and more challenges, including a quicker pace or more complex thinking. Boredom was therefore associated with a lack of control, choice, challenge, or complexity. Finally, boredom was also associated with

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agitation and frustration. These students' understanding of boredom appears most similar to Fisher's qualitative underload, although again, there is an emphasis here on the individuals' sense of agency, experiencing oneself as active and 'alive'.

5. Jervis, Spicer, and Manson (2003)

Another group of researchers 'stumbled' upon the issue of boredom as part of a community-based psychiatric epidemiological study (Jervis, Spicer, & Manson, 2003). In conducting ethnographic interviews with 44 American Indians, the authors noted that one-third of participants spontaneously discussed the prominence of boredom in their lives. They described boredom in terms of having 'nothing to do' on the reservation, largely due to unemployment and few opportunities for entertainment or recreation. For example, one man described his joy dissipating after realizing that "an entire empty day awaited filling" (p. 45). The authors conclude that the boredom experienced by these individuals seemed to derive "from understimulation, along with a feeling of being deprived of the pleasure that is presumably available elsewhere" (p. 52-53). Participants described a desire to be near excitement—even though that 'excitement' could include violence or substance abuse. Some participants, however, were "positively engaged" and not frequently bored; these participants tended to be involved in meaningful, valuable or fulfilling activities such as parenting, creative endeavors, careers, or community involvement.

6. Harris (2000)

As part of a larger, quantitative study on boredom proneness, mood monitoring, mood labeling, and flow proneness, Harris (2000) also explored qualitative, phenomenological features of boredom by asking 170 adults open-ended questions about the experience of boredom itself, as well as its perceived causes, their coping strategies, and possible benefits of boredom. Responses were categorized and counted, and frequency tables were presented. Participants most associated the experience of boredom with restlessness (26% of participants), wandering attention (22%), tiredness (17%), and 'nothing to do' (17%). To a lesser extent, they associated boredom with frustration, emptiness/sadness, a lack of challenge, anxiousness, a lack of motivation, awareness of internal states, and distraction. Finally, 10% of participants stated that they are never bored. The most frequent perceived causes of boredom were lectures or classes (35% of participants), lack of things to do (34%), lack of challenge or irrelevance (21%), repetition/monotony (20%), loneliness (19%), and having to wait (18%).

7. Bargdill (2000a, 2000b)

Bargdill (2000a, 2000b) interviewed 3 men and 3 women between the ages of 16 to 67 who were experiencing 'life boredom' or 'habitual boredom'. Using interview data and participants' written descriptions of their experience of life boredom, he conducted a phenomenological analysis (i.e., Giorgi, 1975) in order to examine "the process that leads to [being bored with one's life], the psychological experience of life boredom, and the possibility of the resolution of that experience" (Bargdill, 2000b, p. 191). From this, Bargdill attempted to derive a 'general psychological structure' that was common to all

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participants, a structure that "established the psychological dynamics of life-boredom that held true invariably across the specific experiences studied" (2000b, p. 195). He found that participants were originally "active and interested in their lives", pursuing desired life goals and projects. However, they became bored and 'emotionally-ambivalent' after relinquishing these projects and taking up less desirable projects. Progress was impeded on the less desirable projects as boredom increased. Furthermore, participants grew bored with other aspects of their lives, and eventually adopted a passive and avoidant stance toward life. They felt anger toward those who they perceived as 'forcing' them to compromise their projects. They lost self-confidence, struggled with their identities, and began to feel empty. Although this study describes some common elements of chronic life boredom and its psychological course and structure, it did not provide detail about the feeling of 'boredom' specifically.

8. Martin, Sadlow, and Stew (2006)

Most recently, Martin, Sadlo & Stew (2006) conducted a qualitative, interpretive phenomenological study, asking 10 adults from the United Kingdom general population about their experience of boredom. Martin et al. used purposive sampling to choose 5 male and 5 female participants, ranging in age from 18 to 81, and who were from various educational and economic backgrounds. Each participant was interviewed twice to verify interpretations. The authors investigated four specific issues: 1) antecedents to boredom; 2) the subjective experience itself; 3) stages in its development; and 4) methods of coping with boredom. In their analysis, they discovered more than 100 themes and sub-themes, and noted that they attempted not to impose their own beliefs during the analysis.

Overall, participants reported that the experience of boredom is "an extremely unpleasant and distressing experience" (p. 193). Participants were grouped into four categories based on their reported antecedents to this experience: 1) participants who were bored mostly at work; 2) participants who were bored mostly at home; 3) participants who were almost always bored; and 4) those who were not bored (one individual). However, in terms of the actual subjective experience of boredom itself, the authors noted that they found very consistent descriptions across these different contexts: the "dominant feelings...were of being trapped and restless, yet lethargic, with associated guilt and, in some cases, depression" (p. 203). Those bored at work mentioned a lack of control; those bored at home mentioned feeling restless or fidgety; and both groups described feeling 'trapped'. Those individuals who were almost always bored described extreme restlessness and "a desperate need to do something but did not know what it was" (p. 203) and "a desperate desire to find something interesting to do, but a dispiriting lack of energy or motivation to become engaged" (p. 206). Interestingly, although participants experienced restlessness during boredom, they also experienced tiredness and lethargy—the authors noted that during boredom, people may fluctuate between high and low arousal. Other experiences associated with boredom were guilt about wasting time, frustration, stress, fatigue, poor concentration, perception of time passing slowly, and for those almost always bored, depression.

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Appendix B: Initial MSBS 76-Item Pool

1. I have lots of things that I want to do
2. I am frustrated
3. When I think about my current life circumstances, I feel I am wasting my time.
4. Time is dragging on.
5. I feel empty.
6. I wish I was doing something more exciting.
7. My attention span is shorter than usual.
8. If I got out of my current situation, I doubt that I would feel satisfied in another situation.
9. I feel tense
10. I am highly motivated
11. There's nothing worthwhile to do with my time.
12. I am easily distracted.
13. I feel a sense of accomplishment or productivity.
14. I feel restless.
15. I am not using my full abilities.
16. I am dissatisfied.
17. Time is moving very slowly.
18. My mind is wandering.
19. I feel involved with what is happening around me.
20. I am calm and relaxed.
21. It is difficult to focus my attention.
22. I wish I was somewhere else.
23. I am lonely.
24. I seem to be forced to do things that have no value to me.
25. I feel talkative and cheerful toward others.
26. I don't really care about anything right now.
27. I am tired.
28. I am moving in a worthwhile direction.
29. I am impatient right now.
30. I feel like I'm sitting around waiting for something to happen.
31. I would hate to have to socialize with other people right now.
32. I feel cut-off from the rest of the world.
33. I want something to happen but I'm not sure what.
34. There are lots of interesting things to do.
35. I feel stuck in my current situation.
36. I am angry.
37. I want to get out of my current situation as quickly as possible.
38. I have nothing to do.
39. I am indecisive or unsure of what to do next.
40. I wish I had someone to talk to or be with.
41. Things that once interested me aren't keeping my attention right now.

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42. I am very excited by the things I am doing.
43. I feel restless, like nothing I do would be fun or satisfying.
44. I am easily entertained by the things around me.
45. I can find something interesting about my current situation.
46. Everything is the same, very predictable.
47. I can't think of something I would like to do.
48. Others might find my current situation stimulating or exciting, but I don't.
49. I'm craving something new and different.
50. At the present moment, things and activities have lost their meaning for me.
51. I have lots of ideas about new things to do.
52. I am wasting time that would be better spent on something else.
53. Everything seems to be irritating me right now.
54. It seems like there's no one around for me to talk to.
55. I want to do something fun, but nothing appeals to me.
56. It seems like I am not getting anything done.
57. I am stuck in a situation that I feel is irrelevant.
58. I am too lazy to do something fun.
59. I am happy in my current situation.
60. If I had to, I could easily focus and be attentive right now.
61. I feel depressed.
62. I don't really want my situation to end.
63. I am more moody than usual.
64. I am annoyed with the people around me.
65. I am motivated to do something but I don't know what to do.
66. Right now, I am more quiet and reserved than usual.
67. Everything seems repetitive and routine to me.
68. At the present moment, I don't care about what will happen next.
69. I am worrying about things that aren't going well in my life.
70. I feel mentally sharp.
71. Right now, I just don't care about anything.
72. I feel flat, like I have no emotions.
73. I feel antsy, like I can't stop moving in my seat.
74. I feel "blah".
75. I feel agitated.
76. I feel numb inside.

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Appendix C: Multidimensional State Boredom Scale (MSBS)

Instructions: Please respond to each question indicating how you feel right now about yourself and your life, even if it is different from how you usually feel. Use the following choices: 1 = *Strongly disagree*; 2 = *Disagree*; 3 = *Somewhat disagree*; 4 = *Neutral*; 5 = *Somewhat agree*; 6 = *Agree*; and 7 = *Strongly agree.*

1. Time is passing by slower than usual.
2. I am stuck in a situation that I feel is irrelevant.
3. I am easily distracted.
4. I am lonely.
5. Everything seems to be irritating me right now.
6. I wish time would go by faster.
7. Everything seems repetitive and routine to me.
8. I feel down.
9. I seem to be forced to do things that have no value to me.
10. I feel bored.
11. Time is dragging on.
12. I am more moody than usual.
13. I am indecisive or unsure of what to do next.
14. I feel agitated.
15. I feel empty.
16. It is difficult to focus my attention.
17. I want to do something fun, but nothing appeals to me.
18. Time is moving very slowly.
19. I wish I was doing something more exciting.
20. My attention span is shorter than usual.
21. I am impatient right now.
22. I am wasting time that would be better spent on something else.
23. My mind is wandering.
24. I want something to happen but I'm not sure what.
25. I feel cut-off from the rest of the world.
26. Right now it seems like time is passing slowly.
27. I am annoyed with the people around me.
28. I feel like I'm sitting around waiting for something to happen.
29. It seems like there's no one around for me to talk to.

Scoring:
MSBS Total Score: sum of all 29 items
Disengagement subscale: Items 2, 7, 9, 10, 13, 17, 19, 22, 24, 28
Agitated Affect subscale: Items 5, 12, 14, 21, 27
Inattention subscale: Items 3, 16, 20, 23
Dysphoric Affect subscale: Items 4, 8, 15, 25, 29
Time Perception subscale: Items 1, 6, 11, 18, 26

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