



Developmental trajectories of childhood anxiety: Identifying continuity and change in anxious emotion[☆]

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Abstract

This paper outlines a way for thinking about continuity and change in childhood anxiety symptoms. Considerations for a model of continuity and change in anxious emotion are discussed first. Then, a perspective which may resolve inconsistencies across studies on the stability of childhood anxiety problems overtime is presented. The perspective views dysregulation of the anxiety response system and distress/negative affect as the core primary and necessary features of maladaptive anxious emotion and views the disorder-specific symptoms (generalized anxiety disorder, social phobia, separation anxiety, panic disorder, and simple phobia) as secondary characteristics of maladaptive anxious emotion. The perspective emphasizes ordered complexity in the developmental expression of anxious emotion, and delineates expectations for continuity and change in the features of anxious emotion by describing major normative trajectories across childhood and positing multiple sub-trajectories.

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Developmental trajectories of childhood anxiety: Identifying continuity and change in disorders of anxiety

Anxiety disorders in childhood and adolescence are highly prevalent and can cause intense psychosocial impairment (Silverman & Treffers, 2001). Childhood anxiety disorders, if left untreated, predict increased risk for mental disorders and substance use problems later in life (Kendall, Safford, Flannery-Schroeder, & Webb, 2004; Pine, Cohen, Gurley, Brook, & Ma, 1998) and are associated with negative cognitive, neuro-developmental, and hormonal outcomes (Carrión, Weems, & Reiss, 2007; De Bellis et al., 1999). The field has advanced considerably with demonstrated efficacy of cognitive-behavioral and pharmacological strategies in the treatment of childhood anxiety and phobic disorders (see Albano & Kendall, 2002; Creswell & Cartwright-Hatton, 2007; In-Albon & Schneider, 2007; Kendall, 1994; Silverman et al., 1999; Walkup, Labellarte, & Ginsburg, 2002). There have also been advances in knowledge about the processes and mechanisms responsible for childhood anxiety problems as well as the processes that ameliorate these problems (i.e., the how and why). However, the field continues to lack a truly comprehensive theory of the developmental psychopathology of childhood anxiety. An important step in building such a theory would be a description of continuity and change in anxious emotion followed by multidisciplinary research elucidating the factors responsible for continuity and change. The purpose of this paper is to provide an empirically supported concise model that describes continuity and change in anxious emotion across childhood (i.e., school-aged years).¹

The field of child and adolescent anxiety problems in recent years has consistently moved toward understanding anxiety problems by focusing on the specific anxiety disorders (e.g., separation anxiety disorder, social anxiety, generalized anxiety disorder, etc.) as delineated in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, American Psychiatric Association, 1994)*. Although the system has produced important advances in knowledge, researchers continue to question the validity of the anxiety disorder diagnoses for the childhood years (see Costello, Egger, & Angold, 2004; Curry, March, & Hervey, 2004; Dadds, James, Barrett, & Verhulst, 2004; Saavedra & Silverman, 2001; Weems & Stickle, 2005). For instance, research suggests that the DSM-defined disorders have incredibly high rates of comorbidity, that the only variables that distinguish them are definitional (e.g., more intense worry in generalized anxiety disorders, more social concerns in social anxiety disorder—making discrimination largely tautological), and that with the possible exception of obsessive compulsive

¹ The goal of the paper is not to summarize the literature on the developmental psychopathology of anxiety and so specific risk and protective factors are discussed mainly in general terms. The goal of the paper is simply to present a developmentally sound perspective for thinking about continuity and change in anxious emotion that fits the existing descriptive literature and fosters sound future research on the developmental origins of problematic anxiety. I use the term “model” to emphasize that this is a hypothetical description of anxious emotion not a theoretical explanation. The use of the term trajectory in the title also reflects the more narrow focus. Specifically, instead of implying that I am delineating “pathways” (which involve specific risk and protective factors to developing a disorder or in disorder maintenance), I focus on the term “trajectory” to imply a more limited aim of describing anxious emotion over time. This goal is consistent with the recent recommendations of Kagan (2007) who has pointed out the importance of adequately describing phenomena of interest before trying to explain them.

disorder and posttraumatic stress disorder² they do not predict differential treatment outcomes (see Berman, Weems, Silverman, & Kurtines, 2000; Costello et al., 2004; Curry et al., 2004; Dadds et al., 2004; Saavedra & Silverman, 2001; Weems, 2005). Thus, the diagnoses may not represent ideal outcome variables when trying to understand continuity and change in anxious emotion.

Alternatively, another focus has been on continuous measures of broader constructs such as internalizing symptoms (e.g., Child Behavior Checklist, Achenbach, 1991); however, lumping symptoms together using continuous assessment may also be limited with regard to understanding continuity and change in anxious emotion because there may be different trajectories for different types of symptoms. In the following sections, a perspective is presented that describes continuity and change in anxious emotion among school-aged youth (approximately age 6–18 years). I use the phrase “maladaptive anxious emotion” as a way to discuss problematic or interfering anxiety, thus implying that there is a core set of features that underly the *DSM* anxiety disorders that nonetheless ontologically transcend the *DSM* definitions of what a specific anxiety disorder is (see Moses & Barlow, 2006; Watson, 2005 for related discussion).

Developmental considerations for a model of continuity and change in anxious emotion

Perhaps the biggest limitation of using *DSM* anxiety disorder diagnoses for developing a developmental theory is that longitudinal research on the stability of childhood anxiety disorders has produced highly inconsistent results (e.g., Last, Perrin, Hersen, & Kazdin, 1996; Newman et al., 1996). Prospective longitudinal studies of childhood anxiety disorders have reported estimates of stability from 4% to 80% (e.g., Keller et al., 1992; Last et al., 1996; Newman et al., 1996). These studies may show wide variability for many reasons (e.g., the type of disorder, the informant, the sample, the method of assessment, or the amount of time that has passed between the initial evaluation and the follow-up³). Interestingly, however, studies have shown similarly wide estimates even for the same anxiety disorder across similar time frames using similar methodology. For example, Last et al. (1996) reported that 13.6% of youth with social phobia retained the diagnosis after 3–4 years, whereas Newman et al. (1996) reported that 79.3% of youth with social phobia retained the diagnosis after 3–10 years. The main difference between these studies was the age of participants (starting as young as in 5 years old in Last et al. versus 11–21 in Newman et al.). An important reason for the inconsistencies or seemingly unstable pattern of *DSM* anxiety disorder diagnoses may be due to a limited appreciation of age-related developmental differences in the symptom expression of childhood anxiety and phobic disorders.

Research and theory on normative emotional development suggests specific age differences in the predominant expression of the symptoms of childhood anxiety and phobic dis-

² While there do appear to be developmental differences in symptom expression in, for example, post traumatic stress disorder (Carrión et al., 2002b; Scheeringa, Peebles, Cook, & Zeanah, 2001), post traumatic stress disorder and obsessive compulsive disorder are not the focus of this paper. This is because normative patterns in traumatic stressors, obsessions, and compulsions have not been clearly identified (see Silverman & Treffers, 2001; Warren & Sroufe, 2004 for relevant discussion).

³ For an expanded discussion of the role of assessment instruments and other methodological considerations see Silverman and Ollendick (2005) or Essau and Barrett (2002).

orders (Warren & Sroufe, 2004; Westenberg, Siebelink, & Treffers, 2001). For example, Westenberg and colleagues have utilized developmental theories of personality development (e.g., Loevinger, 1976) to show how the predominant expression of anxious and phobic symptoms may be tied to normative developmental periods and challenges. Drawing together Westenberg et al. (2001) and Warren and Sroufe's (2004) theorizing regarding the sequence and timing of symptom expression for school-aged youth (aged 6–17 years) one can predict, for instance, that separation anxiety symptoms and animal fears will be predominant in youth around ages 6–9 years, generalized anxiety symptoms and fears concerning danger and death in youth 10–13 years, and social anxiety symptoms and social/performance related fears in adolescents around age 14–17 years.

Epidemiological data on the age of onset of anxiety disorder diagnoses is generally consistent with the developmental predictions of age related differences (see Costello et al., 2004 for a review of age of onset findings). Research in clinical samples also suggests that separation anxiety disorder is more common in children while social phobia is more common in adolescents. For instance, Weems, Hammond-Laurence, Silverman, and Ginsburg (1998) reported differences in the distribution of anxiety disorders with separation anxiety disorder more common in children (aged 6–11 years) while social phobia was more common in older youth (aged 12–17 years) in a sample of 280 youth who met diagnostic criteria for anxiety disorders. Research examining specific anxious symptoms and fears dimensionally across age ranges also support the idea of sequential developmental differences in the expression of specific fears and anxiety symptoms. For example, research by Ollendick and colleagues (e.g., Ollendick, King, & Frary, 1989; Ollendick, Matson, & Hessel, 1985) in normative samples (in the US and internationally) showed higher rates of animal fears in children as compared to adolescents, whereas Poulton, Trainor, Stanton, and McGee (1997) found social fears to be more common in adolescents than children.

In terms of a priori tests of the developmental hypothesis, Westenberg, Siebelink, Warmenhoven, and Treffers (1999) have reported that separation anxiety disorder developmentally precedes overanxious disorder. Westenberg, Drewes, Siebelink, and Treffers (2004) found that child-reported fears of physical danger and punishment decrease with age and that fears of social and achievement evaluation increase with age when controlling for overall fears. Weems and Costa (2005) also provided a test of the above developmental theory and results pointed toward specific symptoms predominant at certain ages (i.e., separation anxiety symptoms in youth 6–9 years, death and danger fears in youth 10–13 years, and social anxiety symptoms, as well as failure and criticism fears in youth 14–17 years) when controlling for overall trends in anxiety disorder symptoms.

Recently, Westenberg, Gullone, Bokhorst, Heyne, and King (2007) provided a longitudinal and cross sectional test of the normative developmental pattern predicted for social evaluation fears and confirmed that social evaluation fear increased between childhood and adolescence. Individual differences in social evaluation fear displayed modest stability over a 3-year follow-up period and the stability of social evaluation fear was stronger in older youth. Taken together, the findings to date suggest that models of continuity and change in childhood anxious emotion should consider normative differences in the developmental expression of childhood fears and anxiety symptoms. In other words inconsistency in longitudinal findings using *DSM* anxiety disorder diagnosis may result in part from developmental differences in expression and not a complete lack of continuity (a concept that has been termed “heterotypic continuity” and has been previously applied to conduct problems, see Moffitt, 1993).

Drawing from the above considerations, inconsistencies in the literature might actually reflect, at least in part, normative developmental differences. Such findings point to the importance of including age-related differences in a model of continuity and change. For example, above I noted that Last et al. (1996) reported that only around 14% of youth with a primary social anxiety disorder still had that same diagnosis 3–4 years later [range across the disorders 4.3% (separation anxiety disorder) to 30.8% (Specific Phobia) stable overtime]. However, 20% retained one or more of their initial comorbid anxiety disorder diagnoses and 30% developed another *DSM* disorder, including 16% of the sample who developed a different anxiety disorder. Thus, maladaptive anxious emotion may be more stable than are particular *DSM* disorders in childhood.

In addition, if there are systematic developmental differences in the type of symptoms that are expressed then using global measures of internalizing symptoms or focusing solely on core features of anxious emotion might also be limiting, because lumping, for instance, social, separation, and mortality fears and symptoms together could obscure real developmental change. In one of the most comprehensive longitudinal examinations of anxiety symptoms across childhood through adolescence, Bosquet and Egeland (2006) found only low (e.g., $r = .27$) stability of anxiety across the childhood assessment and a moderate correlation ($r = .43$) between the 16-year-old and 17.5-year-old anxiety assessment. However, these researchers used items from the Child Behavior Checklist (CBCL, Achenbach, 1991) and did not distinguish amongst types of anxiety symptoms. If one set of symptoms is on average increasing (e.g., social anxiety) and another set is on average decreasing (e.g., separation anxiety), stability estimates will be affected at different ages. Thus, in describing continuity and change it is also important to identify the separate components or features of anxious emotion that are important to consider.

Critical features of anxious emotion for a developmental model of continuity and change

A perspective for understanding continuity and change in anxious emotion takes as a starting point that anxiety is a biological reality. That anxiety is a higher order feeling state (Damasio, 2003) produced by the brain mechanisms responsible for basic emotion—primarily those brain mechanisms involved in physiological arousal and fear responses but also those involved with negative affect and behavioral avoidance (Baving, Laucht, & Schmidt, 2002; Davidson & Fox, 1989; Davidson, Marshall, Tomarken, & Henriques, 2000; LeDoux, 2000). Anxiety has been defined as a multi-component response system involving affective, behavioral, physiological, and cognitive components (see Barlow, 2002). Worry, for example, is one of the cognitive components of anxiety in that it can be viewed as part of the response system which prepares the individual to anticipate future danger. Fear can be viewed as part of the response system which prepares the individual for escape (e.g., Barlow, 2002). Anxiety thus has an important functional role in normal human behavior.

The basic core specific feature of maladaptive anxious emotion is dysregulation of the normative anxiety response system. Dysregulation may involve, for example, intense disabling worry that does not aid in the anticipation of true future danger or intense fear reactions in the absence of true threat. An additional but nonspecific core feature is distress/impairment resulting from dysregulation in the system and corresponding negative emotional states (e.g., being upset, concerned, the experience of “negative affect”). These core features of anxiety problems may be expressed behaviorally (e.g., avoidance), cogni-

tively (e.g., rumination and concentration difficulties), physiologically (e.g., dizziness, racing heart) and socially (e.g., interpersonal difficulties). The secondary features of anxiety problems are those aspects that differentiate the *DSM-IV* (American Psychiatric Association, 1994) defined anxiety disorders (e.g., worry about many different things in generalized anxiety disorder, interpersonal and self image concerns in social anxiety disorder, uncued panic attacks in panic disorder).

Positing dysregulation of the anxiety response system and negative affect/distress as the core necessary ingredients of maladaptive anxious emotion draws from a converging set of data and theory on the treatment of emotional disorders (Barlow, 2004; Moses & Barlow, 2006), the development of emotion regulation (Eisenberg et al., 2001; Suveg & Zeman, 2004), and updated versions of the tripartite theory of anxiety and depression (Clark & Watson, 1991; Watson, 2005). In particular, Watson (1999, 2005) has theorized that all anxiety disorders share a common higher-order dimension of negative affect whereas each individual disorder is characterized by unique facets. Hyperarousal was initially thought to uniquely characterize anxiety disorders versus depression. Hyperarousal has been questioned as the anxiety definitive construct because not all anxiety disorders are characterized by intense physiological arousal per se (e.g., cognitive aspects such as worry may predominate). The phrase I have chosen, “dysregulation of the anxiety response system” is consistent with this idea and also draws from the literature on emotion regulation (Suveg & Zeman, 2004).

The symptoms specific to the various childhood anxiety disorders (e.g., anxiety in social situations-social anxiety disorder, anxiety stemming from worry about diverse things-generalized anxiety disorder, anxiety upon separation from caregivers-separation anxiety disorder) from the *DSM* are secondary but are also critical features to consider in a model of continuity and change because they may help to identify normative developmental differences in expression. Theory (Watson, 2005) and research in adults (Zinbarg & Barlow, 1996) and youth (Cannon & Weems, 2006; Chorpita, Albano, & Barlow, 1998; Muris, Schmidt, Merckelbach, & Schouten, 2001; Spence, 1997) support the distinctions amongst the various secondary features and between secondary and core features. This point of view is also consistent with the concept of trait anxiety which is thought of as a predisposition to experience anxiety sensations (Spielberger, 1972, 1973).

The importance of the concept of dysregulation to maladaptive anxious emotion is highlighted by research which suggests that youth with anxiety disorders actually have a relatively diminished capacity for controlling and understanding emotion (Southam-Gerow & Kendall, 2000; Suveg & Zeman, 2004) as well as a body of research which suggests that children with anxiety problems are characterized by differences in physiological responding (e.g., Beidel, 1991; Carrión, Weems, Ray, & Reiss, 2002b; Carrión et al., 2002a). For example, children with anxiety disorders show heightened cortisol reactivity (Carrión et al., 2002a, 2002b; Granger, Weisz, & Kauneckis, 1994; see Gunnar, 2001 for a review). Similarly, research on the construct of behavioral inhibition (hypothesized to be a potential risk factor for later childhood anxiety disorders) has shown that behavioral inhibition is associated with increased cortisol levels (Kagan, Reznick, & Snidman, 1987; Kagan, Reznick, & Snidman, 1988). Research on behavioral inhibition has also indicated that behavioral inhibition is concurrently and longitudinally associated with elevated and stable (i.e., low-variability) heart rates in community recruited samples of youth followed from infancy (Kagan et al., 1987, 1988).

The data available on youth with elevated anxiety suggests that they show a differential physiological response to anxiety provoking stimuli. For example, [Beidel \(1991\)](#) compared a community sample of 23 test-anxious children (mean age 9.8 yrs) and 15 non-test anxious children (mean age 9.6 yrs) and found significant differences in pulse rate and systolic blood pressure between the test-anxious and non test-anxious youth during social-evaluative tasks. [Weems, Zakem, Costa, Cannon, and Watts \(2005\)](#) examined the physiological response (i.e., skin conductance and heart rate) of youth exposed to a mildly phobic stimulus (video of a large dog). The results of this study indicated that heart rate and skin conductance response were associated with youth report of *DSM* anxiety disorder symptoms and that heart rate response was more strongly associated with anxiety symptoms than depression.

In addition to the evidence pointing out the importance of dysregulation in maladaptive anxious emotion, there may also be salient individual differences in the absolute level of physiological arousal that youths consider problematic. In other words, additional social, cognitive, and behavioral factors influence the level of interference brought about by physiological arousal. The research on anxiety sensitivity has shown that the absolute level of arousal symptoms is not crucial for maladaptive anxious emotion. Specifically, this research suggests that the interpretation of arousal symptoms makes a huge impact on the experience of problems with anxiety ([Reiss, 1991](#); [Weems et al., 1998](#)). Another way to think about this is that certain individuals will experience a large amount of negative affect and distress with relatively little experience of physiological dysregulation.

The linkages between normal development, the various biological, cognitive, behavioral, and social risk and protective mechanisms, and the symptoms of anxiety and phobic disorders can be understood via the idea that there are basic biological and behavioral predispositions to dysregulation of the anxiety response system and negative affect (i.e., the core features of maladaptive anxious emotion). These predispositions give rise to undifferentiated anxious emotion. The symptoms of specific anxiety disorders (i.e., the secondary features) are shaped by various similar or additional biological, cognitive, behavioral, and social processes (see [Askew & Field, 2007](#); [Field & Lawson, 2003](#); [Mineka & Zinbarg, 2006](#); [Puliafico & Kendall, 2006](#); [Vasey & Dadds, 2001](#); [Weems & Stickle, 2005](#)) and thus the expression of anxiety is tuned, in part, to normative and sequential developmental challenges in these domains. For example, at the core level, females may be more biologically prone to or differentially reinforced by caregivers for dysregulation in the anxiety response system. At the secondary level, we can draw from the idea of normative developmental differences discussed above. For instance, youth in western cultures aged 10–13 years are gaining insight into mortality and broader world concerns and this may give rise to death and danger fears and the worries characteristic of generalized anxiety disorder while the emerging social understanding and comprehension of adolescents may lead to a predominance of social and evaluative concerns in this age group (see [Warren & Sroufe, 2004](#); [Westenberg et al., 2001](#)).

A functional model of continuity and change in anxious emotion must also take into consideration the reality that ideographic or individually experienced factors will also shape the expression of anxious emotion. The model should be consistent with the idea that an individual's particular outcome (e.g., maladaptive anxious emotion in late adolescence) may be reached from different initial conditions and through different processes (i.e., "equifinality") and that particular risk processes, events, or states (e.g., early childhood maladaptive anxiety) may not necessarily lead to the same outcome (e.g., maladapt-

tive anxiety in adolescence) in every individual child (i.e., “multifinality” see Cicchetti & Rogosch, 1996). Drawing from the Piagetian notion of age-related, sequential, developmental progression (see Piaget, 1950, 1983), the process of emotional development may be similar to cognitive development in that it is not a fully age constrained sequential progression. In other words, various domains of emotion may develop differentially for individual children. This process of individual differential development has been termed horizontal decalage (see also Baylor & Lemoyne, 1975; Gold, 1983). The basic explanation for horizontal decalage is that children who have substantial experience in a domain may develop in that domain earlier than usual. For example, a series of negative social experiences at an early age may prompt the expression of social anxiety at an earlier age than usual.

The above can be illustrated through a hypothetical child. Consider a child with a propensity for elevated arousal and avoidance (e.g., high trait anxiety, behaviorally inhibited) who lives with parents who model withdrawn or anxious behaviors in social contexts, and is repeatedly exposed to socially challenging events. This child may be allowed to avoid social situations and thus avoids developing skill in facing the social situations. Couple this with a socially traumatic experience (e.g., major social faux pas amongst a large group of peers) and this child is then highly vulnerable to develop maladaptive anxious emotion and the specific set of experiences point toward the constellation of symptoms revolving around social anxiety. In terms of developmental trends, if these happen early in the child’s life, the child may show this primarily as separation anxiety disorder. If later in development, the theory predicts it should show as social anxiety disorder. However, this child might still end up with social anxiety disorder at an early age given the specific experiences and thus it is important to realize that there will be individual differences in the strength of normative factors to shape an individuals’ expression of anxious emotion in any individual child.

A description of continuity and change in anxious emotion

Drawing from the above considerations, the perspective presented in this paper hypothesizes a temporal view of continuity and change in anxious emotion. The model had several general features. First, the perspective emphasizes the complex interactions among various influences in shaping the expression of anxious emotion. Second, the perspective draws from the idea that all behavior patterns have varying trajectories overtime (Baltes, Reese, & Lipsitt, 1980; Baltes, Reese, & Nesselroade, 1988) and that identifying symptom trajectories is particularly useful in understanding emotional problems (Moffit, 2006; Moffitt, 1993). Third, the model represents a synthesis of the diverse research and theory presented above but integrates ideas most directly from tripartite theory (i.e., dismantling features, Watson, 2005) and the developmental perspective of Westenberg et al. (2001) (i.e., normative developmental differences in expression). Finally, the model emphasizes ordered complexity (Robertson & Combs, 1995) in describing continuity and change in anxious emotion.

The model also has several specific features; in particular, that there will be distinct groups of youth with respect to the linear progression of levels in core and secondary features of anxious emotion. The model is illustrated in Fig. 1. An individual’s starting point is determined by biological, behavioral, cognitive, and social factors early in development. Roman numerals in the model represent the major trajectories delineated by the perspec-

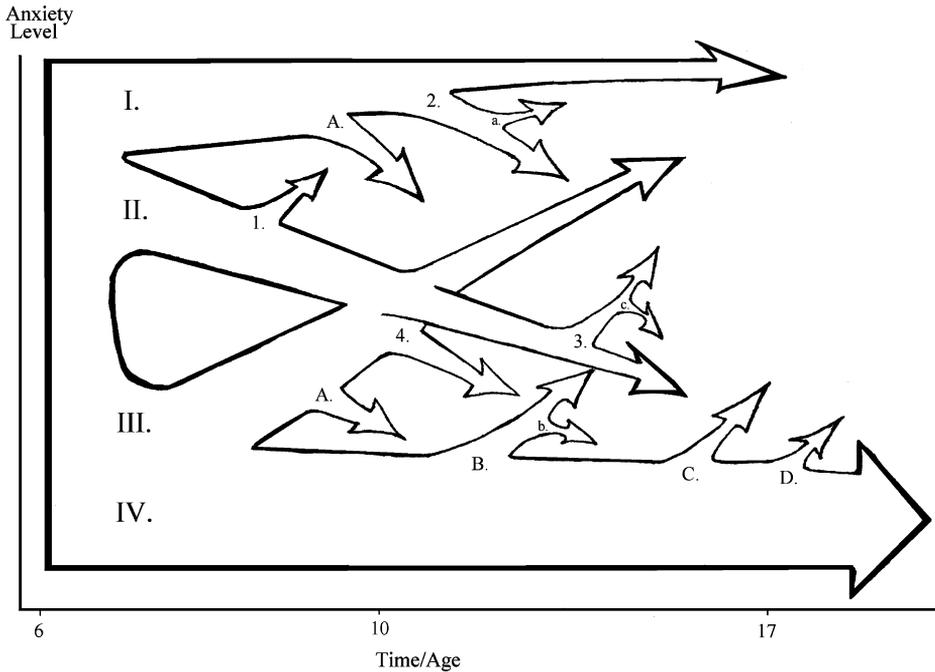


Fig. 1. Schematic representation of possible developmental trajectories emphasizing the ordered complexity of continuity and change in anxious emotion. The figure emphasizes the utility and limitations of simple linear models of continuity in anxious emotion over time. Major linear trajectories can be identified but the expression of anxiety over time is complex and dynamic. Roman numerals represent the major trajectories delineated by the perspective. I, stable elevated; II, decreasers; III, increasers; IV, stable low. An individual's starting point is determined by biological, behavioral, cognitive, and social factors. Capital letters point out the possibility of normative influences on trajectories. The perspective suggests that these normative influences may be particularly relevant to the secondary features of anxiety-disordered emotion. For example, (A) might represent the diminishing salience of separation anxiety in youth around age 10 or so, (B) the increasing salience of mortality fears and generalized anxiety/worry concerns around age 10 or so, (C) the increasing salience of social fears in adolescence, and (D) the emergence of panic disorder. Arabic numerals point out that additional factors may be experienced and will influence the trajectory in a child or adolescent's anxious emotion. Lowercase letters point out that the influence is complex and may always undergo redirection given the experience of additional biological, behavioral, cognitive, and social risk or protective factors.

tive. Most youth should have normal or what amounts to stable relatively low levels of anxiety (Roman numeral IV). In general this group's levels might fluctuate slightly or show the modest declines—associated with normative decreases in anxiety overtime—but should remain relatively low overtime. There should also be youth with stable relatively high anxiety (Roman numeral I). Again this group's anxiety may fluctuate slightly or show modest declines overtime but will be consistently relatively high. The model suggests that this group is likely to show heterotypic continuity in that the individual's presentation of symptoms may change but they will remain relatively high anxious. There should also be escalators (i.e., those who show increases overtime—starting relatively low and increasing into the range of the stable high, Roman numeral III) and conversely a steep decreasing group (i.e., those starting high earlier on in the school-aged years and ending up in the normal range by early to late adolescence, Roman numeral II). These

groups represent the major developmental trajectories of anxious emotion in childhood and adolescence in the model.

The figure and model emphasizes the utility of linear models in accounting for much of the variance in change. However, it also points to limitations of simple linear models of continuity in anxious emotion overtime. Specifically, major linear trajectories can be identified but the expression of anxious emotion time is complex and dynamic. The capital letters point out the possibility of ordered normative influences on trajectories and the expression of anxious emotion. As noted above, the perspective suggests that these normative influences may be particularly relevant to the secondary features of anxiety disordered emotion. For example, (A) might represent the diminishing salience of separation anxiety in youth by around age 10 or so, (B) the increasing salience of mortality fears and generalized anxiety/worry concerns around age 10 or so, (C) the increasing salience of social fears in adolescence, and (D) the emergence of uncued panic experiences.

Arabic numerals point out that ideographically experienced biological, behavioral, cognitive, and social experiences may also influence the trajectory of a child or adolescent's anxious emotion and thus incorporate complexity into the model. For example, a number of negative social experiences or a traumatic stressor may increase anxiety levels in a child whose anxiety had been decreasing (e.g., Arabic numeral "3"). Whereas receiving treatment or garnering social support from increased friendships may decrease anxiety in a previously high anxious child (e.g., Arabic numeral "2"). Lowercase letters further point to complexity by showing that a particular trajectory may undergo redirection given the experience of additional biological, behavioral, cognitive, or social risk or protective factors (e.g., treatment relapse-lower case letter "a").

Evidence to support this description of continuity and change comes from several areas. The first is the research discussed above regarding normative developmental differences in the predominant expression of anxiety symptoms. Second, continuous measures that assess anxiety symptoms and anxious emotion (without distinguishing among types of symptoms) generally show moderate stability overtime (Bosquet & Egeland, 2006; Gullone & King, 1997; Gullone, King, & Ollendick, 2001; Jalongo, Edelsohn, Werthamer-Larsson, Crockett, & Kellam, 1995; Poulton et al., 1997; Reynolds, 1981), suggesting that from any given age period some youth will show increases, some will show decreases, and some will remain relatively stable. Moreover, mean levels of undifferentiated anxiety and fears appear to decrease longitudinally overtime and in older age groups (i.e., adolescents versus children) in community samples (e.g., see Gullone & King, 1997; Gullone et al., 2001; Ollendick et al., 1985, 1989; Weems, Hayward, Killen, & Taylor, 2002). Adolescents tend to show a slightly smaller decrease in symptoms (Gullone et al., 2001). However, measures of trait anxiety and measures that tap core features of dysregulation in the anxiety response system tend to show relatively high stability overtime. For example, Reynolds (1981) reported a nine-month test-retest correlation of .69 with the Revised Children's Manifest Anxiety Scale, a measure assessing trait (core) anxiety in a sample of 534 school children (grades 4–6).

Third, results from longitudinal studies support the hypothesized major linear trajectories in anxious emotion. For example, Henry and Moffitt (1991) identified four anxiety groups in a sample of 435 males and 415 females assessed at age 11 and 13 as part of the Dunedin Multidisciplinary Health and Development Study. The child's self-reported anxiety scores from the Diagnostic Interview Schedule for Children—Child Version (i.e., a composite of symptoms across the various disorders) were used to create groups.

The groups were decrease-children who scored at least one standard deviation above the sample mean on anxiety symptoms at age 11 and who scored less than one half standard deviation above the mean at age 13 ($n = 35$); increase-children who scored less than one half standard deviation above the sample mean at age 11 and who scored at least one standard deviation above the mean at age 13 ($n = 41$); stable high-children who scored at least one standard deviation above the mean on anxiety symptoms at both ages ($n = 15$); and low-children who did not report high anxiety at either age ($n = 650$). Similarly, Weems et al. (2002) found evidence for stable elevated, decrease, increase, and stable low groups in a large ($n = 1756$) sample of high school students (grades 9 through 12) assessed yearly over a 4-year period using cluster analyses to identify different developmental trajectories in levels of anxiety sensitivity (using the Anxiety Sensitivity Index). For example, a five-cluster analysis produced stable high ($n = 104$), stable low ($n = 790$), fluctuators ($n = 24$), escalators ($n = 330$) and decrease ($n = 508$).

Finally, a large body of treatment research and emerging longitudinal designs show that biological, behavioral, cognitive, and social experiences may influence trajectories in anxious emotion. For example, research shows that elevated anxious emotion can be reduced overtime (i.e., movement from a stable high or increasing path to a decreasing or stable low path) via cognitive-behavioral, family based (social), and pharmacological (biological) interventions (see Albano & Kendall, 2002; Creswell & Cartwright-Hatton, 2007; Kendall, 1994; Silverman et al., 1999; Walkup et al., 2002).

Summary and conclusions

Viewing the *DSM* symptoms of anxiety disorders as secondary features of anxiety-disordered emotion shows that there are developmental consistencies among the apparent inconsistencies in anxiety disorder stability in youth. There may be a relatively larger degree of continuity in the core features of anxious emotion and there appears to be consistency in the trends of the core and secondary features overtime. By describing expected continuity and change, this perspective points to the need to identify the specific processes that contribute to continuity and change by focusing on trajectories in the core features of anxiety-disordered emotion and that shape the specific expression and trajectories of the secondary features. The perspective draws attention to developmental differences in stability and symptom expression. For example, maladaptive anxious emotion may be much more stable than are particular *DSM* disorders in childhood. Similarly, the perspective draws attention to the need to appreciate the specific features of anxious emotion that are being assessed in longitudinal studies of anxiety.

Research has identified biological (e.g., genetics, temperament, psychophysiology), behavioral (e.g., operant and respondent learning models), cognitive (e.g., information processing, stimuli/event interpretation), interpersonal (e.g., attachment theory, parent-child relationship), and contextual (e.g., family, home, school, and community) processes important to understanding the origins of childhood anxiety (see Essau & Peterman, 2002; Vasey & Dadds, 2001; Weems & Stickle, 2005). Research aimed at determining the extent to which these factors shape continuity and change in the core features and shape the expression of secondary features of anxiety-disordered emotion will facilitate the development of a comprehensive theory. It is hoped that the perspective presented here will encourage research to focus on trajectories in anxious emotion overtime. The hope is to turn descriptions of trajectories into explanations and systematic understanding of the

developmental pathways to chronic maladaptive anxious emotion, recovered anxious children, etc. However, there is a need to continue to test the adequacy of the model to simply describe continuity and change. Person-centered analyses of anxiety symptoms overtime such as hierarchical linear modeling and cluster analyses may be particularly useful in this regard as will the use of cross-sequential designs.

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