

## Interest and Interests : The Psychology of Constructive Capriciousness\*

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*The only difference between a caprice and a life-long passion is that the caprice lasts a little longer.* (Oscar Wilde, 1998, p. 19)

The abiding interest that sustains scientific research has only rarely been displaced onto interest itself. What little research there is, however, has pursued one of two parallel paths. The first path is the study of interest as a transient affective state. Emotion psychology—this path's primary traveler—has historically viewed interest as the black sheep in the flock of basic emotions. The “prototypical” negative emotions such as anger and fear have received the lion's share of research, leaving interest and the other positive emotions in relative obscurity (Fredrickson, 1998). But mere neglect aside, many venerable shepherds have kicked interest out of the flock entirely. Interest isn't included in many major emotion theories, beginning with Darwin (1872/1998) and continuing with contemporary models (Carver & Scheier, 1998; Lazarus, 1991; Oatley & Johnson-Laird, 1996; Ortony, Clore, & Collins, 1988).

Yet other areas of psychology have argued that the emotion of interest is a cornerstone of human development. Education theorists since John Dewey (1913) have rebuked the American education system for failing to capitalize on children's curiosity (Bruner, 1966; Holt, 1967) or for impairing their interest in learning (Holt, 1969). Indeed, educational psychologists were arguing for interest as a source of intrinsic motivation long before other areas of psychology had acknowledged either interest or intrinsic motivation. Vocational psychologists have also explored how feelings of interest contribute to beneficial vocational decisions and optimal work environments (Roe & Siegelman, 1964; Savickas, 1999). And art scholars have argued that interest is the most important emotion in aesthetic experience (Berlyne, 1971; Tan, 2000). Unfortunately, the lack of dialogue between the different perspectives on emotional interest has left a scattered body of thought.

The second path is the study of interest as an aspect of personality; this is better labeled the study of “interests” rather than “interest.” Interests are self-sustaining motives that lead people to engage with certain objects, activities, or ideas for “their own sake.” Personality psychology has never had much to say about interests; little has changed since White (1975) noted that “interests play a curiously small part in current thinking about personality” (p. 348). The idiosyncratic contents of interests don't easily assimilate into the culture of personality research. Unlike general traits and dispositions, interests are idiosyncratic and person specific. They are thus unsavory items for personality psychology, which has always favored the general and common over the specific and unique (Allport, 1962).

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The absence of a conceptual understanding of interests has stifled attempts to understand a central question in interest psychology: How do interests develop? Why is one person interested in commonwealth fiction, another in ice hockey, and still another in research psychology? The origins of interests have remained mysterious to personality psychology, probably because many past theorists have brushed interests aside either as shallow substitutes for more sordid motives (Freud, 1920, 1923) or as the outcomes of associative learning (Thorndike, 1935a, 1935b). And vocational psychology, which is deeply concerned with the question, has made little theoretical progress in the past 80 years. As Savickas (1999) noted in an overview of vocational interests:

The definitions of interest that do appear seem disparate and generally fail to distinguish interest from other motivational constructs. Hypotheses and theories about the origins and development of vocational interests seem riddled with clichés that lack content and cannot be scientifically examined. ... In short, the accumulated literature on vocational interests is more empirical than conceptual, with little connection between linguistic explications and operational definitions. (p. 19)

Even the giants of vocational psychology have had little to say about how interests arise (Holland, 1997; Strong, 1955).

Exploring the natures of interest, interests, and their intersection is worthwhile in itself; folk psychology has thrown down the gauntlet in charging that “there's no accounting for tastes.” Yet this area is also intriguing because it serves as a vehicle for exploring broader questions. What is the personological significance of momentary experience? How do transient emotions develop into enduring aspects of the person? It is one thing to speak of “states versus traits”; it is quite another to specify how traits develop from states. Psychologists have long understood how emotions motivate brief bursts of activity, but we are just beginning to understand how emotions motivate nuclear themes in the life story (e.g., J. Singer, 1998; Tomkins, 1991). Understanding how interest participates in the development of interests promises insights into truly foundational issues.

A second broader issue is the development of unique motives. Modern personality psychology has a lot to say about personal goals and how they influence well-being, achievement, health, and conscious experience (e.g., Emmons, 1999; Klinger, 1971). But this research studies personal motives downstream of the developmental process: How did a particular personal striving come to be floating down in the first place? The same is true for other areas of psychology. We know a good deal about how fully developed attitudes change; we don't know as much about how they initially form. It is easy to predict reactions toward new objects if we know the person's broader values, but it is difficult to specify why those particular values were internalized. The development of interests is a useful paradigm case for studying how idiosyncratic motives form, change, and abate.

This article, then, has three goals. The first is to develop a sketch of interest as an emotional state. What arouses interest, and in what ways is it like and unlike the other emotions? What functions does it play in human development and in the economy of experience? The second goal is to develop a specific conceptual view of interests. What do we, or should we, mean when we say that a person has an interest in something? How do interests differ from related psychological constructs such as attitudes, values, preferences, traits, and motives? The third goal is to consider how interests originate. This complex issue requires considerable unpacking. A framework on motivational development is proposed to organize and evaluate the different theories of interest origination. The following sections address these three issues.

### *Interest as an Emotion*

What do emotions do? There are, not surprisingly, many different answers to such a broad question. A historically popular view was that emotions disorganized the flow of activity (e.g., Young, 1961). An emotional person would cease his or her rational, dispassionate activity and do things unbecoming an enlightened Western citizen, such as attack another person, weep, make spontaneous decisions, and so on. There has been relatively thorough criticism of this view (Arnold, 1960; Leeper, 1948), although variations resurface occasionally (e.g., Loewenstein, 1994). A more modern position argues that emotions primarily provide information to the organism, such as what the person values (Batson, Shaw, & Oleson, 1992) or the person's velocity of goal attainment (Carver & Scheier, 1998). Other traditions emphasize the structure of emotions. Some approach

emotions “from below” by studying the organization of components that subserve all emotions (Ortony et al., 1988); others approach “from above” by exploring superordinate structures that self-reported emotions yield (Carroll, Yik, Russell, & Feldman-Barrett, 1999).

One widely accepted modern perspective is that emotions motivate activity (Izard & Ackerman, 2000). The human animal, by virtue of its self-awareness, language, and intelligence, has more degrees of freedom than any other animal; however, it can only do so much at a time. Cognition can be distributed across different tasks, but gross motor activity is essentially serial; the potential for stasis and conflict is quite high. Thus, our motivational dilemma is not mobilizing for single projects but, rather, choosing a single activity from a set of possibilities (Oatley & Johnson-Laird, 1996). What is needed, then, is a mechanism of signification, something that makes one possibility more important, compelling, and worthwhile than others.

Enter the emotions, the “basic wants and don't wants of the human being” (Tomkins, 1962, p. 21). Emotions are unlearned ways of investing significance in an object. They accomplish this through their invariant and innate rewarding and punishing nature. Happiness is inherently enjoyable, distress is inherently aversive, and so on. If it were otherwise—if the infant had to learn to enjoy the feeling of happiness, for instance—emotions wouldn't be very effective mechanisms of signification. Because happiness is inherently enjoyable, it can stamp its rewarding quality on activities and ideas, which then become important and significant to the organism. It is through prioritization that emotions can serve as “the primary motivational system” (Tomkins, 1962, p. 6).

The strong form of the motivational perspective assumes that emotions are the only source of motivation; any other motive is ultimately organized around one or more of the emotions (Tomkins, 1987). The “fear of death,” for example, would be viewed as a network of ideas given significance by the emotion of fear, not a distinctly unique motive. This is a radical and integrative way of thinking about psychology's long list of isolated motives, such as social exclusion, uncertainty reduction, achievement, distinctiveness, and affiliation. We do not need to commit to this strong view to use the motivational perspective (Magai & McFadden, 1995), although later it is considered as a way of explaining the role of interest in the origins of interests.

The motivational position also assumes that emotions have a basic, discrete character. Whereas emotions might be described in dimensional terms, emotions themselves are not constituted by quantitative variations on shared dimensions (Malatesta, 1990). The exact number of different emotions is unclear; emotion theories have been criticized for their lack of consensus (Ortony & Turner, 1990). Yet most discrete emotions theories agree on a core group of emotions—interest not being one of them—and diverging views aren't a serious problem because they reflect diverging taxonomic starting points (Griffiths, 1997). Using different criteria—such as facial expressions (Tomkins, 1962), neural circuits (Panksepp, 1998), and nonpropositional occurrence (Oatley & Johnson-Laird, 1996)—will produce different taxonomies.

Establishing whether or not something is an emotion is thus a theoretical enterprise. Research can show whether or not the state meets the theory's criteria, but it cannot demonstrate something's inherent “emotion-ness” (Griffiths, 1997). The solution is to be explicit about what criteria are used so that later work can evaluate the taxonomic project. For interest, I use the modular view of emotions that is found in modern emotion psychology. In this approach, an emotion is defined as a psychological and biological category with a constellation of features, no single one of which is sufficient for its taxonomic classification as an emotion (Griffiths, 1997). The goal of this section is to argue for interest as a basic emotion by sketching a portrait of interest's main components. I first show what research has to say about interest in relation to developmental functions, facial expressions, subjective feelings, and personality processes. Then I consider some discriminations that have been made between interest and other emotion concepts.

### **Functions of Interest**

*Curiosity is hardly ever idle.* (John Holt, 1967, p. 187)

The functional aspects of emotions in the organization of activity (Oatley & Johnson-Laird, 1996) and in child and adult development (Abe & Izard, 1999) are possibly the most important components of emotions (Keltner & Gross, 1999). Interest's function is to support "the necessary and the possible" (Tomkins, 1962, p. 342); it helps develop the things that people need and widens the range of activities within their grasp.

The most needed aspect of "the necessary" is competence. The newborn human is born with few skills and little knowledge (Spelke, 1994). Developing the ability to deal effectively with the world is thus the primary task of early life (White, 1963, 1972). Developmental research shows that signs of interest appear in newborns only a few hours old (Izard, 1977, 1978); facial and physiological correlates of interest appear in infants as young as 2 months (Langsdorf, Izard, Rayias, & Hembree, 1983). This research typically assesses how infants respond to novel or discrepant information. Like adults, infants direct their gaze toward moderately discrepant stimuli; nondiscrepant and highly discrepant stimuli receive less attention (McCall & Kennedy, 1980; McCall, Kennedy, & Applebaum, 1977; Super, Kagan, Morrison, Haith, & Weiffenbach, 1972). This inverted-U function has been found across different modalities (Kinney & Kagan, 1976) as well as age levels within infancy, gender, experimental tasks, and various individual differences (McCall & McGhee, 1977).

Attending to unusual information has key developmental benefits for the infant. Piaget (1954/1981) argued that interest was the primary affect of early life because it motivated encounters with the world. Increased experience afforded opportunities for existing cognitive structures to be modified or conserved on the basis of new information. By attuning the infant to the discrepant and novel instead of the predictable and familiar, interest increased the chance that mental systems would change and articulate and thus promoted cognitive growth. New and discrepant experiences also promote forms of physiological growth. Some sensory and cognitive systems, such as the visual system, will fail to develop fully without active and diverse use (Thompson & Schaefer, 1961). Fully developed systems can also deteriorate and suffer irreparable damage if deprived of diverse stimulation (Riesen, 1961).

Interest aids "the possible" by thwarting other motives. As noted earlier, the motivational perspective on emotion assumes that emotions help resolve action conflicts by prioritizing certain possible actions over others. Activity would be too inflexible without counterweights to negative emotions. People wouldn't accomplish much if they always retreated at the first hints of danger, difficulty, hunger, or sleepiness. Interest serves a "constructive antagonism" function by acting as an "approach" urge that competes against "avoid" urges such as potential failure and anxiety. Sansone and her colleagues (Sansone & Harackiewicz, 1996; Sansone, Weir, Harpster, & Morgan, 1992) found that when people needed to complete a boring activity, they used strategies intended to enhance the interestingness of the task. This presumably buffered against other motives that would interfere with task completion.

Interest further supports "the possible" by promoting the continuous development of knowledge and skills. Humans don't board up the mental windows on passing their prime reproductive years; competence continues to be a by-product of interest throughout life. These continuing competencies widen the range of possible goals within one's grasp. There is simply no contesting that interest creates more efficient seeking, learning, and organization of knowledge (Dewey, 1913; Hidi, 1990; Reeve, 1996; Schiefele, Krapp, & Winteler, 1992; Voss & Schauble, 1992). This is why Tomkins (1962) concluded that "there is no human competence which can be achieved in the absence of a sustaining interest" (p. 343).

Fredrickson's (1998) "broaden-and-build" model of positive affect echoes and articulates these ideas. She noted that interest, like other positive emotions, has no obvious functional relations to immediate adaptational crises. Interest doesn't save one's life, energize fight or flight, or keep one toeing the moral line. In fact, interest can be a strikingly frivolous emotion with potentially detrimental short-term consequences. Fredrickson argued that the frivolity of interest subserves serious psychological functions: Curiosity about the new and the possible broadens our experiences, attracts us to new possibilities, and consolidates our knowledge and skills. The broaden-and-build model's argument, then, is that interest is essential to the organism's long-term adaptational project, not merely to momentary crises.

Finally, an emerging research area in gerontology suggests that the interested life might be the longer life (e.g., Daffner, Scinto, Weintraub, Guinessey, & Mesulam, 1992; Swan & Carmelli, 1996). Older adults who display curious engagement with their environment—pursuing hobbies, wrangling with crossword puzzles, and the like—live longer and are less likely to develop degenerative diseases of the central nervous system. Researchers argue for a “use it or lose it” principle: Interested activity might sustain the health of the central nervous system because it engages the person in active construction and organization of cognition (Swan & Carmelli, 1996). Other studies have shown that interests assist older adults in adjusting to and enjoying retirement (Mishra, 1992; Pahkala, 1990). Although this work is preliminary and highly speculative, it meshes nicely with the broaden-and-build approach to interest (Fredrickson, 1998; Fredrickson & Branigan, 2001) and life span perspectives on emotions (Abe & Izard, 1999).

### **Facial Expressions of Interest**

A key component of an emotional response is patterned, involuntary facial movement. There is a massive literature on facial expressions (Ekman & Oster, 1979; Izard, 1977; Owren & Bachorowski, 2001), but there is very little research on facial expressions associated with interest. Tomkins (1962) and Izard (1971) speculated that interest involves either slightly lowered or raised eyebrows, raised lower eyelids (to sharpen visual focus), and parted lips and a dropped underjaw, although empirical evidence is sparse. In an early study of interest expressions, Wallerstein (1954) asked participants to listen to a story three consecutive times. As a testimony to the induction's effectiveness, several participants fell asleep during the later repetitions. Movement of the frontalis muscle, which controls forehead and brow movements, became successively less intense as the story repeated. In a more comprehensive study, people watched interesting or uninteresting films (Reeve, 1993). Facial actions associated with interest included increased head stillness, a slight parting of the lips, a widening of the eyelids and greater exposure of the eye's surface, and fewer glances away from the interesting object. A later study validated these findings by showing correlations between certain facial expressions and intrinsically motivated activity (Reeve & Nix, 1997).

Overall, there is preliminary evidence for an interest facial expression. Future studies need to look for an integrated pattern of expressions; so far, only evidence for single expressive actions is available. Whether or not the isolated actions co-occur is unknown. Later work should also determine whether these expressive components manifest in different sensory modalities. Reeve's (1993) indexes, which are mostly actions that improve visual tracking and acuity, might apply only to visual stimuli. 1 Facial electromyogram measures would help clarify the degree to which visually imperceptible movements contribute to an interest expression. Many aspects of emotional expression are not easily perceived through normal-speed photography. This might be especially true with interest, which is evoked by sudden information discrepancies (Berlyne, 1960, 1971).

### **Subjective Experience**

Like other emotions, interest has a salient and distinctive feeling. As McDougall (1908/1960) observed, “a person who had not experienced [an emotion] could no more be made to understand its quality than a totally colour-blind person can be made to understand the experience of colour-sensation” (p. 61). Izard (1977) nonetheless provided a nice description of the conscious experience of interest:

At the experiential level interest ... is the feeling of being engaged, caught-up, fascinated, curious. There is a feeling of wanting to investigate, become involved, or extend or expand the self by incorporating new information and having new experiences with the person or object that has stimulated the interest. In intense interest or excitement the person feels animated and enlivened. It is this enlivenment that guarantees the association between interest and cognitive or motor activity. Even when relatively immobile the interested or excited person has the feeling that he is “alive and active.” (p. 216)

Interest, in Izard's (1977) view, might be the modal state of consciousness. In the absence of strong negative affect, people are typically experiencing some degree of interest. In this sense, interest is the most basic of the basic emotions. People rarely spend their waking hours without any interesting stimulation; watching TV, reading the T-shirts of passersby, and interacting with others are usually initiated and sustained by feelings of

interest. Even daydreaming, which distances people from the outer environment, cultivates a deeper engagement with internal sensations and thoughts (J. L. Singer, 1966).

### **Inducers of Interest**

What arouses interest? One of the earliest hypotheses comes from McDougall's (1908/1960) discussion of the "curiosity instinct." He argued that "the native excitant of the instinct would seem to be any object similar to, yet perceptibly different from, familiar objects habitually noticed" (p. 49). If the difference became too large, fear resulted instead. Tomkins (1962) later made a similar argument. Interest was said to be activated by a gradient of stimulation that was sharp enough to be noticeable yet flat enough not to evoke fear or surprise (see also Izard, 1977; Nathanson, 1992).

Berlyne's (1960) classic analysis of curiosity remains the most detailed study of the inducers of interest. He was interested in the problem of "stimulus selection," or how an organism directs perception and action at a small portion of the entire field. The core idea in his theory is conflict: "The concept of 'conflict,' as we are using the term, is rather broad. Conflict, in our sense, must accompany virtually every moment of normal waking life in the higher mammals" (Berlyne, 1960, p. 31). Conflict is divided into four "collative variables," so called because they involve collating incoming perceptual inputs with existing information. Novelty reflects conflict between present and past experience and expectation. According to Berlyne, no stimulus is truly novel; novel events induce conflict through their relative equidistance to two or more ways of categorizing and construing an experience. Stimulus change, surprisingness, and incongruity are subsumed under novelty. Complexity reflects conflict between different part-whole organizations and construals of the total complex stimulus. Different facets of a complex arrangement might also call for conflicting acts. Uncertainty is conflict resulting from incompatible actions implied by incomplete and thus ambiguous information; it is mathematically specified through information-theory equations (Attneave, 1959). And conflict refers to the simultaneous presence of noncompatible possibilities, broadly considered. Berlyne viewed these four variables as intertwined; he occasionally defined all four in terms of conflict and then mathematically redefined them in terms of uncertainty through "conflict function" equations (Berlyne, 1957, 1960, chap. 2).

Berlyne first argued that conflict resulting from these stimulus properties creates arousal within the reticular arousal system. The heightened arousal, in turn, leads to feelings of curiosity and exploratory behavior. Berlyne assumed that very low as well as very high levels of conflict create high arousal. If conflict is too low, the organism will begin "diversive exploration" aimed at increasing conflict and thus reducing arousal. This usually involves a more or less haphazard search for suitably arousing stimuli; channel surfing is a good example. But if conflict is too high, then "specific exploration"—activity directed at the arousing objects—will be undertaken. Berlyne (1971, 1974b, 1978) and other researchers later revised core assumptions of this theory. All parties seem to agree that novelty, complexity, uncertainty, and conflict can induce interest. They disagree, however, about how these variables eventually influence intrinsic motivation (Fowler, 1965; Hamilton, 1981; Hutt, 1970; Loewenstein, 1994; Nunnally & Lemond, 1973; Reeve, 1989).

### **Interest and Related Constructs**

#### Positive affect

One might argue that interest should be assimilated into happiness. "Being interested in something," in this view, is simply another way of expressing enjoyment in the activity. A positive affect state might explain interest's approach aspect. Any effects of interest on exploration and knowledge seeking would be subsumed under a propensity to seek and pursue the things that have a positive valence (e.g., Lewin, 1935). Research indeed shows that interest and its synonyms load on a common "positive affect" factor along with happiness and its synonyms (e.g., Watson, Clark, & Tellegen, 1988). And, in the parlance of our times, people often use "interest" to refer to enjoyment or preference.

But extensive empirical research suggests differences between interest and enjoyment. Experimental aesthetics research commonly reveals that "pleasingness" and "interestingness" are distinct aspects of aesthetic experience (Berlyne, 1971, 1974a). Berlyne (1970), for example, found that judgments of pleasingness and interestingness

show different relations to novelty. Pleasingness is an interactive function of novelty and complexity. When relatively simple art objects are viewed repeatedly, pleasingness drops quickly to a low level. When complex art objects are viewed repeatedly, they become more pleasing and then eventually decrease in pleasingness. Interestingness, in contrast, is a simple inverse function of novelty: An art object becomes less interesting as the number of exposures increases (Berlyne, 1974c).

Stimulus complexity also differentiates feelings of pleasantness and interestingness. As the complexity of an art object increases, enjoyment of the object increases and then decreases. Interest in the object, in contrast, is usually a linear function of the object's complexity level. When interest does decline, the object requires very high levels of complexity, far more than enjoyment requires before declining (Normore, 1974).

Research on the underlying dimensions of aesthetic judgments also shows differences between positive affect and interest. Crozier (1974) asked participants to rate musical selections on a large set of rating scales. The selections were constructed according to information-theory principles (Attneave, 1959); each piece's informational content could be described mathematically by an “uncertainty” coefficient. A factor analysis of the rating scales revealed two independent factors, one reflecting the piece's “pleasingness” and the other reflecting “interestingness.” These factors also replicated the aesthetic preference pattern found for single-item measures of enjoyment and interest. As music selections became more uncertain, scores on the pleasing factor rose and then fell. Scores on the interesting factor, in contrast, rose linearly as uncertainty increased. In short, people report enjoying uninteresting music and disliking interesting music.

Apart from their empirical differences, interest and enjoyment are conceptually distinguished by their functions. Tomkins (1962) argued that interest leads people to participate in new, uncertain, and complex aspects of the world. Over time, this cultivates knowledge and competence. Enjoyment, in contrast, serves a rewarding function: It associates its inherently positive feeling with an activity. Tomkins believed that interest and enjoyment occasionally conflict, inasmuch as interest leads people to seek new and possibly aversive activities, whereas enjoyment promotes interacting with familiar sources of enjoyment. More commonly, however, an ongoing stream of activity involves a cycle of interest and enjoyment. New problems and discrepancies create interest; resolving these peculiarities creates enjoyment, which reinforces the activity. Research on intrinsic motivation makes a similar assumption; interest initiates exploratory activity, and enjoyment sustains the willingness to continue the activity. Consistent with this reasoning, Reeve (1989) found that feelings of interest and enjoyment had different causes. Interest came from a task's stimulus features—novelty, complexity, and so on—whereas enjoyment came from competent performance on the task.

In summary, there seem to be good reasons for distinguishing between enjoyment and interest. Although they surely intersect, “wanting to know” and “liking what is known” play different roles in the economy of experience.

### Value and importance

The lay usage of “interest” commonly refers to a simple state of incentive or value, as in “I'm only interested in eating out if you're paying” or “If one returns to one's house to discover that it has been ransacked, one might well have an intense interest in discovering who did it” (Ortony & Turner, 1990, p. 318). This usage seems to be what Perry (1926) had in mind when he argued that interest is the cornerstone of all valuation; things are valuable only to the extent that interest is taken in them. Yet the lay understandings of emotion words should always be viewed critically; “ideas” of emotion and “realities” of emotion often diverge (Parkinson, 1995). And, as Mandler (1982) noted, several meanings of interest lurk underneath the lay usage: “Interesting things are not always valued, and valued things are not always interesting. A square coffee cup is probably interesting without being valued, and a properly working tool may be valued without being particularly interesting” (p. 12). By “interest” I do not mean a simple aspect of value or worth, although, like all emotions, interest makes some things more significant than others (Tomkins, 1962). The lay usage of the word curiosity—a motivational state aimed at understanding—is essentially what I mean by “interest.”

Research on discourse processing supports a distinction between interest and importance (Hidi, Baird, & Hildyard, 1982). Texts can contain interesting elements and important elements; interesting elements need not be important, however. In one study, for example, key ideas in a passage about insects were ranked as important to the exposition but not at all interesting. Yet novel ideas about insects were rated as very interesting but not at all important to the passage's purpose or, presumably, to the reader's own goals (Garner, Gillingham, & White, 1989). Experiments on text comprehension also suggest that interesting and important sentences are processed according to different strategies (Shirey, 1992). A consequence is that interesting elements are recalled better than important elements when the two diverge (Garner, Brown, Sanders, & Menke, 1992; Wade, 1992). A study on biographical texts, for example, revealed that people recalled interesting and important ideas as easily as they recalled "seductive details," interesting but trivial information. People recalled both sorts of interesting sentences better than uninteresting but important information (Wade & Adams, 1990).

### **Participation in Higher Order Personality Processes**

A final property that defines an emotion is its participation in higher order personality processes. Many theories assume that emotions shape enduring facets of personality. This view originated with early psychodynamic models (e.g., Freud, 1923), although they were primarily interested in anxiety. Emotion psychologists made similar arguments while allowing more emotions onto the stage (e.g., Arnold, 1960; Izard, 1977; Plutchik, 1962). Tomkins's (1979) "script theory," discussed later, is the most elaborate attempt to relate transient states to enduring personological structures. Yet current researchers, for whatever reason, are not very interested in this aspect of emotion. Unidirectional "emotional dispositions," such as affect intensity (Larsen & Diener, 1987) and neuroticism (McCrae & Costa, 1997), that specify how personality traits influence emotional experience are much more popular. The contemporary emotion–personality intersection thus resembles a one-way street more than a crossing of causal pathways. The next section considers the ways in which enduring interests might develop. Different theories are located within a framework of motivational development, and the more promising approaches are organized into a model of interest origination.

### *Development of Interests*

Why is a person interested in one thing and not another? This simple question has only occasionally aroused the curiosity of personality psychology, although it has plagued vocational and educational psychology. One barrier to the scientific study of interests is the incorrigible lay psychology of interests. As White notes (1972, p. 433), people do not usually think about the origins of their interests: "To the possessor of a strong intrinsic interest in some particular class of objects the fascination is obvious and its origins are of no concern. Interests are among the good things in life that we are disinclined to question." This might be why people typically have no good answer when directly asked. Anne Roe (1946), for example, interviewed 40 famous modern artists. To her surprise, the artists had almost nothing in common except an early interest in art and a lack of ideas concerning the origins of their artistic interest.

A more serious obstacle is that the literature on interest development is like a starburst of ideas: impressive but disorganized. A framework for organizing the different theories is needed. By highlighting the underlying conceptual continuities, psychologists can gain a foothold into the basic ideas and issues. The framework of motivational development used here classifies theories according to the developmental process emphasized. Magnification approaches describe how a motive can develop through the amplification of an existing and qualitatively similar motivational state (e.g., McDougall, 1908/1960; Tomkins, 1991). Transformation approaches, in contrast, are concerned with how new motives develop from qualitatively different ancestral motivational sources (e.g., Allport, 1961; Dewey, 1913). Internalization positions describe how people appropriate motives from the environment, thus changing the external into the internal (e.g., Shibusani, 1961; White, 1963).

Implicit in this framework is the assumption that there are many paths to a developed interest. Some past psychologists have tried to explain the lone origin of interests (e.g., Lent, Brown, & Hackett, 1994; Roe & Siegelman, 1964; Strong, 1955; Thorndike, 1935a, 1935b). We should remember Freud's point that the basic human motives are few and simple, but the developed motivation system is complex and multiply determined.



Certain schools of learning theory, however, are not discussed here. These positions usually account for interest development by invoking chains of secondary reinforcement deriving from the pleasing properties of external incentives (Thorndike, 1935a, 1935b) or from tension reduction (Hull, 1943; Mowrer, 1946). The problems with the behaviorist models of interests, which are simply the usual criticisms of behaviorism, have been described elsewhere (Allport, 1946; Bolles, 1967; White, 1959, 1972). These are respectable approaches to motivational development, but if a theory disavows intrinsic motivation, there is no intrinsic interest to be magnified, transformed, or internalized.

### **Magnification**

Magnification is probably the most obscure of the three forms of motivational development. This class of theories is interested in how new motivational structures develop from qualitatively similar sources. Given additional processes, the original source can become amplified and articulated into a new structure that retains the ancestral structure's core motivational nature. These theories do not posit that the extrinsic becomes intrinsic, for example, or that the external becomes internal; the original and resulting motives retain a core qualitative continuity. Of the three approaches, this is the most concerned with how emotional interest underlies enduring interests.

### Early theories

William McDougall (1908/1960) posited three properties of instincts: the cognitive, the affective, and the conative. The cognitive and conative aspects were modified through experience; people learned a broader range of events that instigated the instinct and ways of responding to an event. The affective aspect, in contrast, remained invariant (both within and across individuals) in its subjective character and motivating function. The “curiosity instinct” was the instinct associated with exploration and learning; “its impulse is to approach and to examine more closely the object that excites it” (McDougall, 1908/1960, p. 49). “Wonder” was the label given to the emotional quality accompanying the aroused curiosity instinct. Instincts and their emotions were the raw materials of the magnification process. Any instinct enabled the development of a sentiment, which was “an organised system of emotional dispositions centred about the idea of some object” (p. 137). Although varying in complexity, degree of organization, and abstraction, all sentiments share a reference to some object and the invariant affective quality of the instinct, which provides the conative urge for the sentiment.

Interests, in McDougall's view, were sentiments derived from the curiosity instinct and its emotion of wonder. Consistent with the heyday of associationism, McDougall thought that sentiments developed through simple repetition. A single encounter with an object that aroused the curiosity instinct would lead to a rudimentary sentiment. Continued encounters would eventually create an articulated and powerful interest sentiment that energized activity relevant to the sentiment. If the person were, for some reason, deprived of later encounters, the sentiment would diminish. Repetition is thus the mechanism in McDougall's theory that magnifies the existing instinct and emotion into a more significant and integrated motive. An essentially similar view was proposed by Shand (1914), although he was less explicit about how sentiments developed.

### Scripting the interesting life

The most detailed model of magnification is Silvan Tomkins's (1976, 1979, 1987, 1991) “script theory” of personality. His earlier “affect theory” serves as script theory's foundation (Tomkins, 1962, 1963, 1981). Affect theory posits a small number of innate, pan-cultural, and evolved emotions that function as the organism's primary motivational system. Emotions motivate activity by organizing activity. A person can potentially do any one of a nearly infinite number of things, yet only a few activities can occur simultaneously. Emotions prevent paralysis by serving as mechanisms of signification; they lend an inherently rewarding or punishing character to the circumstance that arouses the affect. This circumstance can thus override competing signals in the “central assembly,” an executive system that organizes activity by allocating resources from different cognitive, motor, and symbolic systems.

Emotions, in short, are immediate: They amplify a particular object, context, or idea and thus make it important. Script theory is concerned with how immediate emotional experiences develop (and fail to develop) into

integrated guiding motives and ideas. The theory's basic unit is the scene: "In script theory, I define the scene as the basic element in life as it is lived. The simplest, most primitive scene includes at least one affect and at least one object of that affect" (Tomkins, 1991, p. 74). A scene is literally an emotional "slice of life," as subjectively perceived. Many scenes in a life remain completely isolated. People have experienced, for example, many distinct scenes in which they laughed at a joke. These transient scenes remain largely disconnected from other experiences; they thus have little impact on the structure and functioning of personality.

But sometimes scenes become interconnected and develop into scripts, which are sets of rules for predicting, interpreting, responding to, and controlling scenes. A script in this sense bears a close kinship to conventional concepts of scripts and schemas (Schank & Abelson, 1977). Scripts are selective, in that they refer to certain types of scenes; necessarily incomplete, because it is impossible to specify fully what might happen within a scene; and more or less accurate. As a consequence, scripts are subject to constant change and revision from ongoing experience.

Script theory, then, conceives of life as a series of emotional scenes. Some scenes are combined into scripts, which are ways of understanding past and future life scenes. The key question is thus how scripts develop from scenes. This is the phenomenon of magnification, the "connecting of one affect-laden scene with another affect-laden scene" (Tomkins, 1991, p. 75). Magnification is a cognitive process in which scenes are assembled into groups based on shared features. Perceiving the similarities among scenes enables them to be magnified into a script. The script's "rules" (or meanings) are then extrapolated from the category of scenes.

Positive and negative affect are magnified in slightly different ways (L. Carlson & Carlson, 1984). Positive affects (e.g., joy and interest) are typically magnified through the recognition and construction of variants; scenes are connected because they represent small deviations on a core theme or idea. Negative affect (e.g., anger, shame, fear, distress, and disgust) is magnified through the construction of analogs; scenes are connected because of their thematic unity (R. Carlson, 1981). Death of a parent and divorce from a spouse might be combined into a script because they are analogous; they share a theme of the permanent loss of a loved one.

To clarify these processes, consider how a simple "addiction script" could develop through magnification. A person who has been feeling depressed goes to a party and becomes quite intoxicated; the alcohol reduces the negative affect and thus creates enjoyment. Here is a simple scene in which an object (alcohol) replaces negative affect with positive affect. From this point, there are two routes to an addiction script. First, this single scene itself could generate a script if the affect involved was extremely powerful. The second and more likely route is that additional similar scenes are enacted. Because the addiction script hinges on positive affect—the joyful relief resulting from negative affect reduction—variants on this core experience will cohere into an integrated group of experiences. So if the person again relieves negative affect with alcohol or has scenes in which the positive affect is anticipated in fantasized drinking, these additional scenes will be sufficiently similar to combine into a nascent addiction script. This cluster of experience has implications; it suggests things about the objects involved and the world more broadly. In the second aspect of magnification, meaning is extracted from the scenes; in this case, the addiction script suggests that alcohol is a good way to reduce suffering. Transient emotional experiences have thus been consolidated into a stable, guiding idea.

At first scenes determine the development of scripts. Scripts later determine the course of scenes; they impose their interpretive lens over experience and influence the selection and creation of environments. When a person with an addiction script feels anxious, for example, the script specifies effective ways of dealing with anxiety, how and where to procure those ways, the probable outcomes, and so forth. The script thus magnifies additional scenes that are script relevant. Including additional emotional scenes can enlarge the script, which might eventually become monopolistic within the total set of scripts.

How does script theory explain interests? Although Tomkins never specifically addressed interests, they would fall under the category of "affluence scripts,"

which address neither the damages, the limitations, the contaminations, nor the toxicities of the human condition, but rather those scenes which promise and deliver intense and/or enduring positive affects of excitement or enjoyment. These script the sources of the individual's zest for life. (Tomkins, 1991, p. 107)

Affluence scripts specify what the person will find to be fun and interesting. As with all scripts, they begin with a single scene involving an emotion and an object. An interest would develop when an activity arouses the interest affect; perhaps a high school student watches a TV show on forensic science and is interested by how fiber evidence can help catch untidy criminals. At this point, it is impossible to know whether an interest script will develop, unless the experience was so overwhelming as to form a script in itself. But perhaps the student runs across the same show the next week and is interested in how forensic scientists analyze questioned documents. Here we have the rudiments of a script. These two experiences will cohere, given their core similarities, and be magnified by the emotional feelings of interest. A simple meaning emerges from this nascent script: "Forensic science is cool" perhaps, or "This is a neat show."

The student can now predict and anticipate circumstances that will create interest; the script will influence scenes. Should the student feel bored, for example, the script specifies forensic science as a promising possibility for interest and enjoyment. And, of course, this script can expand into a broader, more guiding script if more emotional scenes are added. The student might experience interest while reading a new book on criminal profiling; this set of experiences would be assimilated and further magnify the script. The script might eventually become strong enough to influence major life decisions; the student might decide to apply to colleges with good programs in forensic science. If these years of scenes continue to create interest and enjoyment, the script will influence career selection. But if they do not, the script will change, either by being demagnified (incorporating scenes with relatively minor affect) or by including scenes with opposing types of affect.

#### The selective persistence of interest

Almost anything can be interesting once. Only a few things become endlessly fascinating, and nothing is endlessly fascinating for everyone. A group of people, for instance, might be motivated by curiosity to attend a lecture on James Joyce. Most of them may simply enjoy the lecture and never have anything serious to do with Joyce again. Yet a few people might later read more of Joyce's works, dip into the critical literature, read a biography, and eventually develop a lasting interest in Joyce studies. Such situations are the starting point of Prenzel's (1992) theory of interest development. In his view, the essence of an interest is freely chosen interaction with an object over several points in time. The key question, then, is why people sometimes return to a previously interesting activity and other times never pursue it again. Stated differently, why do people seek out second and third encounters?

Prenzel used a neo-Berlyne approach to address this question. He assumed an initial interest in or attraction to an activity that motivates the person to a first encounter. During the course of this encounter, the person may experience "cognitive conflict": The object might violate aspects of existing knowledge, create uncertainties, pose novelties, or remain complex and not fully understood. What motivates later encounters is the conflict resulting from unresolved discrepancies that the encounter created. At the second encounter, the earlier conflict might be resolved. If no new conflict is created, then the person probably will not seek out a third encounter.

Two aspects increase the likelihood that a person will develop a long-term interest in—that is, repeatedly interact with—an activity. The first is the person's configuration of knowledge. Interacting with an object generally promotes elaborated knowledge of the object. As a person's knowledge becomes richer and more detailed, the capacity for conflict increases because there is more raw material for conflict. Someone new to Freud's ideas would not be particularly curious about a book titled Sigmund Freud and the Jewish Mystical Tradition (Bakan, 1958); it wouldn't conflict with anything. Yet, someone familiar with Freud's pro-science, anti-religious rationalism—"where once was Id, Ego shall be" (Bakan, 1958, p. 38)—would feel a good deal of conflict and uncertainty on hearing of Freud's ideas in relation to ancient Kabbalistic texts. An interest can thus sustain itself by promoting the complex knowledge needed to ensure continued conflict.

The second aspect is the nature of the activity. Few concrete objects can continually produce new cognitive conflict; this is why people rarely develop interests in single objects. A person might find a new computer interesting for a while, but it is hard to develop and sustain a long-term interest in a single computer. The computer's properties would become increasingly comprehensible and predictable until no novelty or uncertainty remained. "Computers in general," however, is a possible interest because the shifting of technologies provides novelty, complexity, and uncertainty. Modern art provides literally unlimited opportunities for novelty and complexity—a specific art poster does not.

A similar logic applies to interests involving skills and competencies. Many areas are like "games without frontiers"; they have no ceiling on the amount of possible mastery. Once a magician masters one sleight-of-hand trick, there is a slightly more difficult trick waiting. A golfer's strokes can always get a little smoother. Each newly read book exposes more gaps in knowledge. Interests are sustained because each awaiting step introduces novelty, conflict with existing knowledge, and uncertainty concerning the task and one's ability. One's knowledge also becomes increasingly complex, which enlarges the capacity for conflict and enables multiple perspectives on the same information.

A strength of Prenzel's view is that it can address why interests sometimes wither and die. There might come a point at which each new book does not open any new gaps in knowledge. People could (and do) spend entire careers devoted to Shakespeare studies. Someone probably couldn't devote a career to a single minor writer because there wouldn't be much to know. If a person's expertise is extremely high, he or she might hit the "conflict ceiling." When all of the elements are known and related in organized and predictable ways, the object's pool of conflict has dried up.

In summary, Prenzel posited that interests consist of repeated experiences of interest in relation to an object. Conflict is the mechanism that magnifies emotional interest into a long-term project involving increasingly articulated knowledge and expertise.

## **Transformation**

Transformational accounts of motivational development are concerned with how new motives arise from ancestral motives that differ in some significant way. This area is usually described as the study of secondary (Brown & Farber, 1968), derived (Bolles, 1967), or acquired (Miller, 1941) motives. Unlike magnification, in which nascent states of interest are developed into full-fledged interests, transformation theories describe how interests develop from motivational sources not involving previous interest. The qualitative nature of the motive has thus been changed during the development of the interest.

### Early theories

John Dewey (1913) proposed one of the first models of interest development. He assumed that people will be interested in certain activities, such as playing the guitar. New interests develop when people recognize that an activity furthers an existing project of interest: "Anything indifferent or repellent becomes of interest when seen as a means to an end already commanding attention" (Dewey, 1913, p. 25). Learning to read sheet music, for example, ceases to be a tedious task when its relevance for the guitar is realized, and it will eventually become an interest in its own right. This general idea prefigured Gordon Allport's (1937, 1961) theory, which assumed that extrinsic motives gradually become self-sustaining and "functionally autonomous." But neither Dewey nor Allport was very specific about how motives transformed.

### Cognitive dissonance theory

American business schools commonly encourage their students to take up golfing as an avocation. What begins as a pragmatic career move commonly results in a genuine interest in golf that persists throughout the life span. Golf neophytes find themselves buying expensive clubs and ancillary gadgets, paying green fees, waking up early on the weekends, and spending time participating in what is initially a difficult and frustrating endeavor. Such cases are interesting to cognitive dissonance theory, which describes how cognitive consistency motivation influences behavior and attitudes (Festinger, 1957; Wicklund & Brehm, 1976). An aversive state of

dissonance arises when two cognitions are involved in an inconsistent relationship; the negative state motivates activity aimed at restoring consistency. The novel element of dissonance theory that sets it apart from other consistency theories (e.g., Heider, 1958) is that it specifies the route of consistency restoration by invoking a “least effort” principle. Because actions are frequently irrevocable, people often reduce dissonance by changing their attitudes or reconstruing their reasons for engaging in the behavior.

The cause of dissonance implicated in the golfing example is the investment of effort or discomfort in an activity. Because negative aspects of an activity are inconsistent with the investment, people will increase the subjective value and attractiveness of the activity. This was demonstrated in a classic experiment by Aronson and Mills (1959). College women were asked to join a discussion group on sexuality. Some of the women had to undergo an uncomfortable procedure—reading explicit sexual material to a male experimenter—to join the group. The participants then listened to the discussion, which was designed to be tedious and boring.

Participants who experienced discomfort to join the group rated it as more interesting and enjoyable than those who joined the group without an initiation procedure. Later studies have replicated this effect with other procedures (Gerard & Mathewson, 1966). Interestingness can thus result from participating in tediousness. Another experiment had people fish for flashlights containing money or no money (Aronson, 1960). The fishing task was either very easy or quite difficult. When the task was difficult and thus effortful, people preferred the color of the flashlights that did not contain money. This effect presumably reflects one mode of reducing dissonance. If people invest effort to get something but receive no external reward, dissonance will be created. People can restore consistency by transforming their attitudes toward the object so that the object becomes intrinsically rewarding. Although preferences are not identical to what is meant by interest, this study nicely shows how an absence of extrinsic incentives can increase the intrinsic value of an object.

A experiment conducted by Weick (1964) directly shows how dissonance can be reduced by increasing the subjective interestingness of an activity. He argued that when a task offers no extrinsic reward, people will justify their effort by increasing the value and interestingness of the task. This increased value should then lead to greater effort, which may validate the increased value by resulting in greater performance. Participants worked on a concept formation task and rated it in terms of interestingness. One group simply completed the experiment and received credit. The experimenter told people in the second group that he was no longer allowed to give credits because he had disregarded several admonitions from the participant pool coordinator; nearly everyone agreed to participate nonetheless. Weick found that the group without an external incentive expended more effort on the cognitive task, performed better on the task, set more reasonable goals, and rated the experiment as significantly more interesting and self-relevant than the group that received the external incentive.

In summary, investing in an activity (Aronson & Mills, 1959; Gerard & Mathewson, 1966) and lacking external incentives (Aronson, 1960; Weick, 1964) can lead people to experience an activity object as more interesting. Cognitive dissonance can thus be viewed as a transformational mechanism that reconfigures the influence of external incentives on intrinsic motivation.

### **Internalization**

Internalization is the process by which “the structures of society become the structures of our own consciousness” (Berger, 1963, p. 121). Products of the social world—such as ideas, attitudes, and roles—are appropriated as the person's own ideas, attitudes, and roles (Berger, 1967), thus creating a self-regulating person who requires less social monitoring and control. Because motives, values, and reasons for acting more broadly can be internalized (Wicklund, 1986), internalization is another path of motivational development.

### Psychoanalytic positions

Internalization is a core concept in all psychoanalytic thought, yet its nature remains controversial (Schafer, 1968). Freud's original perspective assumed that much of the superego is internalized in the service of anxiety reduction. By appropriating the parents' values and self-regulating accordingly, the child could become more

similar to the parents and thus reduce anxiety associated with the castration complex. Internalization also occurs during uncertainty and necessity, such as when the ego introjects an idea to reconcile competing demands. It appears that Freud's view offers little to a theory of interests because it is unclear how a genuine, for-its-own-sake interest would be appropriated from the environment during stressful and conflicted conditions. If fear is antagonistic to interest (Berlyne, 1960; Tomkins, 1962), then this whole approach seems unlikely. And in some ways the point is moot, given Freud's skepticism of truly intrinsic motivation (White, 1959, 1963).

Later perspectives from post-Freudian ego psychology involved an expanded approach to internalization. White (1963), for example, argued for a conflict-free realm of activity in which the ego employs its own energies to further its growth and development. The ego, in this view, has its own project of growth apart from its classic Freudian steering and negotiation functions. Ideas and activities can thus be internalized in the absence of anxiety or uncertainty if they further the ego's own developmental project. A modern incarnation of these ideas is the self-determination approach to internalization (Deci & Ryan, 1985). The underlying ego project, in this theory, is the cultivation of competence, self-determination, and relatedness. Certain activities are internalized as interests if they can further the fulfillment of these needs (Deci, 1992). This might be why interests are so frequently interpersonal, freely chosen, and competence building.

### Symbolic interactionism

The symbolic interactionist school of sociological thought has a very different perspective on internalization (Berger, 1967; Mead, 1934; Shibutani, 1961). Internalization of the reference group's standards is simply what people do when they are born into a micro-culture of socially created, shared, and transmitted meanings and symbols. Appropriating ideas forms the core of the socialization process whereby an identity is established and the person begins to locate the self within society (Berger, 1963; Mead, 1934). But not all meanings and symbols are equally valued. People are especially attuned to the perspectives of significant others (Mead, 1934) and reference groups (Shibutani, 1961). The values, ideas, and activities that characterize the other or the group are most likely to be internalized into the person's own perspective.

Recognizing the differential importance of social groups enables symbolic interactionism to make predictions about why people develop interests in some things and not others. Simply stated, this approach would argue that activities that are valued by the person's social group will be internalized as interests. Although interests can be truly idiosyncratic, they are often socially shared and transmitted. Indeed, many reference groups are defined by a communal interest, such as an informal chess club, a weekly reading group, or an academic association. Specific interests are also associated with particular roles. As individuals acquire and participate in new social roles, they tend to internalize and manifest the corresponding interests (Shibutani, 1961).

Of course, social groups do not exert a monolithic and unidirectional influence on the individual. Socially promulgated roles and ideas are "inherently precarious" (Berger, 1961); even the most entrenched social ideas depend on the arriviste's participation for continued survival (Berger, 1967). Without a person's emotional investment in the activity, without actual feelings of enjoyment and interest, it would be difficult for the reference group to socialize new members into its culture of interests. Indeed, people often leave reference groups—such as college majors and professions—because the groups' activities simply are not personally interesting (Holland, 1997).

### *An Integrated View*

Thus far, I have described the most promising theories within the magnification, transformation, and internalization models of motivational development. Now is the time to integrate the theories into an organized model of interest development. Figure 1 describes the configuration of an integrated view. The first assumption is that the emotional experience of interest can be brought about in several ways. In the internalization path, a person might initiate an activity because it is expected, role consistent, congruent with an ego project, or congruent with any of the aspects of internalization discussed earlier. The person might then find the activity interesting. In the transformation path, an activity might become interesting as a result of a transformation of the reasons for doing the activity. We saw earlier, for instance, how cognitive dissonance processes can lead people

to experience a task as interesting when they exert effort for no obvious reason (Aronson, 1960; Weick, 1964). Finally, Berlyne's collative variables refer to the stimulus properties that arouse interest (Berlyne, 1960, 1971; Nunnally & Lemond, 1973). Something might be interesting because it is uncertain, complex, novel, or inconsistent with existing information.

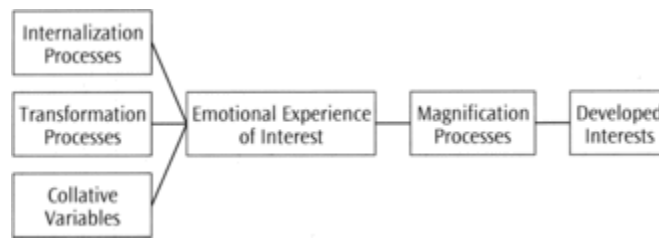


Figure 1. Pathways of development of interests

Yet, regardless of how interest arises, mere emotional interest itself will not lead to fully developed interests. Interests might have their distal roots in cognitive dissonance processes, internalization, or stimulus configurations, but the emotion of interest and its subsequent magnification are required for the development of interests. Magnification is thus the central aspect of interest development. The magnification aspect of Figure 1 is intended to represent repeated encounters with the activity. A script is further magnified by the inclusion of interesting scenes or demagnified by the inclusion of frustrating, shameful, distressing, or boring scenes.

The two magnification theories discussed earlier—Tomkins's script theory and Prenzel's selective persistence theory—make very similar predictions about magnification but have very different views of what it means to have an interest. Script theory connects interest to interests through emergent knowledge. As interesting scenes are connected and magnified, the person comes to understand that certain activities and ideas will create feelings of interest. The interest script then influences activity through this knowledge, such as when a person buys a new book because he or she expects (on the basis of past experience) that it will be interesting. Whereas script theory views an interest as a knowledge system that enables predictions, Prenzel's model implies that an interest pulls the person from encounter to encounter with its ceaseless conflict. When an activity ceases to produce conflict, novelty, or uncertainty, it ceases to be interesting and, hence, ceases to be an interest. Yet both theories assume that repeated experiences of interest underlie interest development. Script theory has the advantage of explaining motivational development more generally. This enables interest development to be located within the development of other idiosyncratic motives, such as attachments, phobias, and values (Magai & McFadden, 1995). Although lacking these conceptual continuities, Prenzel's theory has the advantage of being simple, readily comprehensible, and amenable to empirical research.

The core of this approach, then, is that all paths to a developed interest rely on the emotion of interest. If interest is not experienced in the context of an activity and magnified over time, an interest will not develop, regardless of why the feelings of interest arose in the first place. Other positions would disagree with this. Theories that tie interest development to the expression of organismic needs (Deci, 1992), for example, would argue that felt interest is subordinate to need satisfaction. Likewise, dissonance theorists have suggested that avocations develop because people need to justify sustained investments in an activity (e.g., Weick, 1964). The present model, in contrast, argues that emotional interest fully mediates any effects a process might have on the development of interests. Need satisfaction and self-justification can create an interest only inasmuch as they can create feelings of interest that are subsequently magnified. This strong claim invites future research.

I should note that the structure depicted in Figure 1 could serve as a general model of how emotions participate in motivational development. The antecedent conditions describe how an emotion occurs initially: through internalized and appropriated ideas, transformations of other motivations, or innate inducers of the emotion. Once the emotion occurs, it must be magnified into scripts. These then guide future emotional scenes with the activity, which further affects the script, and so forth. Thus, attachments, phobias, and other emotion

dispositions can be understood as conceptually continuous with interests. A detailed analysis of these dispositions, however, is beyond the scope of this article (for detailed discussions, see Haviland-Jones & Kahlbaugh, 2000; Magai & McFadden, 1995; Malatesta, 1990).

Finally, this approach to interest and interests is founded on a “discrete emotions” perspective on emotion (Ekman, 1992; Izard, 1977; Tomkins, 1962). Without the assumption that interest is a basic emotion with motivational properties, the entire approach collapses. The discrete emotions perspective certainly is not the only position on emotion, although it is empirically sensible and theoretically coherent (Griffiths, 1997). Other perspectives on emotions would surely involve very different ideas about what interest means and how interests are constituted, although one can only speculate about what they would be. Given the dearth of theorizing on interest and interests, a basic emotions perspective seems to be a promising place to start.

### *Conclusion*

Consistent with past and emerging theories of positive emotions (Fredrickson, 1998; Tomkins, 1962), I have argued that interest is a basic emotion with significant long-term adaptational functions; it cultivates knowledge and diversifies experience at all stages of life. Interests are one of the products of emotional interest. These enduring intrinsic motives lend meaning and frivolity to personality while covertly building skills and expertise. I have suggested that interests can develop through several conceptual pathways, although the experience of emotional interest is foundational to all developed interests. Much of the evidence is speculative—research on interest lags far behind research on other emotions—but perhaps the conflicts and uncertainties will arouse psychology's meta-interest.

### *Footnotes*

1 Research on daydreaming has shown that when people are involved in daydreams—and thus are presumably interested in the stream of self-generated imagery and narrative—they usually fixate their gaze on an immobile part of the environment and keep their head and eyes perfectly still (Antrobus, Antrobus, & Singer, 1964). Presumably, people do this to make it more difficult for external stimuli to enter the visual field and derail the daydream. This suggests indirect support for Reeve's facial expressions of interest using a different type of interesting stimulation.

2 More precisely, the magnification of a script would equal the number of scenes multiplied by affect density, with both divided by the simplicity of the meanings, or rules, that are formed in the script (Tomkins, 1991, p. 80). By this equation, a lone scene might form a script if it is deeply emotional and has a simple interpretation (e.g., the world is bad, alcohol is good). Such rare cases usually involve traumatic events.

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