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6 Future Directions

6.1 Some Thoughts About the Development of a Unifying Framework for the Study of Individual Interest

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The theoretical and empirical work on interest presented in this volume represents a cross-section of current research based in developmental and educational psychology. The expansion of this field of research within the last fifteen years has led to an increase in the variety of theoretical and operational definitions of interest and to new research approaches (cf. Krapp & Prenzel, 1992; Krapp, 1998; Renninger, Hidi, & Krapp, 1992; Schiefele, 1996).

Given that interest as a theoretical construct was largely overlooked for almost 50 years, this development is exciting. It is also a problem because when research about a certain topic 'takes off', the basic theoretical concept is often used to describe and explain many different phenomena, some more consistent with original conceptualizations than others. This problem is neither new (cf. Berlyne, 1949; Lunk, 1926), nor is it specific to the domain of interest research (Krapp, Hidi, & Renninger, 1992). The same difficulty characterizes other fields of psychological research, in both relatively broadly-defined domains like motivation, learning, and memory, and in seemingly narrowly defined domains like curiosity, attention, and arousal. There is some benefit in this, of course, since new interpretations can serve to refine prior definitions; however, difficulties arise when the use of a term such as 'interest' in the vernacular is conflated with its use in behavioral science (cf. Valsiner, 1992). In such cases, new interpretations do not build on prior findings, but instead emerge from common usage. In fact, the indiscriminate use of a term such as interest can have a negative impact on what are understood to be its correlates and effects.

Can differences in conceptualization be overcome? At present we propose that it would be useful to develop a theoretical construct that would refer to different aspects of interest-related phenomena. We are not convinced that it is either necessary or desirable to limit the

meaning of interest to only one specific aspect in order to have a single, commonly shared definition. Instead, a theoretical framework is needed to distinguish between important aspects of an overarching interest construct and to provide a theoretically grounded basis for a variety of research approaches. Such a framework would provide a basis for discussion not only within the field of interest research but also across fields in which interest is studied in different ways and for different reasons (e.g., research on motivation and learning, curriculum, development, or gender).

In thinking about the usefulness of such a framework we appreciate that research questions emerge from the prior knowledge the researcher brings to a field. Differences in scholarly pursuits lead to differences in the kinds of questions that are asked, the contexts that are studied, and the methods that are used to assess interest. Furthermore, differences among researchers exist as a function of their readiness to work with interest as a complex construct, especially when interest for them is only one among several variables. Thus it seems useful to accommodate heterogeneous usage of theoretical concepts in the field of interest research.

This paper takes up the questions of the possibility and the necessity of a unifying framework. Existing conceptions of individual interest are described in terms of their theoretical roots, and the aims of a theoretical framework for studying individual interest are then considered.

Conceptions of Individual Interest

Situational interest and individual interest have been suggested as two possible conceptualizations of interest (Krapp et al., 1992; see also Renninger, Hoffmann, & Krapp¹). These are broad, useful categories for thinking about interest, especially in relation to the topics of learning and development. Briefly, individual interest is a relatively enduring tendency or disposition of a person to engage particular classes of objects, events, or ideas, whereas situational interest is a characteristic of the subject (person) that is caused by stimulating conditions of the situation (i.e., interestingness of the situation) drawing attention over a shorter or longer period of time to an identified object of interest (see discussions in Hidi & Berndorff; Rathunde; Renninger et al.). In keeping with the topic of this volume, the focus of the present discussion is individual interest.

1 Citations without an indication of year refer to chapters in this volume.

In fact, ideas about the function and effects of individual interest vary considerably, even though researchers agree that the phenomenon they call individual interest is relatively enduring. These ideas range from the role of topic-related interests as motivators of learning, change in the function of interest across the life span, and differences between boys and girls in what is identified as interest at different ages, to the implications of embedding interests in school tasks, TV programs, video disc environments, or museum education.

Research Questions

Research on individual interest also involves a range of questions, including analyses of individual interest(s) within and between groups of individuals, evaluation of the outcomes or effects of interest(s) on learning and development, and the conditions and processes responsible for the outcome of both interest-based learning and the development of interest(s), and gender specific conditions of interest-based learning and development.

Research into the classification of interest(s) has largely focused on interindividual differences, for example by age group. Interest(s) have also been evaluated relative to the range of activities in which the individual is involved (cf. Renninger), and in relation to specific content-related preferences (e.g., physics) and topic interest (the study of heart pumps in physics class, see Häussler & Hoffmann). Such studies have been conducted in preschools and kindergartens, elementary and secondary schools, vocational settings, and in the context of leisure-time activities.

Questions that pertain to outcomes or specific effects of interest refer to the function and effects of interest on learning and development. This type of question characterizes studies of situation-specific tendencies of learning behavior (attention, learning strategies, task persistence), as well as relatively long-lasting influences on cognitive processing (knowledge-acquisition, academic achievement) and personality development (self-concept, self-worth, successful identity formation).

Finally, questions that address the conditions or process of interest refer to a series of rather complex considerations, such as the role of interest in human development, or the relation between structure and change in a person's interests (Krapp & Fink, 1992) and/or his or her self-concept and identity (Gisbert; Hannover). Such questions can address emerging interests and age-related changes in the interests of

groups of children and students (for mathematics, see Eccles, Barber, Updegraff, & O'Brien; for younger children's pursuits, see Fölling-Albers & Hartinger). They can also lead to models and research about the conditions that are helpful for developing stable interests in a specific content area and the circumstances that might lead to their disappearance with respect to both inter-individual (Todt & Schreiber; Hoffmann & Häussler; Wild, Krapp, Schreyer, & Lewalter) and intra-individual (Hannover; Renninger) circumstances.

Each of these types of research questions implies theoretically (and metatheoretically) founded and empirically tested considerations of individual interest, as well as the development and selection of specific procedures to measure interest-related variables. A complication for this literature, however, is that discussions of these implications typically are not articulated for readers. This situation can promulgate misunderstanding, especially in situations where findings from one researcher's study of 'interest' are 'theoretically related to' the findings of researchers who use the same terminology, and therefore appear to be addressing the same questions. A closer look at the theoretical basis of their work, however, can reveal that their efforts refer to different interest-related phenomena. This may occur because their concepts and methods derive from different traditions of educational and/or psychological research and, as such, reflect different theoretical paradigms (Kuhn, 1970; Cronbach, 1957; Valsiner, 1992).

Theoretical Paradigms

The assumption that others share an understanding of the meaning of 'interest' is not surprising. The term interest is in common usage, and for this reason its operationalization across projects has some overlap with this usage. Furthermore, within research traditions a shared basis for asking questions, conducting analyses, and interpreting findings may appear to belie the need to explain conceptual and operational decisions. Lack of information about such decisions, however, can lead to misunderstandings, especially when researchers schooled in one tradition endeavor to map their findings onto work from another tradition.

In characterizing the nature of the questions being asked and the complexity that differences of tradition represent, three of the more common bases for research on interest are overviewed. These include the study of interest as habitual preference (or attitude), interest as motivational belief, and interest as a characteristic of the developing self (or personality). These bases are identified here for the purpose of

untangling complexity. In reality, the traditions identified overlap, and aspects of a particular researcher's work may well cut across them.

Interest as Habitual Preference (or Attitude)

Research that addresses interest as a habitual preference, disposition (Pekrun, 1988), attitude, and/or trait typically focuses on the classification, measurement, and description of interest in order to (a) characterize the pattern of motivational learning conditions of an individual or groups of individuals, (b) explore the relation between measures of interest and outcome-variables (e.g., academic and vocational achievement), and/or (c) predict future success or failure in educational and vocational settings. This line of research has its roots in questions being addressed by vocational interest researchers (Holland, 1973; Strong, 1943; Super & Crites, 1962), as well as discussion about interest as an important component in the structure of personality (Allport, 1937; Guilford, 1959; Lersch, 1962). In more contemporary work, studies have focused on interest as a predictor of achievement (Todt, 1978; Sjöberg, 1984; see reviews by Gardner; Schiefele, Krapp, & Winteler, 1992) or developmental change in interest in specific domains of knowledge (e.g., Todt, 1978; Gardner).

In school-related research, interests studied as habitual preferences or attitudes are often analyzed with respect to age, level of schooling, and school subject matter. Accordingly, students might be asked about the subject in which they are most interested: math, physics, social studies, etc. Such domain-specific preferences can be studied at different levels with respect to the way in which instruction is conducted, for example at the level of the general knowledge-domain of a subject (e.g., physics compared with biology or mathematics), or the level of specific topic areas within a domain (electricity or mechanics in physics). In fact, a differentiated picture of an individual's interest may be evaluated most aptly by assessing the preferences of the student, the kind of activities in which these are present, and the context in which the content and problems are discussed (see Hoffmann, Häussler, & Peters-Haft, 1997; Hoffmann & Lehrke, 1986; Renninger). The role of friends, parents, or other teachers in informing interest can also be considered (cf. Eccles et al.; Fölling-Albers & Hartinger; Gisbert).

In vocation-related research, similar questions apply. Vocational interest-tests, for example, are designed to measure relatively stable preferences with respect to the requirements of generalized vocational situations (Todt, 1978; Athanasou). Thus, interest becomes important for

personnel selection (Holland, 1973), as well as in fostering job-related qualifications (Prenzel, Kramer, & Drechsel; Wild et al.; Todt & Schreiber).

Interest as Motivational Belief

A second approach to the study of individual interest is closely connected to theories of motivation. From a cognitive perspective, motivation is interpreted in terms of an expectancy-value model, the explanation of why a person acts in one way rather than another (Heckhausen, 1977; Pintrich & Schunk, 1996). This framework originally functioned to provide a model for exploring and describing the process of intention-formation (Heckhausen, 1991). More recently it has been used to identify motivational dispositions (motivational beliefs: see Eccles, 1983; Pintrich & Schunk, 1996; Boekaerts, 1996; Pekrun, 1990).

Two kinds of research into the question why a person acts in one way rather than another are now being pursued. The first explores generalized expectancy components such as self-perceptions of competence (Helmke, 1992), self-efficacy (Schunk, 1991) or achievement-related aspects of a student's self-concept (Byrne, 1986; Krapp, 1997) and the implications of these motivational dispositions for performance (Eccles, et al.; Kreidler & Nussbaum). The second refers to individuals' generalized value-orientation or "task value beliefs" (Eccles, 1983; Pintrich & Schunk, 1996). Here, an interest is interpreted as a domain-specific "personal goal" that has gained dominance in somebody's goal structure, or as an "intrinsic" task value, defined as the enjoyment people experience when doing a task that refers to a content or object they appreciate (Wigfield & Eccles, 1992).

In some cases, when interests are studied as motivational beliefs they may also be construed as relatively enduring situational interests. Such studies, for example, have focused on the implications of the content and process of instruction for the emergence of a motivational disposition. They reflect a concern to move discussions from model building to specifications that can be implemented in practice (see discussions by Hidi & Berndorff; Nenniger; Rheinberg). They have addressed the learning of mathematics using video-discs (Goldman, Mayfield-Stewart, Bateman, Pellegrino, & the Cognition and Technology Group at Vanderbilt); Jigsaw instruction (Hidi, Weiss, Berndorff, & Nolan); science programming for TV (Fay; Yotive & Fisch); and single-sex instruction (Hoffmann & Häussler; Häussler & Hoffmann).

In school-related research, interest as motivational belief has been analyzed in conjunction with interest-related goal orientations (e.g., task and mastery orientation), self-efficacy, self-regulation (Pintrich, Ryan & Patrick; Eccles et al.; Gisbert), its impact on course enrollment (Eccles, et al.) and academic achievement (Köller; Schiefele). Such interest has also been studied with respect to content and task attractiveness (see Hidi et al.) as well as its impact on the cycle of learning (Goldman et al.).

In vocation-related research, attention has focused on developmental change with respect to interest-related motivational orientations (Wild & Krapp, 1996; Wild et al.) as well as aspects of learning and instruction that influence preferences for particular content and instructional settings and enable stabilization of interest in job requirements (Prenzel, et al.; Wild et al.).

Interest as a Component of the Developing Self

Research that addresses interest as a component of the developing self is concerned with the interests of the individual as well as with his or her sense of activity or agency. In this tradition, then, interests can be interpreted as motivational dispositions or traits to be identified, and/or as components of the developing personality. This approach to the study of interest characterizes early theories of personality (cf. Allport, 1937; Claparède, 1905; James, 1890; Dewey, 1913; Rubinstein, 1958) and provides the basis of contemporary discussions of motivation and interest (cf. Krapp, in press; Fend, 1994; Hannover; Prenzel; Renninger, 1989, 1990).

In contrast to considerations of interest as motivational belief, discussion of interest as a component of the developing self represents a more broad-based theoretical paradigm. The relation between the individual characteristics of the person and the environment is considered to be an important component of a rather complicated network of hypotheses (theoretical structure) about the dynamics of human development, and, more specifically, the role of motivational factors in the process of identity-formation.

For example, it is postulated that the role of gender-identification is closely related to the development and selection of interest. Todt & Schreiber, among others, have pointed out that interests are chosen early in the child's development according to their perceived fit with the child's understanding of an appropriate gender-role. Over time,

interests that are compatible with the demands of this role are maintained. From this perspective, interests represent value orientations and their public demonstration ("publication") signals the way a person wants to be seen (or what he or she would like to become). Interest is studied as a concept that defines important developmental goals, rather than simply being focused on a discrete endpoint such as prediction of achievement. Furthermore, individual interests are understood to provide the individual with guidelines for the selection and realization of action goals.

In school-related research, attention has focused on the process of interest engagement (Gisbert), the development of talent (Rathunde; Fink), interests in particular school subjects and their implications for gender-specific role identification (Hoffmann & Häussler, Gräber; Renninger), and the implications of gender-specific role identification for such interest development.

Interest is described as: characterizing autonomous learning (Deci); central to a state of optimal experience (e.g., flow; Rathunde; Csikszentmihalyi & Rathunde, 1998); influencing the difficulties and strategies students engage in reading comprehension and mathematical word problem-solving (Renninger), and critical to both male and female dyslexic readers (Fink).

In vocational-related research, a theoretical tradition explores developmental change in the structure of interests in relation to change and growth in the structure of an individual's personality and self-concept (Super & Crites, 1962; Holland, 1973; Barak, 1981; Gottfredson, 1981; Todt, 1978; Bergmann, 1992). Recent approaches ask questions such as how conditions in family and school are responsible for the development of interests that are important for the selection of a professional career (Eder, 1992; Rathunde), how job-related interests develop during vocational education (Wild, et al.; Prenzel, et al.), and whether these developmental changes can be explained on the basis of situation-specific experiences ("basic needs"; see Lewalter, et al., 1998). Wild, et al., for example, describe the way in which interest affects and emerges from the organization of curriculum and instruction in training environments.

Summary

Distinguishing between individual and situational interest is only a first step in the effort to describe individual interest. Research into

interest reflects at least three traditions, addressing interest as habitual preference or attitude, as motivational belief, or as a component of the developing self. Differences among these foci are responsible for variations in operational definitions of interest, in the kinds of research questions asked, and in explanations of the emergence of and the changes that occur in individual interest.

The Aims of a Theoretical Framework for Studying Interest

The aims of a framework for conceptualizing individual interest are the same as those that characterize any scientific endeavor. What are the central theoretical and metatheoretical aims of those studying interest? Were we to use 'interest' merely as a descriptive term, we would miss a central aim of psychological research: the explanation of how and why specific a phenomenon—in this case, individual interest—functions as it does. Such specification is necessary for both informed research and practice.

Other questions refer to the selection of an adequate theoretical and methodological paradigm. In discussing the content and structure of a unifying theoretical framework for interest research, a number of issues must be considered. How might a unified theory of individual interest be constructed? Is it appropriate to reconstruct an individual interest only as some sort of subject preference? Do we really meet the central aims of a unifying theoretical framework when the dispositional concepts of individual interest are reconstructed as a cognitive, motivational belief? Or do we instead need to allow for simultaneous consideration of each as both independent and interdependent variables?

While it is obvious that a unifying framework for studying individual interest must account for interest-related dispositions or structural components, and that it must address something about interest-related processes, the question remains how this might be accomplished. There appears to be general agreement that an individual interest can theoretically be reconstructed as relatively enduring, including emotion and/or value-related aspects, and having a strong "intrinsic component." But what about knowledge-structure? In Renninger's concept, for example, interest is characterized by high levels of stored value and stored knowledge. Her research has focused on children, and her questions fit the category of basic research. Her operational definition addresses the absolute case of individual interest where there is theoretically both stored knowledge and stored value, and identification of interest (and noninterest) is always relative to the other

activity of a given individual. This is quite different from the attraction of or preference for a class of objects that characterizes assessment of topic-based interest, in which a person is asked to rate interest for 'x' where no uniform use of the term interest is suggested and the role of the larger context of possible interests is overlooked.

Others have omitted knowledge as a criterion of definition. This type of definition focuses on the impact of interest on knowledge (see Schiefele, 1991; Tobias, 1994). In this conceptualization one would think of interest as a psychological tendency, where someone wants to learn more at a higher level of development (Prenzel, 1988). Decisions about the theoretical foundation of a dispositional concept of interest affect the basis for answering questions about how to operationalize such a concept in empirical research.

Many practical problems and questions would be easier to solve if we had a differentiated knowledge about the development and effects of interests defined in both the absolute empirical sense and at a more general level. There is a close relation between the kinds of problems that must be solved in practice and the adequacy of certain theoretical and/or methodological approaches. A research approach concerned primarily with the description and explanation of interindividual differences, for example, might be very useful in improving prediction and procedures concerning learning in the classroom. The methods, models, and empirical results within this domain of research, however, do not necessarily deliver an equally useful basis for coping with individual learning problems, dealing with unexpected changes in a person's pattern of interests, or designing a curriculum that will facilitate the development of interest for some field of school-related subjects. Such questions require detailed information about general functional relationships and developmental processes that apply to all individuals of a specific age group.

In fact, however a framework for studying interest is finally articulated, it needs to be broad enough to permit discussion about the emergence and the development of interests, including the analysis of structural and dynamic causes of interest, as well as such effects of interest as changes in learning and development. Thus, related phenomena must be analyzed as both dependent and independent variables.

Furthermore, a framework for studying interest should provide models and concepts to describe and explain those phenomena. In fact, if we look at the topic of this volume alone, we might demand from a theory of interest that it not only provide a description of gender

differences in different fields of interest, but also that it explain the emergence of these differences in family, school, and society and account for both short-term and long-term effects of learning and development.

Of course, there remains the question whether it is even possible to specify a unifying framework for interest research. On the one hand it seems necessary and possible to have a theoretical framework, if only at a very general level. This would permit discussion and integration of results from different lines of related and specialized research. On the other hand, given that different scientific and practical aims appear to be reached through specialized research approaches based in different metatheoretical decisions, such a framework would need to be multifaceted and multidimensional. It is clear that our understanding of the role of interest and gender in learning and development would be substantially enhanced by a unifying framework for the study of interest.

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