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The Promotion and Development of Interest:

The Importance of Perceived Values

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### **Abstract**

It is tempting to consider the development of interest as an intra-individual process. That is, whether a person becomes interested in a topic can be attributed mostly to individual differences in temperament and personality characteristics. However, motivation in general, and interest development in particular, is also a social phenomenon that may be influenced by one's interactions with people while engaging in the activity of interest. In this chapter, we first outline the role of perceived value in the development of interest. Second, we review a program of research designed to enhance interest by facilitating perceptions of value for an activity. Third, we discuss how other people in our lives both directly and indirectly influence value and, as a result, the development of interest. Although the majority of the extant research literature is focused on direct interventions to influence value, and thereby interest, we outline several indirect pathways through which the social context can also contribute to an individual's perception of value. We encourage researchers to explore the direct and indirect influences of the social context on value through both observational and experimental studies so that we can discover additional mechanisms that help explain how interest develops.

*Keywords:* interest development, value, social influence, social context, interventions, motivation

### The Promotion and Development of Interest: The Importance of Perceived Values

Why would Marcus, a high school volleyball player, spend countless hours practicing his serve in his backyard, until his arms were so tired that he could hardly move? Does the value he sees in practicing help him overcome his fatigue and maintain his passion toward volleyball? Why would Erica, a high school student, spend her weekends attending math competitions, often travelling many hours each way? Why does she enjoy math and see the importance of math to her future when so many other students do not? In the parlance of interest research, these two individuals exhibit well-developed interests in volleyball and math, respectively. In this chapter we consider how finding value and meaning in activities and topics leads to the development of interest. We also highlight a program of research that we have pursued over the last decade designed to promote interest development. Finally, we discuss how other people in our lives influence value, both directly and indirectly, and as a result, the development of interest.

#### **The Role of Value in the Development of Interest**

The word “interest” is often used in everyday conversation, such as when talking to friends about an interesting television program or when we say we are interested in taking an exercise class. These more momentary types of interest can often give way to more enduring interests, such as being interested in the well-being of our children. As often as interest is used in everyday parlance, it is no surprise that interest has captured the attention of researchers who have quite particular ways of defining interest. John Dewey defined interest as being engaged or engrossed with an activity, object or topic (Dewey, 1913, p. 17). This more fleeting version of interest described by Dewey has more recently been called *situational interest*, whereas more enduring interest that transcends particular times and places has been called *individual interest* (Hidi & Baird, 1986; Renninger, 2000). *Situational interest* can be understood as a focused

attention triggered by particular content, activities or events within a particular moment. In contrast, *individual interest* is often conceptualized as a relatively enduring predisposition to actively reengage with particular contents, activities or events over time resulting in an enriched sense of value and knowledge for these contents, activities or events (Renninger & Su, 2012). Having our attention drawn to a humorous video clip is an example of situational interest, whereas Marcus and Erica's long-term interest and engagement with volleyball and math, respectively, are examples of individual interest.

Previous research suggests that both situational and individual interest can play a powerful role in predicting future choices and career paths (Harackiewicz & Knogler, in press). Research with both laboratory and academic tasks reveals that situational and individual interest are both associated with persistence, attention, and effort (e.g., Ainley, Hidi, & Berndorff, 2002; Schiefele, 1991; Knogler, Harackiewicz, Gegenfutner, & Lewalter, 2015; O'Keefe & Linnenbrink, 2014). A meta-analysis of over 150 studies tested the relationship between interest and performance (Schiefele, Krapp, & Winteler, 1992). The findings revealed that interest was correlated with performance in both naturalistic ( $r = .31$ ) and laboratory settings ( $r = .27$ ). In several longitudinal studies, Harackiewicz and colleagues followed college students throughout a semester of an introductory course (Harackiewicz et al., 1997, 2000), and in other studies, followed students from the first semester of their freshman year through graduation (Harackiewicz et al., 2002, 2008). In these studies, Harackiewicz et al. found that the situational interest that students reported during and at the end of their first semester of introductory psychology predicted the number of additional psychology courses taken over the course of their academic career, as well as whether or not they decided to major in psychology. Other researchers have found similar results with middle and high school students (Meece, Wigfield, &

Eccles, 1990; Updegraff, Eccles, Barber, & O'Brien, 1996; Wigfield, 1994; Xiang, Chen, & Bruene, 2005). Thus, interest in a topic or activity can have a powerful influence on people's lives, by influencing their academic performance, course-taking and major selections, how they choose to spend their free time, and post-education career pathways (Harackiewicz, Smith & Priniski, 2016).

How does situational interest, such as that sparked in introductory courses or by an interesting television program on space flight, develop into a more enduring interest in a topic, such as majoring in psychology, or a deep interest in aerospace engineering? Renninger and Hidi (2011, 2016; Hidi & Renninger, 2006) have outlined a model of interest development specifying the conditions under which situational interest can develop into individual interest. In their model, it is the interaction between the person and the topic or activity that determines the extent of interest development. This interaction idea is not new, and is in fact foundational to many classic theories in social psychology, such as Lewin's field theory (1935) in which he argued that behavior is a function of both the person and the situation.

In their model, Renninger and Hidi outline four factors that contribute to interest development: knowledge and confidence, positive affect, personal value, and contextual support. As individuals learn more about a topic, they become more skilled, knowledgeable, and confident in their abilities. An increase in knowledge can bring about positive affect as individuals feel more competent and skilled through task engagement. In addition, as they spend more time with the activity, they may find personal meaning and relevance in the activity, such as when a high school student discovers that an understanding of chemistry can help him pursue his dream of becoming a pharmacist. The contextual support that students experience when engaging in an activity has the potential to enhance, or undermine, the development of interest.

For example, Marcus's volleyball coach might provide additional time for him to practice his serve in the gym in the morning before school, thereby affording him the opportunity to develop his skills in a much deeper way. This additional practice might lead to increased feelings of confidence and excitement about competing in matches against challenging opponents. In contrast, if Erica's mother was overly critical of even the slightest mistake when doing her math homework, this could create negative affect, an unwillingness to take on challenge, and reduce her enthusiasm—thereby decreasing the likelihood that she takes advantage of the opportunity to participate in weekend math competitions. In both Marcus's and Erica's situations, the contextual supports offered by a coach and a parent, respectively, serve to either promote or undermine their on-going interests.

In our research, we have focused on the role of perceived value for a topic or activity in the development of interest (Harackiewicz & Hulleman, 2010). As social psychologists, we noted the overlap in the classic expectancy-value models of achievement motivation (e.g., Atkinson, 1957; Eccles et al., 1983) and interest theory. Expectancy-value models of motivation posit that an individual will be motivated to engage in a task to the extent that they feel they can be successful at it (expectancy) and perceive the task as being important to them in some way (value). In this model, tasks are important because they are fun and enjoyable (intrinsic value), are useful and relevant to important goals (utility value), and are important to the person's sense of self (attainment value). In this work we focused on intrinsic and utility value because they are the most malleable in educational contexts, due to their close connection with specific academic tasks (Hulleman, Durik, Schweigert & Harackiewicz, 2008).

Research utilizing the Eccles et al. (1983) perspective indicates that perceived task values tend to be associated with achievement choices, such as course enrollment decisions, free-time

activities, and intentions, whereas expectancies for success tend to be associated with performance (e.g., Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002). In addition, longitudinal research has revealed that task values play an important role in the development of interest (Durik & Harackiewicz, 2007; Hulleman et al., 2008). For example, Hulleman et al. (2008) assessed perceived intrinsic and utility value in two contexts: an introductory psychology course for undergraduates and a summer football camp for high school athletes. Task values were measured at the mid-point of a 15-week semester and a four-day summer football camp. Interest in psychology was assessed at the end of the semester, and interest in football was assessed at the end of camp. The results indicated that students' and athletes' perceptions of intrinsic and utility value for their course topic and sport, respectively, were associated with their interest at the end of the semester and the summer camp. Other researchers have also found that utility value is related to both interest and performance (e.g., Bong, 2001; Cole, Bergin, & Whitaker, 2008; Durik et al., 2006; Gaspard, Dicke, et al., 2015; Mac Iver, Stipek, & Daniels, 1991; Simons, Dewitte, & Lens, 2004). Thus the perception of value can be critically important in the development and deepening of interest.

### **Interventions That Promote Value and Interest**

These correlational findings indicate the critical role of value perceptions in interest development, but also raise questions of causality. Can we influence students' perceptions of value and thus promote interest? In a foundational series of laboratory experiments, Durik and colleagues (Durik & Harackiewicz, 2007; Durik, Schechter, Noh, Rozek, & Harackiewicz, 2015; Schechter, Durik, Miyamoto, & Harackiewicz, 2011) manipulated the availability of information about task value while teaching participants a novel mental math technique, and examined the effects of this intervention on subsequent task interest. During this learning session, participants

in the utility value condition were instructed how the new math technique could be useful in everyday life, using examples such as calculating tips at restaurants and when shopping. Participants in the control condition did not receive this information. Following the learning session, participants solved as many multiplication problems as they could in 5 minutes. After they completed the problems, they were asked to indicate how interested they were in the new technique. The results indicated that directly communicating the utility value of math enhanced interest for those with initially high levels of math confidence compared to the control condition, whereas the intervention did not increase interest for those with lower levels of confidence, and even seemed to undermine interest in some studies.

These findings raised questions about other ways to promote the perception of value, and led to a new utility value experimental paradigm, in which participants were encouraged to make personalized connections to the material for themselves, instead of being told how the material was valuable in general (Hulleman, Godes, Hendricks, & Harackiewicz, 2010, Study 1). The experiment was conducted in the laboratory with the same basic procedures as in the Durik and Harackiewicz (2007) study in which participants learned a new mental math technique and then performed a set of multiplication problems. The difference was in how utility value was manipulated. In the first of these studies (Hulleman et al., 2010), participants were asked to write about how they could apply the mental math technique to their own lives after they had learned the technique (i.e., self-generated utility value, instead of being told about the usefulness of the math task, as in the Durik study). Participants in the control group wrote an essay that was unrelated to the mental math technique. The results indicated that the self-generated utility value intervention increased interest in the math technique compared to the control group for all participants, on average, regardless of how competent participants thought they were at math.

However, further analyses showed that the intervention was particularly beneficial for participants who did not expect to do well in math. In fact, participants with low success expectancies were as interested in the technique as the participants with high success expectancies in either the control group or the utility value group. The participants who reported the least amount of interest in the math technique were control group participants with low success expectancies. The results from this study suggest that the self-generated utility value manipulation was particularly successful for students who lacked confidence in their math ability (for reviews, see Durik, Hulleman, & Harackiewicz, 2015, Harackiewicz, Tibbetts, Canning, & Hyde, 2014).

The results from these two different types of utility value manipulations (directly communicated, self-generated) seemed to indicate that individuals respond differently to manipulations of utility value based on their levels of confidence. Canning and Harackiewicz (2015) conducted a series of studies that examined the effects of both directly-communicated and self-generated utility value interventions within the same study. Using similar procedures, Canning and Harackiewicz (Study 1) found that the self-generated utility value manipulation raised interest for less confident students and had no effect for more confident students, whereas the directly communicated intervention undermined interest for the less confident students but increased interest for the more confident students. In addition, Canning and Harackiewicz found that the negative effects of directly-communicated utility value for less confident students were ameliorated when students were also asked to generate their own utility value examples (i.e., students were first given information about the utility value of the math task and then prompted to write an essay about how the math task related to their own lives; Study 2), or when the directly-communicated utility value information contained references to daily lives (as opposed

to careers and school, Study 3). These results clarify previous findings, and suggest that the positive effects of the self-generated utility value manipulation for less confident students may result from the opportunity to generate their own sense of utility value and engage within their own comfort zone, instead of being presented with utility value information that might be perceived as threatening (Durik et al., 2015). This could also explain why directly-communicated utility value was more effective for less confident students when it referred to daily life instead of career and schools. Everyday life examples are less consequential for students than future educational and career pathways, and this may reduce the anxiety aroused by the prospect of not doing well on an academic task, and thereby open students up to experience value and interest with the activity.

Overall, the results of these laboratory experiments suggest that we can help students develop interest by highlighting the utility value of the material. Although the experimental laboratory method allows us to determine causality and refine our experimental manipulations so that they can be as effective as possible, laboratory studies have limited generalizability to real-world contexts (Harackiewicz & Barron, 2004; Hulleman & Barron, 2016). In contrast, the randomized field experiment combines the ability to make causal inference based on the experimental method with the naturalistic setting inherent to observational studies. The power of this approach is that it can generate information that furthers theoretical understanding and also provides practical information for practitioners who work in the real world (Cook, 2002).

Thus, a series of randomized field experiments were conducted to test the self-generated utility value intervention in educational settings (Harackiewicz et al., 2016; Hulleman et al., 2010, Study 2; Hulleman, Hendricks, & Harackiewicz, 2007; Hulleman & Harackiewicz, 2009; Hulleman, Kosovich, Barron, & Daniel, in press). In the first field experiment, utility value was

manipulated in several college high school classes using the self-generated utility value intervention developed in the earlier laboratory research (Hulleman et al., 2010, Study 1), and effects on self-reports of utility value and interest were examined. In the first two college studies, introductory psychology (N = 237; Hulleman et al., 2010) and statistics students (N = 44; Hulleman et al., 2007) received an essay assignment to complete within 3 weeks following their first course exam. In a third college study, general psychology students (N = 357; Hulleman et al., in press) received an online essay prompt to complete as part of their regular course assignments immediately following the first and second course exams. In a fourth college study, biology students received an essay assignment via email in each of the three sections of the course, approximately two weeks before midterm exams (N = 1040; Harackiewicz et al, 2016).

In all of these RCT studies, all students selected a topic that they had studied previously. In the utility value conditions, students then wrote about how this topic applied to their lives in some way, whereas students in the control condition wrote a summary of what they had learned about the topic. At the end of the semester, students' interest in classroom activities, the content being learned, intentions to take additional courses in the subject, and careers related to the subject were assessed via an in-class or online survey. Based on prior research, we examined whether the utility value intervention worked better for student low in either initial course performance (e.g., exam grades) or their initial success expectancies from the beginning of the year. The results replicated our laboratory findings (Hulleman et al., 2010, Study 1). Students with low exam scores or low success expectancies reported higher levels of interest in psychology (or science, or greater inclination to take more statistics courses) in the utility value condition than the control condition. Students with high exam scores or high success expectancies reported equally high amounts of interest at the end of the semester regardless of

experimental condition. Thus, we were able to promote interest development in college and high school classes with a simple utility value intervention. Furthermore, our mediation analyses revealed that the intervention worked, at least in part, by promoting students' perceptions of utility value (Hulleman et al., 2010; Hulleman & Harackiewicz, 2009).

The results from these randomized trials corroborate the laboratory findings and confirm the predictive power of value in the promotion of interest. The self-generated utility value intervention tested in our laboratory and randomized field studies was shown to increase students' perception of value for the learning material, and was particularly beneficial for students who had low success expectancies and/or low performance in the course (Durik et al., 2015; Harackiewicz et al., 2014). In other words, this intervention was most effective in promoting interest for students who most need help—those who are struggling academically or lack confidence in their skills. This type of intervention has also been effective in promoting performance for underrepresented students in science classes (Harackiewicz et al., 2016, Tibbetts, Harackiewicz, Priniski & Canning, 2016), underperforming students in college psychology (Hulleman et al., in press), and low confidence students in high school science classes (Hulleman & Harackiewicz, 2009). In addition, the directly-communicated utility value intervention was shown to promote interest for students high in confidence, and for all students when combined with self-generated utility value (Canning & Harackiewicz, 2015).

In a study inspired by these utility value interventions, Gaspard and colleagues developed a classroom intervention aimed to foster students' utility value beliefs in mathematics within a high school context (Gaspard et al., 2015). Importantly, the intervention contained both directly-communicated and self-generated utility value, which was shown to promote interest for all students (Canning & Harackiewicz, 2015). Conducted in Germany, students in the math

classrooms were randomly assigned to one of two utility value conditions or a control condition. Students in the intervention conditions took part in a 90-minute researcher-led intervention session, and students in the control condition were put on a waitlist to receive the intervention at a later time. The intervention session consisted of two parts. In the first part, information about the utility of mathematics in daily life and for future careers was directly communicated to students in both intervention conditions. In the second part, students in the *essay* condition wrote about how mathematics applied to their lives in some way. Students in the *quotations* condition read quotations about the utility of mathematics articulated by young adults. The results indicated that both intervention conditions successfully fostered students' perceptions of utility value up to 5 months after the intervention compared to the control condition (Gaspard et al., 2015). In addition, students' homework behavior was assessed through a homework diary for one month after the intervention to better understand its effect on students' interest development. Students in both intervention conditions (versus the control condition) showed higher levels of situational interest for their math homework (Flunger et al., in prep). In contrast to previous findings, the intervention was equally effective for students with high and low success expectancies.

Researchers have also focused on correlational and experimental investigations on the role of specific types of utility values that seem important to promote broader interest in scientific fields and science research. Scientific fields are stereotypically viewed as providing a wealth of opportunities to fulfill intrinsic values, such as curiosity and passion for scientific discovery. But these fields are also seen as lacking opportunities to fulfill communal, or prosocial, values of working with or helping others, or giving back to society, more broadly (e.g., Diekman et al., 2010; Morgan, Isaac, & Sansone, 1992). In correlational studies with

undergraduate students, researchers found that those who perceived science as providing more opportunities to fulfill their communal values reported greater interest in science careers (Brown, Thoman, Smith, & Diekman, 2015). In complementary experimental research, researchers provided students with descriptions of scientific research that included connections to communal values (versus other important values or control conditions that just described the research). Students randomly assigned to read the research descriptions with communal values connections rated that research as more important, felt greater interest in that research, and expressed greater motivation to pursue research careers (Brown, Smith, Thoman, Allen, & Muragishi, 2015). Several studies have found that making communal or prosocial value connections in science is particularly important for women, underrepresented minorities, and first-generation college students (Allen, Muragishi, Smith, Thoman, & Brown, 2015; Diekman et al., 2010; Harackiewicz et al., 2015; Jackson, Galvez, Landa, Buonora, & Thoman, in press; Smith, Cech, Metz, Huntoon, & Moyer, 2014; Thoman, Brown, Mason, Harmsen, & Smith, 2015).

In sum, the utility value interventions reviewed here contained two of the four main factors identified as critical in the development of interest (Renninger & Hidi, 2011): perceived value and contextual support. The interventions, delivered in educational contexts, served as contextual support that facilitated the discovery of value, which provided the opportunity for students to develop interest. Furthermore, these interventions were designed to directly influence students' perceptions of value by prompting them to generate written reflections and/or to read examples making connections between the topics and their lives. These types of direct, explicit interventions are only one type of situational influence on value and interest. In the next section, we review several additional situational factors that have the potential to influence perceived values and interest development.

## Value and Interest in the Social Context

The intervention research described above demonstrates that structured activities within specific learning contexts can be utilized to successfully promote interest by enhancing value. Outside of specific learning contexts that are rich with scaffolds to promote value perception and interest development, however, individuals often look to others as a source of value. For example, our interactions with others in the social context, either directly or indirectly, have the potential to play a significant role in the development of interest (McCaslin, 2009). Although interest is experienced at the individual level, the social contexts in which a person's interest develops can shape that development (for better or worse) through multiple social psychological processes.

Values can be transmitted intentionally and directly (e.g., most parents have the conscious goal of sharing their values with their children) or they can be transmitted unintentionally and indirectly (e.g., through inferences about others' values from their behaviors). Through both routes, individuals create meaning from these shared values, and these values have important implications for interest development. We focus here on some, but not all, of the ways in which the social context can both *directly* and *indirectly* influence interest development through effects on values. Specifically, we explore the role that parents, teachers, and peers play in influencing individual's perception of value and subsequent development of interest. Other chapters in this volume highlight additional routes of social influence on interest (see Thoman, Sansone, & Geerling, this volume; Master, Butler, & Walton, this volume).

**Direct Sharing of Values to Influence Interest Development.** Unlike other social roles, the roles of parents and teachers come with expectations of sharing and teaching values. Parents and teachers both want to influence the activities that children and students pursue and the

interests they develop. There is likely variability in the extent to which parents and teachers see value sharing as central to their role, but people in these roles seem mostly likely to both directly and indirectly share values in an effort to influence their children's or students' interest development. As Alexander, Johnson, and Leibham (2015) point out in their work with young children, parents and teachers are important socializing agents who co-regulate the development of interests. Parents respond to the interests expressed by their children, but also shape their children's interest development through their actions. For instance, Leibham, Alexander, and Johnson (2005) found that parents' provision of nonfiction books during very early stages of interest development fostered and maintained their children's science interests in the long-term.

Eccles and colleagues have described the value transmission between parents and children with respect to achievement values. Their work primarily focuses on differences in how socialization of values translates to gender differences in STEM (science, technology, engineering and mathematics) achievement and choices (Jacobs, Vernon & Eccles, 2005; Fredricks, Simpkins & Eccles, 2005), in addition to the transmission of differences in performance expectations for boys and girls (Jacobs & Eccles, 2000). What is clear from these data is that parents' valuing of achievement tasks for their sons and daughters influences their children's subjective values for those achievement domains (Gniewosz, Eccles, & Noack, 2015; Jacobs, Davis-Kean, Blecker, Eccles, & Malanchuk, 2005).

Based on this research, and the success of the high school utility value intervention (Hulleman & Harackiewicz, 2009), Harackiewicz, Rozek, Hulleman and Hyde (2012) conducted a utility-value intervention study with parents which demonstrates the role of parental transmission of values. Parents of 10<sup>th</sup> and 11<sup>th</sup> grade students in an ongoing longitudinal study participated; half of the parents were randomly assigned to receive information about how

learning math and science was important for their teenagers' lives (i.e., highlighting utility value for their children), and the other half did not. The intervention consisted of two brochures mailed to their homes and access to a web-site that emphasized the importance of math and science for teens, and provided many resources. Results showed that sending utility value information to parents led to increased math and science course-taking by their children in 11<sup>th</sup> and 12<sup>th</sup> grade (Harackiewicz et al., 2012), and that this effect was partially explained by an increase in parental value for math and science, and increase in discussions between parents and teens about math and science. The intervention increased parents' perceptions of the utility value of math and science for their teen, which led to an increase in their teen's perceptions of the utility value of math and science. Further analyses revealed an interesting pathway for the course-taking effect: parental values, as well as teens' perceptions of parental values, led to teens' increased valuing of math and science, which was then the strongest predictor of course-taking in 12<sup>th</sup> grade ( $\beta = .22, p < .05$ ; Rozek et al., 2014). Thus, the utility value intervention directed at parents altered both the direct communication of value (through conversations) and indirect communication of value (through teens' perceptions of parental values). We discuss this indirect pathway more in the next section.

Teachers can also influence student value directly by telling students why the material they are learning now is relevant to their personal interests and future goals. Schreier et al. (2014) showed that high school students' values for mathematics was enhanced by teaching that highlighted the relevance of the learning material for the out-of-school context. Student and teachers' perceptions of relevance-oriented teaching not only related to students' current value perceptions, but also positively affected their development over the course of five months. Research by Patall, Dent, Oyer, and Winn (2013) shows that when high school students perceive

their teachers to provide a reason for their learning activities, it is associated with increased value and interest. Using longitudinal datasets, further research has shown the importance of the perceived meaningfulness of learning material for the development of not only academic values (Roeser, Eccles & Sameroff, 1998), but also interest and choices (Wang, 2012).

In addition to parents and teachers, it seems reasonable that peers can also intentionally shape one another's interests through values (Ryan, 2000, Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006). For example, students who perceive little value in biology might try to convince their friends that the class is unimportant and to spend time hanging out rather than studying. Or an adolescent's friends might try to convince her that studying is less cool and interesting than playing video games (suggesting that she should not like or do it). These kinds of examples can be negative or positive to illustrate that peers can try to shape one another's values as a means to influence interest development and continued behavioral engagement with some activity or topic. However, there is little empirical research investigating the effects of such peer pressure on students' academic motivation and values (see Ryan, 2000 for review).

### **Indirect Sharing of Values and the Influence of the Social Context on Interest**

**Development.** In addition to making sense of the values that others directly share, people also draw inferences about others' values to decipher their place in their social world. A fundamental principle from social psychology is that people actively create meaning in their social worlds by looking to others and establishing their roles and identities relative to others (Ross, Lepper, & Ward, 2010). That is, people are not simply passive recipients of information; people strive to understand the context we are in, our place in it, and our attitudes and beliefs about it. An important part of self-development is learning, interpreting, and internalizing others' views of us (Cooley, 1902; Meade, 1934; Tice & Wallace, 2003), and identity development involves

negotiating our self-concepts and social identities with other people through social interactions (Swann & Bosson, 2007).

Although often neglected in research on development of the self, our interests are an important part of our social identities (see Vallerand, this volume). The activities we choose to pursue and the kinds of activities that capture our interests are rarely private knowledge. In everyday social interactions people share their daily activities and interests, and the kinds of activities they share become an important part of their social identity (Eccles, 2009; McCaslin, 2009). During such interactions, people draw inferences about one another based on their interests, and just as people become aware of others' views of their talents and capabilities (Bandura, 1986), people also attend to others' judgments and appraisals about their interests (see Thoman, Sansone, & Geerling, this volume).

Thus, even when others may not intentionally or explicitly communicate their values, an individual's perceptions and active understanding of others' values can shape our interest. In a recent study of high school biology students, Hulleman, Dicke, Kosovich and Thoman (2016) measured students' perceptions of their peers values for biology (e.g., "*Most of my classmates think biology is important.*"), students' personal utility value for biology (e.g., "*How relevant is the course material to your future career plans?*"), and their interest in biology (e.g., "*How much do you enjoy biology?*," "*Would you be interested in receiving more information about the benefits of biology, and science in general, for your future life? (Yes/No)*"). As presented in Figure 1, the results revealed that perceptions of peers' values in biology predicted students' own values, which then predicted how personally interested students were in biology (Hulleman et al., 2016). This study demonstrates that students are actively generating inferences about their classmates' values, and these perceptions in turn influence the student's own values and interest.

This study corroborates previous research findings showing peers' influence on students' academic engagement—especially in teenage years (Fredricks et al., 2004; Juvonen, Espinoza, & Knifsend, 2012; Reschly & Christenson, 2012). More precisely, perceived classmates' valuing of mathematics has been found to be positively associated with students' interest, value beliefs, and positive emotions in math lessons (Frenzel, Goetz, Pekrun, & Watt, 2010; Frenzel, Pekrun, & Goetz, 2007, Schreier et al., 2014). Relatedly, studies of friendship groups reveal that values in general develop similarly within peer groups (e.g., Kindermann, 2007; Ryan, 2001).

We can think of this indirect process as a positive influence on value by perceiving that others also value and are interested in the topic. However, the same processes could work to undermine value if other students are disengaged in learning, which could be construed as a lack of value for biology. For example, during a classroom lecture a student could observe his peers seeming to be bored and inattentive. Even though the student is somewhat interested in the topic, he might perceive himself to be the only one who seems to care about biology. This false consensus effect (i.e., overestimating the extent to which our perceptions are typical of others; Ross, Greene, & House, 1977) can facilitate the student changing his attitude about biology in a negative manner in order to align with the perceived group norm (i.e., pluralistic ignorance; Prentice & Miller, 1993). Conversely, a student who lacks value for the topic might perceive the same classroom as validating her attitude, thereby further cementing her lack of value.

### **Further Questions**

Despite the importance of social contexts for interest development, relatively little empirical work has focused on the ways in which other people promote or hinder an individual's interest development. One reason for the slow development in this area of research likely reflects the added methodological and statistical complexity of moving beyond the individual as the unit

of analysis. Theory that incorporates specific routes of social influence in psychological models of interest is growing rapidly (as seen in several chapters in this book), and we anticipate an oncoming wave of empirical data in this area. Given our focus here on the role of values in promoting interest, we identify two key unanswered questions that follow from our review.

### **The Role of Social Influence Change Across Stages of Interest Development.**

Although other people play an important role in shaping each other's values and interests, we expect that effects of social influences are not constant across developmental stages of interest. That is, both direct and indirect sharing of values should have differing effects on interest for someone who is in the early stages of interest development compared to the later stages of having a well-developed interest. This hypothesis is based on two principles. First, in the process of developing a strong interest people likely establish a schema for values related to that topic or activity. For newly sparked interests, a schema for the utility value of the topic or activity may be unknown and never previously considered. Individuals might look to others to fill this knowledge gap (either intentionally or not). For a woman who has a well-developed interest in mountain biking, she has likely already formulated a coherent narrative for why she does it (including what values this activity supports), and would not likely be heavily influenced by her peers. In contrast, it seems far more likely that the woman's interest in mountain biking could be influenced by others at the point when that interest was just starting to develop, such as when she was still learning about the activity and exploring how it related to her other values and goals.

Second, if interests are part of our social identities, we are likely to share that interest with others during the process of interest development, thereby instigating an integration of this interest with our social identity. For Isabel who is just learning to ski and really likes it, that interest will be supported if her parents and peers express excitement for her newfound interest

and talk with her about why they like or value skiing, such as the value of being healthy and active or enjoying the mountain scenery. In contrast, if her parents and peers express a strong devaluation of cold-weather activities and point out the many costs of skiing, Isabel may be less likely to maintain that interest given the potential social consequences of persisting. Thus, Isabel's interest is not only a function of her engagement with skiing, but also ongoing social negotiations with others about her identity. In the case of an already well-developed interest, if Marcus has spent years playing and talking about volleyball, he has likely already established this interest in his important relationships. It would be unlikely for Marcus to be influenced by someone who questions the value of volleyball because it would seem inconsistent with his already well-established identity. Thus, his interest in volleyball is likely already seen by others as part of his social identity. New people in his life (e.g., a new neighbor or new friend) who might question this interest would also likely carry less weight compared to all of the people in Marcus' life who already see volleyball as part of his self-definition.

Based on both principles, we would expect that both direct and indirect sharing of values would have a stronger influence on interest development in the early phases. We know of no empirical work investigating this link, but research testing theoretically-grounded predictions about what factors influence interest development differently across stages of development is needed. This work would entail identifying the links between interest development and one's motivations for when and how to actively construct meaning and narratives that position one's interests in a social context.

**Are People More Likely to Develop New Interests or Change Interests When They Form New Social Groups?** People join specific groups on the basis of interest, such as bird-watching groups. Thus, interest in a topic or activity can draw people to others who share that

activity, and surrounding oneself with others who share an interest should only serve to strengthen it. However, when people change social groups for reasons other than interest (e.g., moving to a new city or school), we expect that one's interests become more fluid or malleable because of changes in their social context. Educational research suggests that transition periods are often critical to students' academic development and well-being, and that students need additional support during these times (e.g., Anderson, Jacobs, Schramm, & Splittgerber, 2000). If other people influence each other's interest development by sharing values, it follows that life transitions in which one's social group changes should create a context in which interests are particularly malleable. When kids change schools, teenagers start college, or adults begin new jobs, they leave behind many relationships (though some likely persist, especially with greater advances in communication technology). One outcome of this change is that people adapt their social identities in order to fit new friendships and other relationships. Similar to other aspects of one's self-concept, interests, too, should be more malleable in such circumstances. If a boy who loves to play video games moves to a new neighborhood where all of his new peers only want to play outside, the boy is likely to create a new understanding of what it means to be interested in and spend time playing video games. Social influences may push him to spend more time outside than playing video games, talk less about video games with others, and develop a new values-based understanding of what it means to be seen by others as a gamer (i.e., video game enthusiast). Similarly, a girl who has always liked math but never had friends interested in math may find new support (socially) to develop her interest when she moves to a new school where most of the students are math and science focused. Interest researchers have yet to explore how such transitions matter for the development of interest, but as the examples above suggest, we

expect that changes in people's social contexts play an important role in why interest should be more malleable during these times.

### **Conclusion**

The fundamental role that value plays in the development and promotion of interest opens up a gateway for the social context to directly and indirectly influence interest development. Although the majority of the extant research literature is focused on direct interventions to influence value, and thereby interest, we outlined several indirect pathways through which the social context can also contribute to individual's perceptions of value. We encourage researchers to explore the direct and indirect influences of the social context on value through both observational and experimental studies so that we can discover additional mechanisms that unlock the interest development process.

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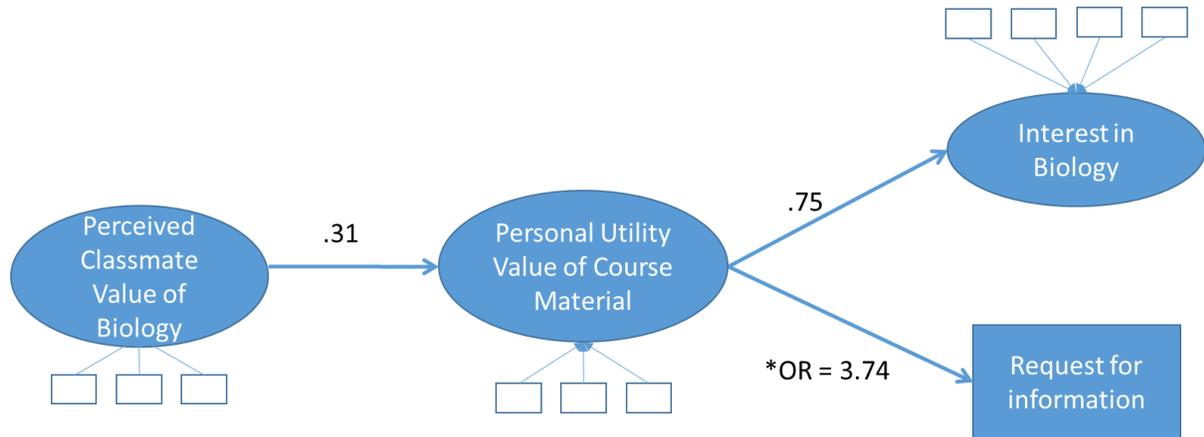
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**Figure 1.** Structural equation path model of the relationship between perceived classmates value, personal value, and interest in biology.



*Note:* Unless otherwise specified, values are standardized coefficients from a structural equation model. All values are significant at  $p < .05$ . \* Odds ratio from a logistic regression. For details see Hulleman et al., 2016.