

Review

Research on Motivation: A Review of the Eighties and Early Nineties

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There is much apprehension among psychologists that the so-called cognitive revolution has dampened theoretical and empirical research on motivational phenomena. Our review discounts this fear, as we discovered intensive research activity on a whole array of motivational issues. Actually, motivation research today is no longer being conducted solely by small and exclusive circles of

motivation researchers who adhere to a selected theory of motivation, such as Atkinson's risk-taking model in the 1960s and Weiner's attribution theory in the 1970s, respectively. Instead, we found interesting work on a multiplicity of different motivational phenomena in educational psychology, developmental psychology, and personality psychology employing all kinds of theoretical concepts. We also learned that researchers interested in motivation are not intimidated by advances in cognitive psychology. Rather, they endeavor to make profitable use of cognitive discoveries and methodologies for the analysis of their phenomena (e. g., volition research). This trend towards a synthesis between motivation and cognition is also to be noticed in the Anglo-American countries (Sorrentino & Higgins, 1986; Higgins & Sorrentino, 1990). In one decisive point motivation psychology of the 1980s has even hastened ahead of cognitive psychology. Only recently have cognitive psychologists recognized that they have paid too little attention to action (Fiske, 1993; Prinz, 1992; Prinz, Aschersleben, Hommel, & Vogt, 1993). An analogous argument was made by Heinz Heckhausen for the psychology of motivation as early as 1980 (see Heckhausen, 1981, when he spoke of the "action gap in motivation psychology"). Many researchers in the 1980s have contributed to filling this gap. This applies to both volition research and research on control beliefs or activity incentives.

In our review we further noticed that in addition to the many single studies on specific questions there are quite a number of comprehensive research programs. The aggression research by Kornadt is an example in point as are the research programs of Kuhl, Heckhausen, and Gollwitzer. The last three do not relate to a specific content area of motivated action as is true for Kornadt (i.e., aggression). Rather, they attempt to formulate general principles of goal-directed action.

It was surprising to us that the analysis of motivation in the 1980s left out affective variables. Emotions in goal striving are hardly dealt with. An exception are studies on the role of interests and the research on action incentives. Also, issues of quality and strength of incentives have been neglected, which is highlighted by the fact that the classical concept of the motive (defined as a preference for a related class of incentives) has not received much attention. The recent discussion of how motives are measured, triggered by McClelland, Koestner, and Weinberger's (1989) distinction between operant and respondent assessment methodologies, has not been picked up yet in German-speaking countries (for an exception see Halisch, 1986). Finally, achievement motivation theory, over a long period of time the showpiece of motivation research, was at the periphery of research interests in the 1980s and early 1990s.

In closing, we hope that the phenomena of motivation will continue to exert their fascination on researchers of all psychological subdisciplines. This will most certainly ensure that the psychology of motivation will continue to be a lively and productive field of research.

1. Introduction

This article gives an overview of research on motivation conducted during the 1980s and early 1990s in German-speaking countries. Motivation will be conceived broadly as encompassing all variables traditionally discussed in both the psychology of motivation and volition (willing). Specifically, we are concerned with what makes people choose certain goals (motivation) and what determines the successful goal achievement (volition or willing).

Of course, such a broadly defined area cannot be discussed exhaustively, but only selectively. Therefore, we excluded work on biologically determined motives (e. g., hunger, thirst, sexuality; see Becker-Carus, 1983; Schmidt, 1983), any themes related to emotional experiences (see Geppert & Heckhausen, 1990; Scherer, 1990), and nonexperimental approaches to motivation (e. g., psychoanalytical ideas on motivation). In addition, we did not attempt to discuss the findings of applied research where issues of motivation have become a central theme (e. g., Kleinbeck & Schmidt, 1983; Stengel, 1990; A. B. Weinert, 1991). Finally, research on decision making from a motivational perspective (e. g., Jungermann, May, Hageböck, Isermann-Gerke, & Pfister, 1989) has been excluded, as well as research on coping with stress (for an overview see Krohne, 1988).

In the *first* part of this article, research on distinct motive systems (achievement, intrinsic motivation, affiliation, prosocial behavior, aggression, power) and on intrinsically motivated behavior is discussed. The *second* part is concerned with work on the antecedents and consequences of causal attributions and control beliefs. The *third* part, finally, reports on the most marked shift of emphasis in the psychology of motivation, namely the increased interest in the volitional processes of goal achievement.

2. Motive Systems

2.1 Achievement

In the time span covered by this report, less experimental work was carried out on achievement motivation as compared to the lively research interest of the 1970s (see the comprehensive overview on research on achievement motivation by Heckhausen, Schmalt, & Schneider, 1985; Heckhausen, 1986b; K. Schneider & Posse, 1979). Seven areas of research can be differentiated: 1) measuring the achievement motive, 2) derivations of the risk-taking model, 3) self-concept of ability, 4) reference-norm orientation, 5) contributions of attribution theory, 6) development of achievement motivation, and 7) results of research on achievement motivation in educational psychology.

Measuring the Achievement Motive. According to Heckhausen (1977), motives are not to be treated as summary concepts, but must be segmented into

functional units. Schmalt (1982) followed this idea with his semiprojective Achievement-Motive Grid for children (see also Halisch, 1982; Rösler, Jesse, Manzey & Grau, 1982; Schmalt & Schab, 1984). In particular, he differentiates two aspects of the fear of failure motive. The first concerns the self-concept of low ability (FM1), the other relates to fears of having to face the anticipated negative social consequences of failure (FM2).

Halisch (1986) analyzed the relation between respondent and operant motive measures ("dichotomic validity theorem", McClelland, 1980). In addition to the operant TAT procedure (Heckhausen, 1963), five questionnaires were administered: the Achievement Motive Scale (Gjesme & Nygard, 1970), the Mehrabian Achievement Risk Preference Scale (Mikula, Uray, & Schwinger, 1976), the Self-Concept of Ability Scale (Meyer, 1984), the Test Anxiety Questionnaire (Mandler & Sarason, 1952), and the Achievement Motivation Test (Hermans, Petermann, & Zielinski, 1978). Respondent measures (questionnaires) correlated highly with one another, but did not link with the TAT. All respondent procedures contaminated approach and avoidance tendencies with high and low self-concepts of ability, whereas there was no overlap between the achievement motive as measured by the TAT and the self-concept of ability.

A further instrument designed to measure the achievement motive was introduced by Plaum (1986). Here, subjects do not answer questionnaire items or report achievement fantasies but actually solve achievement tasks. Differences in the achievement motive are assessed by observing shifts in the subjects' level of aspiration after predetermined success and failure feedback.

Derivations of the Risk-Taking Model. Studies on the leading research paradigm in achievement motivation in the past, the risk-taking model (Atkinson, 1957), have been scarce. A central, but still not conclusively tested hypothesis concerns the motive-dependent valence function of success and failure. The relative value of success and failure should be such that success-motivated individuals should emphasize successes, whereas fear-of-failure people emphasize failures. Halisch and Heckhausen (1989) address this issue in a highly sophisticated experiment. The achievement orientation was measured by both the TAT and popular questionnaires. The valences were also measured in multiple ways. First, subjects had to state how (dis)content they were with their positive (negative) achievement outcome in tasks of various degrees of difficulty (self-evaluative valence). Second, they were asked for help in compiling a reward scheme, and therefore had to state how many points they would assign to *other people* for achievement outcomes in tasks of various difficulty (normative valence). As predicted by the risk-taking model, success was experienced as more valuable and failure as less threatening, the stronger the hope for success as compared to the fear of failure. This, however, was only true for the self-evaluating valence (but not for normative valence), and when TAT scores were considered (but not when questionnaire scores were taken).

Various studies (Meyer, Niepel, & Engler, 1987; Schützwohl, 1991) have examined competing assumptions of the risk-taking model (Atkinson, 1957) and attribution theory (Weiner, 1986). Atkinson postulates an inverse linear (linear) relationship between subjective probability of success and pride (shame). Attribution theory claims that for pride and shame to occur, one needs to attribute achievement outcomes to internal factors; this should be most likely when tasks of medium difficulty are performed. Accordingly, one would thus have to assume a reverse U-shaped relationship between subjective probability of success and pride or shame. The data of Meyer et al. (1987) confirmed the Atkinson thesis; Schützwohl's experiment, however, could not replicate this finding.

Kleinbeck, Schmidt, and Ottmann (1981/2) contrast the risk-taking model with the goal-setting theory of Locke (1968). In a dual-task paradigm, subjects simultaneously had to work on both a tracking task and a reaction time task at various difficulty levels. According to the goal-setting theory, motivation should rise with increasing difficulty, whereas according to the risk-taking model, a curvilinear relationship between subjective probability of success and aroused motivation is expected, which is qualified by a person's motive. In fact, success-motivated subjects' achievement was maximum at medium difficulty in the reaction time task, whereas failure-motivated subjects' achievement was minimum in this task difficulty range. For the tracking task, the pattern of results coincided more with the predictions of goal-setting theory.

Self-concept of Ability. This concept refers to an individual's perception of his or her own abilities, and can be global as well as quite specific, depending on how broadly the area of action in question is defined (Meyer, 1984, 1987). Which tasks one chooses, what goals one sets for oneself, how much effort one puts into an activity and for how long one pursues a certain goal in the face of difficulties, to which causal factors one attributes success and failure, what kind of information about one's own abilities is sought - all of this depends substantially on how capable one feels (see Bossong & Löffler, 1985; Försterling & Schoeler, 1984; Försterling & Schuster, 1987; Meyer & Starke, 1982; Stiensmeier, 1985). The question of the *determinants* of the self-concept of ability has received much attention. We found studies on evaluations of one's ability by other people (Meyer, 1982; Meyer, Bedau, & Engler, 1988), that are often conveyed indirectly, via praise and blame (Allmer, 1987; Engler, 1985; Meyer, Engler, & Mittag, 1982; Pikowsky, 1988). Moreover, the assignment of tasks of a certain difficulty level (Engler, Mittag, & Meyer, 1986; Krüger, Möller, & Meyer, 1983), the emotional reactions to success and failure (Rustemeyer, 1982), and being helped by others were analyzed in this context.

In general, it is found that positive and supportive reactions by others lead to a positive self-concept of ability. This research has vast educational implications. It is important therefore to scrutinize any exceptions from the rule

(summarized in Meyer, 1992). Interestingly, positive utterances by others (e. g., praise after success, sympathy after failure, help, assignment of easy tasks) sometimes (e. g., when one is praised lavishly for success on an easy task) make the judged person estimate his/her own ability of low and lead to negative affect, whereas repeated negative utterances may have the opposite effect. Various assumptions of attribution theory are employed to explain this surprising, paradoxical phenomenon (León-Villagrà, Meyer, & Engler, 1990; Meyer, 1982, 1992).

Some authors (Blickle, 1991; Hofer & Pikowsky, 1988; Rheinberg, 1988) claim that these paradoxical effects emerge only when certain experimental procedures (i. e., scenario method) are employed. In the scenarios commonly used, two students are evaluated differently by a teacher for the same achievement outcome; subjects are asked explicitly about the teacher's ability judgments. Several authors analyzed whether the paradoxical effect also occurs when the subjects' thoughts are not focused on how the teacher evaluates the two students (Hofer & Pikowsky, 1988; Pikowsky, 1988). A study by Rheinberg and Weich (1988) is also relevant here. In a free answer format, subjects had to indicate the presumed thoughts of the evaluated students. Subjects primarily referred to issues of liking or injustice on the part of the teacher, and the ability of the two students was not an issue. Only when subjects were asked directly about the causes of the different evaluations by the teacher did they report thoughts that support the presence of the paradoxical effect. The importance of directing subjects' attention to ability-related concerns apparently plays a major role in the occurrence of paradoxical effects (see also Meyer, Bedau, & Engler, 1988; Hofer & Pikowsky, 1988).

Pikowsky (1988) examined the ecological validity of the "paradoxical effect." In an actual student-teacher interaction, she assessed the thoughts of both the teacher and the praised student in a structured interview. In no case were there any indications of the "paradoxical effect" of praise. This makes Pikowsky wonder about the ecological validity of the findings reported by Meyer and colleagues.

Reference-Norm Orientation. Achievement outcomes can be judged only as success or failure with respect to a standard (reference norm). Three kinds of reference norms can be differentiated: a task-inherent reference norm (objective reference norm), one's own past achievements (individual reference norm), and the achievements of a social reference group (social reference norm). The second two have been analyzed in the psychology of motivation. Rheinberg (1980, 1983) has reported numerous studies on the effects of adhering to one or the other of these different reference-norm orientations. A more flexible interpretation of achievement outcomes is associated with the individual reference-norm orientation (IRNO) as compared to a social reference-norm orientation (SRNO). For example: A student who is below average is likely to experience nothing but failure if there is a social reference-norm orientation, even if he or she makes an effort or has improved on past per-

performances. In contrast, an above-average student will still be successful even when he or she does not make any effort and actually falls below his or her former achievement level. The consequence is that students with an SRNO constantly either demand too much or too little from themselves, while the performance outcome does not seem contingent on their effort expenditure. The IRNO, on the other hand, points to the link between effort and achievement outcome, and favors realistic goal setting and thereby the attribution of the achievement outcomes to internal factors.

The reference-norm orientation is subject to a developmental change from an individual to the social reference-norm orientation. This is also observed when adults acquire a new skill (Halisch & Butzkamm, 1982). Individual differences in preferring one or the other reference-norm orientation can be measured by the "*Kleine Beurteilungsaufgabe*" (Rheinberg, 1980). There are several studies on the effects of the teacher's reference-norm orientation on students' motivation. In general, an individual reference-norm orientation of the teacher favors students' achievement motivation (Krampen, 1987a; Trudewind & Kohne, 1982; Rheinberg 1980). In line with these findings, training programs designed to change the achievement motivation of students focus on transmitting an IRNO to teachers (e. g., Weßling-Lünnemann, 1985).

According to Schwarzer, Lange, and Jerusalem (1982), the social reference norm in concert with the achieved grades is an essential basis for the self-concept of academic ability, since students in a typical classroom situation with comparative grading evaluate themselves in comparison to the grades received by their classmates. Academically weak primary-school students can improve their ranking when the more talented students (at age 10) leave for the intellectually more demanding high school (in German "*Gymnasium*"). For these talented students, however, moving on to the *Gymnasium* entails a risk of losing their relatively higher rank. According to Schwarzer et al., the hypothesized changes in the self-concept can actually be observed.

Attribution Theory and Achievement Behavior. Causal explanations of an individual's performances were considered to be the most prominent determinants of achievement motivation by cognitive theories (Weiner, 1986; Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971). Attributions were assumed to influence the central motivational variables of achievement affect and outcome expectations. In the 1970s, research on achievement motivation was dominated by attribution theoretical approaches (for an overview, see Heckhausen, Schmalt, & Schneider, 1985; Weiner, 1986), which led Heckhausen (1986 b) to term this period the "era of the causal attribution urge" (p. 9). Attribution theorists attempted to differentiate and expand the risk-taking model. Differences in the achievement motive were interpreted as different attributional styles. Moreover, it was analyzed whether outcome expectancies and performance-related affects depend on the factors to which performance outcomes are attributed. In contrast to the enormous amount of attributional research in the 1970s, we found only a few attributional studies

in the 1980s. The questions examined were the following: (a) When do causal attributions occur spontaneously? (b) What are the informational antecedents of causal attributions? (c) When do attributional biases occur? and (d) To what degree are causal attributions culturally dependent?

With regard to question (a), both unexpected and unpleasant events are considered to be triggers of spontaneous causal attributions (Weiner, 1985). However, critical studies on this topic continue to confound the affective valence and the subjective probability of an event, as unpleasant events occur more rarely than pleasant ones. In their experiment, Bohner, Bless, Schwarz, and Strack (1988) manipulated these two informational dimensions independently of each other. Subjects who had received negative performance feedback thought more intensively about the causes of their failure than persons who had received positive feedback. The subjective probability of success did not influence causal thinking.

Studies on the antecedents of causal attributions (question b) were guided by Kelley's (1967) covariation model, which sees the attribution process in analogy to the statistical analysis of variance (ANOVA) (Arnold & von Collani, 1985; Försterling, 1989, 1992 a, 1992 b; Haisch, 1982; Kammer, 1984). The basic idea is that an effect is attributed to the covarying causes (i. e., person, entity, or point in time). Distinct patterns of information regarding consensus (variation of the events over persons), distinctiveness (variation over objects), and consistency (variation over points in time) should lead to specific causal attributions of an event. Försterling (1989, 1992 b) argues that the experiments carried out on the covariation model so far did not exhaust the analogy with the ANOVA model. For example, subjects usually did not receive the information necessary for conducting a complete ANOVA, as the information given to subjects only related to the main effects of consensus, distinctiveness, and consistency, but not to the interaction effect of these informational dimensions. Försterling has extended Kelley's model so that it now encompasses information related to interaction effects.

Regarding question (c), various studies by Bornewasser (1985), Fiedler and Gebauer (1986), Försterling and Groeneveld (1983), Krahe (1984), as well as Schwarzer and Jerusalem (1982), demonstrate that success is attributed more to internal factors (abilities, effort) than failure, and that failure is attributed more to external factors (luck, task difficulty) than success. Stephan and Gollwitzer (1981) and Gollwitzer, Earle, and Stephan (1982) tested the assumption that these asymmetrical attributions are a consequence of the positive and negative affective states elicited by success and failure feedback. In order to manipulate the strength of outcome-related affect, Gollwitzer et al. (1982) used a paradigm based on the excitation transfer theory of Zillman (1978). According to Zillman's theory, affective experiences have a nonspecific excitation component which can be increased by excitation from another, completely independent source (e. g., physical effort). In the study by Gollwitzer et al. (1982), subjects had to exert themselves physically after an achievement task. They then received either success or

failure feedback after either 1, 5 or 9 minutes. Self-serving attributions were especially strong in the 5-minute condition, as here the unspecific excitation increased the performance-related affect. In the other two conditions, the excitation could either be traced unequivocally to the physical exertion (feedback after 1 minute), or had already subsided (feedback after 9 minutes). These results speak against explanations of the asymmetrical attributions after success and failure which refer solely to the different information provided by positive and negative performance outcomes. Rather, explanations are favored which assume that positive and negative performance outcomes imply a boost or threat to a person's self-esteem. Försterling's (1992 a) observation that attributional biases occur even when the informational basis for making attributions is complete also favors self-esteem explanations.

There is one cross-cultural study to be reported (question d). Schuster, Försterling, and Weiner (1989) investigated to what extent subjects from different cultures overlap in their causal attributions for performance outcomes. Subjects from five different countries (Belgium, England, Germany, India, South Korea) had to grade 22 causes (e.g., abilities, effort, external appearance, etc.) for a negative outcome (i.e., a person fails to get a desired job) according to internal/external locus, stability, controllability, and globality (Weiner, 1986). With the exception of the Indian sample, subjects showed no differences in the grading of the causes on the four presented dimensions. The Indians generally regarded the listed causes far more external, variable, and uncontrollable. Moreover, the four central causal elements of performance outcomes suggested by Weiner et al. (1971; i.e., ability, effort, task difficulty, luck) were graded universally.

Development of Achievement Motivation. A comprehensive overview on the development of achievement motivation is presented by Heckhausen (1984, 1986 a) as well as by Trudewind, Unzner, and Schneider (1989; Trudewind & Schneider, in press). Three research approaches can be differentiated:

Starting from the definition of achievement-oriented behavior as "competing with a standard of excellence" (McClelland, Atkinson, Clark, & Lowell, 1953), the authors try to discover early forms of this behavior. Many studies show that the development of achievement motivation is embedded in the development of intentionality and the self-concept. Self evaluative processes that demand a certain level of cognitive development are a prerequisite for achievement-oriented behavior (see Heckhausen 1984; Bullock & Lütkenhaus, 1990; Geppert & Küster, 1983; J. Heckhausen, 1988). First, a rudimentary self-concept of ability needs to be developed, and second, the child has to be able to understand the standards of excellence of the task at hand. If all of this is realized, achievement-oriented behavior can be observed as early as 2 1/2 years of age.

A second approach describes the development of discrete elements of achievement behavior (e.g., judgments of the subjective probability of success; K. Schneider, 1984; K. Schneider, Hanne, & Lehmann, 1989; Unzner

& Schneider, 1984). Other elements studied are the anticipated success- and failure-related affect (Geppert & Heckhausen, 1990; K. Schneider, 1987; K. Schneider & Unzner, 1989, 1992; K. Schneider & Josephs, 1991; Unzner, Beisenbruch, & Schneider, 1990), the self-concept of ability (Helmke, 1992), and the causal attributions for performance outcomes (Görlitz, 1983; Krug, Gurack, & Krüger, 1982; Ries, Hahn, & Barkowski, 1983).

Finally, precursors of individual differences in the development of achievement motivation are studied; for instance, how mothers interact with their children when playing together in early childhood (Lütkenhaus, 1984), or the degree of parental help with homework for primary school children (Duss, Kramis, & Perrez, 1984). It is also important how well the parents expect them to perform (for a study with secondary school children, see Helmke, Schrader, & Lehneis-Klepper, 1991).

The Bochum longitudinal study focused on far more complex causal patterns, testing 4,000 children over a period of 4 years (Trudewind, 1982, 1987; Trudewind, Brünger, & Krieger, 1986). According to the authors, the development of achievement motivation can only be understood if one considers the child in relation to its physical and social environment. Variations in the children's natural surroundings are assigned central importance for the prediction of individual differences in the achievement motive. The many and diverse variables assessed are grouped into three categories: (1) intellectual and achievement-relevant incentive potential of the environment (e. g., point in time when parents start to train autonomy, frequency of excursions to museums, etc., room to move around in the apartment and its surroundings, availability of books and toys, frequency and quality of parent-child interactions); (2) parental pressure to achieve (e. g., achievement expectations, help in homework, sanctions by the parents); and (3) cumulative success and failure experiences of the child (e. g., general intelligence, self-concept of academic ability, successes and failures). Educating the child to attain early autonomy and self-determination promotes the development of a success-oriented achievement motive. Children who visited a kindergarten and were surrounded by opportunities which entailed many achievement-related incentives showed less fear of failure. Furthermore, the achievement motive of the child related positively to whether the parents were content with their child's academic performance. Fear-of-failure children had mothers who were notably less content with their children's achievements than the mothers of success-oriented children, despite the fact that both groups of children had obtained the same grades. Halisch (1987) points to the importance of the achievement behavior of the parents as they are giving their children a model for setting levels of aspiration and how self-induced reinforcement is applied.

Achievement Motivation in Research on Formal Education. A central question in research on academic achievement relates to the determinants of performance. In this context, not only cognitive (e. g., intelligence, knowledge, training) but also motivational (e. g., achievement motive, self-concept of

ability, control beliefs, success and failure incentives, intrinsic rewards, interests) and affective (e. g., test anxiety) influences are taken into consideration (Helmke, 1989 a; Pekrun, 1992; W. Schneider & Bös, 1985).

Among the large number of potential motivational variables, the *self-concept of ability* has received special attention (Faber, 1989; Grobe & Hofer, 1983; Helmke, 1988 a, 1989 c, 1992; Langfeldt, 1983). In numerous studies, a positive relation between self-concept of ability and academic achievement is demonstrated. However, the results frequently do not permit any decisive statements about the causal direction and mediating processes (for a methodological critique, see Helmke, 1992). This deficit can easily be remedied using the statistical methods of causal modeling. Helmke (1992; Helmke, Schneider, & Weinert, 1986) explicitly studied the reciprocal effects and mediating processes between the self-concept of ability and performance. The subjects participated in a longitudinal study lasting from the beginning of the fifth to the end of the sixth grade in which the children's self-concept in mathematics and achieved grades were repeatedly measured. The effort expended and worrying about failure were assessed as intervening variables. Whereas in the fifth grade the self-concept depended on children's math performance, the opposite causal relationship was observed in the sixth grade. The influence of the students' self-concept on their academic performance is limited by the control and restrictions imposed by the teachers (Weinert & Helmke, 1987). Moreover, the effects of the self-concept on the quality of performance turned out to be mediated by effort expenditure and worrying about failure. A self-concept of high ability promotes effort and thereby achievement, whereas a self-concept of low ability induces self-related, task-irrelevant thoughts (worry cognitions) which impair the cognitive capacity and thus performing well (see Helmke, 1988 a)

Control beliefs were also analyzed as factors influencing academic achievement. The control theory developed by Skinner, Chapman, and Baltes (1988 a, 1988 b; Chapman, Skinner & Baltes, 1990) describes a certain type of control belief, that is, an ability-related agency belief which coincides with what has been discussed here as self-concept of ability. In line with the findings reported on the self-concept of ability, ability-related agency beliefs (i. e., the belief that one has access to ability as a means to achieving good grades) also relate positively to school performance. We will come back to control theory at a later section of this paper, but for now will turn to another motivational determinant of school performance, namely the incentive value of performing well.

Based on Heckhausen's (1977) general model of motivation, Helmke (1989 b) studied the different *incentive values* of the various consequences of academic success and failure. The instrumentality of the performance outcome with respect to reaching superordinate goals and the evaluations of one's parents based on the achieved outcome turned out to be valued most highly. Rheinberg (1989) pointed to an important issue in this context. It is

not sufficient to consider only the incentives connected to the consequences of the performance outcomes, since the activity that leads to the performance outcome may also be experienced as either pleasant or unpleasant, and thus also possesses incentive value. Indeed, effort expenditure is predicted more correctly when activity-related incentives (i. e., studying itself) are considered in addition to the incentives related to the consequences of having achieved a positive outcome.

Motivational variables are also covered in theories on the gifted. According to Pollmer (1991), exceptionally talented students are not only special in terms of their level of cognitive development, but also with respect to their level of motivation. Moreover, they evidence a markedly positive attitude towards school, and experience the classroom context as highly positive (Eder, 1989).

Some authors trace insufficient studying and weak academic performances to the children's predisposition to avoid effort and postulate the personal attribute of "*effort avoidance*" (Rollett, 1985; Rost & Wild, 1990). The *motive to compete* with others has also been found to suppress school performance (Lerch & Rübensal, 1983). In an interview study with university students, Ludwig (1982) took a rather sophisticated approach to predicting academic performance by measuring all of the different aspects of the achievement motive as specified by Heckhausen (1977): incentive weights for success and failure in self-evaluation, attributional style, intrinsic vs. extrinsic motivation, the weighting of the achievement motive in comparison to other motive systems, and norms for self-evaluation. These achievement motive variables correlated positively with the amount of studying as well as with the quality of academic performance. In a further study by Ludwig (1984), the choice of one's major (e. g., physics) and coping with stress were set in relation to both the students' achievement motive and their intellectual abilities. Students with high abilities and a strong achievement motive chose their major for intrinsic reasons and successfully coped with the demands of being a student.

According to Pekrun (1988), *academic motivation* entails several dimensions which influence academic achievements differently over time: intrinsic motivation, competence motivation (aimed at increasing one's own abilities and accomplishments or gaining reliable information about them), achievement motivation with the components hope for success, and fear of failure, and the aspect of apprehension about social evaluation. Each of these dimensions is assumed to be associated with specific expectations and valences. Academic motivation is primarily dependent on achievement motivation, and this is true for all grade levels. The other motivational components lose importance for children at higher grades. The best predictors of academic performance are the belief that one possesses the potential to exert effort (effort-control beliefs), intrinsic task values, and achievement expectancies.

Test anxiety has also been dealt with as a determinant of academic achievement. A vast amount of the research was directed at the theoretical differen-

tiation of the construct of test anxiety and its link to other achievement-related variables (for an overview see Helmke, 1983; Heckhausen, 1982; Jacobs, 1991; Kohlmann & Krohne, 1988; Krohne, Kohlmann, & Leidig, 1986; Krohne, Kohlmann, & Schumacher, 1988; Rost & Schermer, 1987; Schwarzer, 1984; Schwarzer & Jerusalem, 1989; see also Hagtvet & Johnson, 1992). The findings do not present a homogeneous picture of the relation between anxiety and performance, although indications of a negative relation predominate (Bossong, 1988; Covington, Omelich, & Schwarzer, 1986; Helmke, 1988b; Pekrun, 1991, 1992; Seipp & Schwarzer, 1991). Some authors suggest that research on the anxiety-performance link should leave behind further differentiation of the test anxiety construct and turn to moderating factors that are "to be sought outside of the anxiety construct" (Seipp & Schwarzer, 1991, p. 95). A study by Helmke (1988b) meets this demand. He states that the impairment of achievement by test anxiety depends on the classroom context and the teaching style.

The large number of studies about the effects of test anxiety on performance stands in stark contrast to the limited interest in how other *affective experiences* influence achievement. Pekrun's (1992) theoretical model of the cognitive and motivational processes mediating the influence of emotions on school-related performance attainments is a first step towards remedying this deficit.

A consequence of the strong interest in motivational variables of academic achievement is the invention of *motive training programs* (for an overview see Heckhausen & Krug, 1982; Krug, 1983; Rheinberg & Krug, in press). Three approaches of such interventions can be differentiated. First, behavior is influenced by changing expected values and performance-related expectations. Second, children are taught (mainly in extracurricular programs) to set goals realistically, make adequate causal attributions, and favorable self-evaluations (Supersaxo, Perrez, & Kramis, 1986). Finally, teachers are coached in using the individual instead of the social reference norm when grading students' performance attainments (Weßling-Lünnemann, 1985).

2.2 Intrinsic Motivation

As yet there is no generally accepted definition of intrinsic motivation. According to Heckhausen (1991, chapter 15), however, at least six different concepts can be listed which all have in common "that intrinsic behavior occurs for its own sake or for the sake of closely connected goal states, that it is not merely a means to a different purpose" (p. 456). In our review, three topics, namely curiosity and exploration, interest, and activity incentives will be treated.

Curiosity and Explorative Behaviors. Many – mostly developmental – studies have addressed this issue, as documented in several anthologies and overviews (Görlitz & Wohlwill, 1987; Keller & Schneider, in press; Mönks &

Lehwald, 1991; Voss & Keller, 1983). Curiosity is regarded as a unique and distinct system of motivation. It is activated through the interplay of specific situational and personal forces. The studies to be reported were mainly concerned with the initiation, control, and development of specific curious behaviors in children. K. Schneider (1987) demonstrated that subjective uncertainty enhances the persistence of explorative behavior in preschool children. Various studies analyzed the sequential phases of explorative behaviors. When a child encounters an unfamiliar object, after a first orientation response, he or she stares at the object from a safe distance. The child then approaches the object, inspecting it more closely and looking at it more carefully. Finally, the child asks questions and starts touching the object. After this perceptual exploration is completed, manipulatory actions are initiated and playing with the object starts as soon as the child has discovered its distinctive features (Keller, Schölmerich, Miranda, & Gauda, 1987; Moch, 1987; K. Schneider, Moch, Sandfort, Auerswald, & Walther-Weckmann, 1983). Various aspects of the exploration of unfamiliar objects were studied from a developmental and individual differences perspective by Keller, Schölmerich, Miranda, and Gauda (1987; Keller & Boigs, 1989; Voss & Keller, 1986).

The differences between exploration and play are pointed out by Voss (1987), employing concepts borrowed from action theory. Exploration is defined as handling an object without considering potential action outcomes and consequences, that is, with the only concern being to gather information on the object's features and functioning. Play starts when the child has gained this knowledge and starts to intentionally use the object for the purpose of some playing. Moreover, exploration and play are said to be accompanied by different emotional experiences, that is, anxiety/tension and joy, respectively (Fähndrich & Schneider, 1987).

So far, subjective uncertainty was considered to be the prime determinant of curiosity, ignoring the possibility that confrontation with a new object also elicits fears that run counter to any impulses about exploring it. More recently, it has been argued that exploration should be interpreted in terms of the interplay of approach and avoidance tendencies. Lugt-Tappeser and Schneider (1987) explored the link between fear of an object and different forms of exploratory behavior with preschool children. Another affective precursor of exploration may be the experience of surprise. Research on surprise has only recently been initiated by Meyer, Niepel, Rudolph, and Schützwohl (1991). They confront subjects with schema discrepant, surprise-inducing events and explore different concomitants of surprise, such as delayed responding, automatic attention responses, and subjective experience of surprise.

Trudewind and Schneider (in press) present two new procedures for assessing dispositional curiosity. The first is a questionnaire which comprises three scales. Parents report on three aspects of their children's curiosity behavior: inquisitiveness, perceptual and manipulative exploration, and excitation seeking. The second way of measuring dispositional curiosity is based on an observational methodology. Children are confronted with a puppet

show that contains various episodes designed to stimulate their curiosity. Observers score the mimic reactions and body movements during these episodes and note how attentively the children keep watching the puppet show.

Some authors question the ecological validity of experimental studies on curiosity. K. Schneider and Unzner (in press) argue that experimental studies ignore the importance of curiosity-provoking incentives as present in the natural environment and exclude social determinants of curiosity. The authors demonstrate in a field study that children's physical and social surroundings do moderate exploratory behavior (see also Krapp, in press). In particular, close physical proximity to a parent or another caretaker plays a negative role. However, emotional closeness between child and caretaker affects exploratory behavior positively (see Keller & Gauda, 1987; Voss & Keller, 1986).

Lehwald (1985) discussed a different but related notion of curiosity. He conceptualizes the drive to extend one's knowledge and to enjoy solving complex problems as a personality attribute. Differences to the achievement motive are seen in the fact that people with a high *quest for knowledge* are motivated by incentives associated with knowledge or skill acquisition and problem solving activities. Quest for knowledge is regarded as a two-dimensional personality attribute comprising both intellectual curiosity and a willingness to exert cognitive effort. Lehwald introduced a test for school children (the QPT, or Quest for Knowledge Picture Technique) which consists of a sequence of pictures that are accompanied by predesigned answers in a multiple choice format (grid technique).

Interest. H. Schiefele and colleagues made a major contribution to the theoretical and empirical foundations of the long-neglected construct of interest (Prenzel, 1992; Prenzel & Heiland, 1986; Prenzel, Krapp, & Schiefele, 1986). Interest is defined as having established a close bond between oneself and a field of knowledge. This bond is characterized by certain cognitive (e. g., in-depth knowledge), emotional (e. g., positive feelings), and evaluative features (e. g., assigning a high preference).

Several recent publications have dealt with the effect of interest on academic achievement (for an overview see Krapp, 1989, 1992). Also, the influence of interest on text comprehension has been explored (for an overview see U. Schiefele, 1988, 1991). For example, text comprehension has been enhanced through interest in the theme covered by the text, regardless of relevant previous knowledge. This is true for qualitative aspects of text comprehension but not for quantitative aspects (for a summary see U. Schiefele, 1991; 1992). Schiefele analyzes the mediating role of physiological activation, flow experiences, and specific learning strategies associated with high interest. Prenzel and Heiland (1986) attempted to explain the selectivity and the stability of interests in a process oriented model. The model highlights the interplay of emotional and cognitive consequences of dealing with an area of special interest.

Interest induces more sophisticated knowledge structures (U. Schiefele, 1988; Winteler, Sierwald, & Schiefele, 1988) and better academic achievements (see the meta-analysis by Schiefele, Krapp, & Winteler, 1992). A questionnaire assessing interest in one's major was a better predictor of performance attainments at college than the achievement motive as measured by the Achievement Motive Scale (Gjesme & Nygard, 1970).

Todt (1990) described the central role of interest in personality development, especially with regard to the self-concept of ability and gender identity. Empirical studies concentrated on how interest in certain subjects at school originates. A large number of studies probed the question of why interest in traditional subjects – especially subjects related to natural sciences – decreases over the years of school education (Hoffmann, Lehrke, & Todt, 1985; Lehrke, Hoffmann, & Gardner, 1985). Todt and Händel (1988) analyzed differences in interest between boys and girls. In addition, they conducted extensive questionnaire studies to explore what makes a person interested in a certain subject taught at school. As it turned out, teaching style (e. g., fair grading, support of the less able students) was a crucial determinant. Whereas the studies just described analyzed the development and change of specific interests in youth, other studies (Prenzel et al., 1986) have focused on early childhood (Kasten & Krapp, 1986; Krapp & Fink, 1992).

Activity Incentives. Applying Heckhausen's general model of motivation (Heckhausen, 1977) to a student's motivation to study hard, Rheinberg (1989) came to the conclusion that besides the traditionally described incentives (e. g., anticipated self-evaluation, different forms of other evaluation, superordinate goals), the incentives provided by the activity itself (e. g., studying) have to be taken into account. Considering only traditional incentives, studying should always possess high incentive value. However, the negative incentives commonly associated with sitting down and studying hard may considerably reduce one's motivation to study.

The concept of activity incentive also allows the high motivation for executing seemingly irrational activities to be explained (e. g., dangerous sports such as hang-gliding; Rheinberg, 1989, in press). In numerous interview studies Rheinberg and his colleagues detected the various activity incentives related to different sports. They discovered that activity incentives make it easy to understand why certain sports are performed over and over again without serving a purpose. Rheinberg's approach is diametrically opposed to what is commonly done in research on motivation. Traditionally, researchers start with a certain motive system (e. g., achievement) and look for situations that provide concordant incentives. Rheinberg, in contrast, started with a certain field of activity (e. g., motor cycle riding) and then explored the various incentives associated with engaging in the activity in question.

2.3 Affiliation

In contrast to US-American research, the motivation related to social bonding has not been the topic of much empirical research in Germany, Austria, and Switzerland. Still, Sokolowski (1992) developed a test that measures the affiliation motive. It is based on Heckhausen's (1977) general model of motivation, and permits the assessment of different types of expectations. The semi-projective test material uses the so-called grid technique (Schmalt, 1973). Its complete version contains 20 pictures on the theme of getting to know strangers. Two components of the affiliation motive, that is, "hope for affiliation" and "fear of rejection," can be scored. In a validation study (Sokolowski, 1986), subjects who scored high on fear of rejection reported being more nervous, irritated, and inhibited during social encounters than subjects who scored high on hope for affiliation. Avoidance-motivated subjects also reported more ego-related thoughts and showed a higher level of physiological activation.

2.4 Altruism

In the 1980s and early 1990s, research on altruism became popular in the German-speaking countries (for an overview see Montada & Bierhoff, 1991). Until then, studies on the determinants of prosocial behavior were conducted primarily in the USA. In contrast to the initial studies, which centered primarily on the situational factors of helping behavior (Abele, 1982; Bierhoff, 1982), later research focused on the associated motivational processes. In this context, weighting costs and benefits, diffusion of responsibility, norms, causal attributions, empathy, and emotions were examined as motivators of helping behavior.

There is as yet no commonly shared definition of altruistic behavior, but researchers generally agree on three criteria to differentiate prosocial behavior from other forms of motivated behavior. Prosocial behavior aims at alleviating the troubles of another person, it is performed voluntarily, and it is not motivated by external incentives (e. g., being paid). Moreover, empathy is regarded as a necessary but not sufficient precondition for altruism (Halisch, 1988).

A *developmental approach* to the study of helping behavior was chosen by Halisch (1988), Trommsdorf, Friedlmeier, and Kienbaum (1991), Wender and Gerling (1985), as well as Boehnke, Silbereisen, Eisenberg, Reykowski, and Palmonari (1989). Halisch (1988) reported on research conducted with a new empathy test that employs pictures of others experiencing a hardship. One's inclination to empathize was positively related to actual helping in all age groups. This relation was moderated by various situational features, such as who caused the damage or the intensity of the affective response on the side of the victim (e. g., being mortally grieved).

Christen and Mikula (1983) stress the importance of perspective taking

(i. e., to try to see things from the other's point of view). In a study with boys (aged 11), video feedback on already performed helping led to further helping, whenever subjects were induced to take the perspective of the recipients of help. The authors argue that prompting perspective taking should induce empathy, and thus help should be more easily elicited when others are suffering. Finally, Boehnke, Silbereisen, Eisenberg, Reykowski, and Palmonari (1989) studied prosocial motives in youth. Youths from four different nationalities (aged 11 to 17) were given 12 helping scenarios and were asked to put themselves in the place of the helping person. For each scene they had to rate five potential reasons for helping: (1) the helping behavior in itself is fun (hedonism), (2) a service in return is hoped for (self-concern), (3) things are done faster together (task orientation), (4) help among friends goes without saying (other-directedness), and (5) one does not want to be the only person who does *not* help (conformity). In a cross-sectional analysis (over all age groups), task orientation and other-directedness turned out to be the most prominent reasons for help. Hedonism and self-concern were the least important reasons, with conformity in between. With increasing age, task orientation became more important, whereas conformity decreased. Also, perspective taking and empathy correlated positively with task orientation and other-directedness, but negatively with hedonism and self-concern.

Montada and Schneider (1991) studied the influence of emotions on willingness to help. Of the seven suggested reasons for help (the emotions guilt, pity, anger about injustice, anger about a self-induced predicament, feeling content, fear of losing one's privileges, and feeling hopeless), only guilt and anger had a positive effect on reported willingness to help (on the relationship between guilt and willingness to help see also Bierhoff, Lensing, & Kloft, 1988).

A different approach to studying altruistic behavior was chosen by Krappmann and Oswald (1991). These authors directed attention to the potential rejection of help by the victim. Accepting help may create dependence on the helper, and reduce self-respect, whereas giving help strengthens the position of the helper. These observations reveal that helping and being helped involve issues of power. Engler (1991) pursued similar ideas. He pointed to the negative consequences of seeking help (e. g., admitting one's own incapacity, impairment of self-respect, dependencies) and giving help (e. g., costs and efforts). If expectations of negative consequences predominate, the person in need of help should hesitate to ask for help, or respond negatively to the support received.

2.5 Aggression

Kornadt's aggression theory (1982, 1987) employs motivational theoretical concepts introduced by Atkinson (1957) and Heckhausen (1977). The theory examines the discrete functional elements of an ongoing aggressive action in concert with the personal disposition of the aggression motive (affects, intentions, goal systems, incentives, etc.).

Five areas of inquiry can be differentiated: (1) the structure and functioning of the aggression motive system, (2) the internal processes of hostile aggressive behavior, (3) interindividual differences in habitual aggressiveness, (4) the development of the aggression motive, and finally, (5) measuring the aggression motive.

The Aggression Motive System. Two antagonistic components compose the aggression motive system (Kornadt, 1982, 1987): the approach component "aggression motive" and the avoidance component "aggression inhibition." Both are conceived as latent, enduring personal dispositions – which stimulated by situational conditions – are directed towards achieving or avoiding a specific class of action goals. The anticipation of satisfaction (anger relief) and the fear of negative consequences (guilt feelings, fear of punishment) play a major role. The two components in turn entail a series of distinctive elements (e. g., threshold level of anger, patterns of attribution, superordinate goals and incentives, habitual behavioral strategies, norms, values) which interrelate in a systematic way.

The Course of an Aggressive Action. For an aggressive behavior to emerge, the respective motive system has to be activated by specific situational triggers that induce anger (e. g., caused by a frustrative experience). If the subsequent cognitive evaluation of one's anger (e. g., the attribution of a malicious intention to the frustrator) leads to the belief that the aversive event is "really annoying," general aggression goals are activated (Zumkley, 1981, 1982). The anticipated positive and negative consequences as well as the feasibility of goal achievement are still to be evaluated. On the basis of these deliberations a decision is made whether to pursue the aggressive action goal in question. A positive decision requires that the abstract goal be more concretely specified for the situation at hand and endowed with corresponding action plans. The motivation system is not deactivated until after goal achievement. The theory speaks of "catharsis" (Kornadt, 1982; Kornadt & Zumkley, 1992; Zumkley, 1978).

Individual Differences. The course of an aggressive action is subject to individual differences. For instance, individuals with a marked aggression motive react spontaneously to anger, without undertaking a detailed analysis of the situation (Kornadt, 1982). Even after complete or partial anger relief via retaliation, aggressive persons retain a greater amount of residual anger than nonaggressive persons (Zumkley, 1978). Highly aggressive individuals make more internal attributions as compared to nonaggressives (i. e., external factors are neglected in favor of a hostile intention). This is especially true when there is causal ambiguity with respect to the frustrative experience. With highly aggressive individuals one also finds an increased activation (pulse rate), as well as more anger and retaliation aggression (Zumkley, 1984).

The Aggression Motive: Developmental Aspects. Kornadt (1987) emphasized viewing the genesis of aggression within the context of personality development. More specifically, the aggression motive is discussed in relation to the development of a person's self-esteem. According to Kornadt, the nucleus of the development of aggression is the hereditary predisposition to respond to aversive events with anger. The expression of anger (e. g., facial and postural) is perceived and responded to by the social environment in a unique, culturally determined manner. The anger affect thus constitutes the link between the neurophysiological foundations of aggression and social learning processes.

Cross-cultural studies point to early socialization during infancy, especially the quality of the bond with the mother, as the essential determinant of the genesis of the aggression motive. Early emotional experiences induce a conviction about whether aggression is an appropriate and perhaps even necessary means for coping with frustration and having one's way. Aggression-promoting interpretations of frustrative experiences on the side of the parents and their tendency to react angrily are also important. Finally, the way in which parents enforce rules and prohibitions on their children is significant (Kornadt, 1984, 1987).

Measuring the Aggression Motive. Two instruments are used to measure the two aggression motive components: The Aggression TAT for adults (Kornadt, 1982; Zumkley, 1985) and the Aggression-Motive Grid for children (Burkhardt, Zumkley & Kornadt, 1987; Zumkley, 1987). McClelland's hypothesis (1980) that operant and respondent tests capture different structural aspects of personality was confirmed by Zumkley (1985). He demonstrated that projective tests (operant) measure the unconscious aggression motive, whereas questionnaires (respondent) capture whether a person values aggression.

Differences to Social-Psychological Approaches. Kornadt's motivational approach differs from social psychological research on aggression (e. g., Mummendey, 1984). Social psychologists prefer to analyze aggression as just one special form of social interaction, and as a consequence the central themes of research are people's mutual interpretations of an experienced aggressive exchange, or the escalation of an aggressive interaction. Kornadt, on the other hand, concentrates solely on one side of an aggressive interaction at a time, taking into account one individual with his/her specific enduring personal tendencies, beliefs, affects, and goals. Accordingly, Kornadt's theory primarily refers to the issue of why a certain individual in a given situation becomes involved in an aggressive interaction whereas another does not.

2.6 Power

Surprisingly, German research on motivation in the 1980s and early 1990s did not address the issue of power. The exception is Schmalt (1987). He analyzed the cognitive functioning of people who score low or high on the

power motive. As hypothesized, the subjective experience of being in control is a constituent element of the power motive. People with a high need for power take more responsibility for controllable outcomes and are less plagued by worry cognitions in situations with uncontrollable outcomes than individuals with a low need for power.

3. Control Beliefs and Attributional Style

The importance of cognitive concepts (e. g., competence beliefs, attributions) for theorizing on motivation has been stressed above in the sections on achievement and aggression. We resume the discussion of cognitive concepts here and will concentrate on expectations (beliefs) and attributions on a more general level.

Heckhausen (1977) pointed out the importance of differentiating various types of expectations: (a) situation-outcome expectancy (i. e., does a specific situation by itself lead to a desired action outcome); (b) action-outcome expectancy (i. e., can a desired action outcome be achieved by one's own actions); and (c) outcome-consequence expectancy (i. e., does the action outcome lead to desired or feared consequences). At approximately the same time, Bandura (1977) also emphasized the importance of expectations. His differentiation of expectations, however, was somewhat different. He distinguished two types: (a) self-efficacy beliefs (i. e., does one possess the potential to realize desired actions); and (b) outcome expectancy beliefs (i. e., does the successful execution of the critical actions lead to the desired consequences).

Within the framework of control theories, action-outcome expectancies or self-efficacy beliefs have been dealt with most extensively (see the monographies and edited books of Baltes & Baltes, 1986; Flammer, 1990; Görlitz, 1983; Krampen, 1982, 1989 a; Mielke, 1982; Preiser, 1988; Schwarzer, 1992 a). What is shared by these theoretical considerations is that they all posit that control beliefs are relatively stable person attributes. In addition, control beliefs are assigned great importance in setting and realizing goals. The concept of "control" refers to whether the person believes that he or she has access to certain entities. A control belief in the sense of Bandura's (1977) self-efficacy belief refers to access to (or control over) certain desired behaviors (e. g., studying hard). The action-outcome expectancy of Heckhausen (1977) can also be paraphrased as a control belief; here it is the access to the complete array of actions that serve a desired outcome (e. g., getting an A in a math course). In both cases, it seems plausible to assume that within certain domains these beliefs are relatively stable over time and will be drawn on by people whenever they attempt to set themselves goals or achieve chosen goals. People should not choose goals that imply actions they feel are out of their reach. Also, they should fail to persist in trying to attain such goals.

Research on control beliefs is therefore of great importance to the motiva-

tional issues of goal setting and goal achievement. Indeed, Bandura (1990) reported that people with high self-efficacy beliefs choose more aspiring goals and persist longer in the face of hindrances and setbacks. Attributional style, a stable predisposition to attribute certain causes to positive and negative outcomes, has also been shown to have motivational consequences (Seligman, 1990). This is not surprising, as certain attributional patterns (e. g., attributing failures to stable causes) foster the belief that desired action outcomes cannot be reached. If failures are attributed to *global* stable causes, people become hopeless across all walks of life. Seligman (1990) speaks of attributional pessimism.

3.1 Research on Control Beliefs

Research on the locus of control, as described in Rotter's (1954) social learning theory, is commonly considered to be the origin of research on control beliefs. Rotter focused on whether people believe their behaviors to be internally caused (internal locus of control) or externally determined (external locus of control). Control beliefs in Rotter's sense are the result of social learning experiences which are transmitted during childhood by socialization conditions within the family (Krampen 1987 b, 1989 b; Schneewind, 1985; Nowicki & Schneewind, 1982) and school (Krampen, 1987 a; Supersaxo, Perez, & Kramis, 1986; Rheinberg, 1980, 1983).

In applying the construct of control beliefs, researchers often confound agency and contingency beliefs. This problem is pointed out by Skinner, Chapman, and Baltes (1988 a, 1988 b) in research on school performance. These authors distinguish three basic entities of goal-directed behavior, namely actor, various means, and an outcome or end. General control beliefs pertain to children's sense of having access to positive performance attainments (i. e., good school grades). Means-ends beliefs or causality beliefs refer to the link between means and performance outcomes: Do causal means (such as ability, luck, powerful others, effort) help to get good grades? Finally, agency beliefs refer to successfully applying these means; it is these types of beliefs that are most similar to Bandura's self-efficacy beliefs. The different developmental patterns of these various types of beliefs make Skinner, Chapman, and Baltes argue that they capture qualitatively different aspects of control. This is also supported by the results of factor analyses conducted on the "Control, Agency, and Means-ends Interview" (CAMI), which was designed to measure these three different types of control beliefs.

In a study by Oettingen, Little, Lindenberger, and Baltes (1994) schoolchildren in East and West Berlin were compared to explore the effect of culturally determined variations in the school context on agency beliefs. East Berlin children evidenced lower agency beliefs than children from West Berlin. Following Bandura's work, this implies that East Berlin children should show more motivational deficits than West Berlin children. In addition, the link between agency beliefs and grades was stronger in the East Berlin as

compared to the West Berlin sample. The students from East Berlin are apparently more restricted by their teacher's performance evaluations than the West Berlin students.

The effect of control beliefs on behavior and affective experiences has also been analyzed in experimental studies on performance deficits (e. g., Hammerl, Grabitz, & Riemann, 1988), in research on political participation (H. Dörner & Kumpf, 1991; Krampen, 1991), health psychology (Schwarzer, 1992 b), theories of personality (Krampen, 1988), and in research on life-span development (Baltes & Baltes, 1986; J. Brandtstädter, 1984; Flammer, 1990).

Life-span psychologists distinguish between primary and secondary control. Secondary control (in the sense of Rothbaum, Weisz, & Snyder, 1982) consists of cognitive adaptation, whereas primary control entails actively changing one's physical and social surroundings. In old age, when physical infirmities restrict the array of potential activities, secondary control (e. g., underestimation of one's age, ascribing positive attributes to oneself and negative attributes to others) helps to maintain a feeling of control and self-efficacy (Dittmann-Kohli, 1989; Philipp & Ferring, 1989; J. Heckhausen, 1992; Schulz, Heckhausen, & Locher, 1991).

J. Brandtstädter and colleagues have focused on developmental change in control beliefs related to successful aging. They distinguished between assimilative and accommodative coping strategies, both of which are said to be triggered by detecting discrepancies between a desired and the actual developmental process. Assimilative coping attempts to secure goal realization by expending more effort or choosing alternative routes to goal achievement. Accommodative coping sets in when assimilative coping has failed. Through accommodative coping, goal discrepancies are reduced via subjective reinterpretations of one's attainments and aspirations. In general, people switch from the assimilative to the accommodative mode of coping when they get older (J. Brandtstädter, 1989; J. Brandtstädter & Greve, 1992; J. Brandtstädter, Krampen, & Greve, 1987; J. Brandtstädter & Renner, 1990).

3.2 Research on Attributional Style

Seligman's research on attributional style (Peterson & Seligman, 1984; Seligman, 1990; Zullo, Oettingen, Peterson, & Seligman, 1988) has also stimulated German-speaking psychologists (Brunstein, 1990, in press; Oettingen & Seligman, 1990; Stiensmeier-Pelster, 1988).

In a cross-cultural study prior to the fall of the wall in Germany, East and West Berliners' attributional styles and depressive symptoms were assessed by Oettingen and Seligman (1990). East Berlin workmen observed in neighborhood bars in 1985 showed more expressive behavior consistent with depression than workmen in equivalent bars in West Berlin. The authors also measured pessimism by assessing explanatory style for sporting events at the 1984 Winter Olympic Games in newspaper reports on both sides of the wall. Despite having more Olympic victories to report, East Berlin newspaper ac-

counts were more pessimistic (i. e., less stable and less global about positive events and comparatively more global when explaining negative events). Oettingen (1993) reports that the differences in expressive behavior had vanished in a follow-up observational study conducted in the same bars in 1991, that is, 2 years after the fall of the wall.

According to Försterling (1988), attributional style also affects psychological disorders (see also Brand, 1982). Attributional training can prevent or remedy emotional impairments and is therefore a constitutive part of various forms of cognitive therapy (e. g., Beck's [1967] "Cognitive Therapy of Depression"; Ellis' [1984] "Rational Emotive Therapy"). Clients are trained to use covariation information that allows them to see the irrationality of their beliefs. However, it is not only attributional style that has motivational effects. As it turns out, episodic attributions are also of importance for goal setting and goal realization (e. g., Försterling & Rudolph, 1988; Haisch, 1987, 1989; Krahe, 1985; Montada, 1988; Mummendey, 1984; Oswald, 1989; Schmalt, 1986; Schwarzer & Weiner, 1991; Westermann & Siedersleben, 1990).

3.3 Control Beliefs vs. Attributional Style

Attributions refer to the causes of the occurrence of certain events, whereas control beliefs relate to one's potential to control certain entities (e. g., some specific behavior, effort, important others). Attributions and control beliefs have recently been discussed in terms of their similarities and reciprocal influences. In this context, attribution researchers are no longer hesitant to consider certain patterns of attributions in terms of relatively stable personality attributes (e. g., Stiensmeier-Pelster & Schürmann, 1990). Research on control beliefs, on the other hand, is going the other direction. It is recognized that people's control beliefs may not be as stable and general as originally thought. Actually, they may vary depending on the situational context and entity of control at hand (e. g., Krampen, 1986; Skinner, Chapman, & Baltes, 1988 a, 1988 b).

German researchers have used the following questionnaires to assess attributional style and control beliefs (for an overview see Krampen, 1989 a): Schneewind and Pausch (1990) presented a questionnaire for children and youths (MBAF-K) which measures attributional style and control beliefs. A German version of Seligman's Attributional Style Questionnaire (ASQ; Peterson, Semmel, von Baeyer, Abramson, Metalsky, & Seligman, 1982) is offered by Stiensmeier, Kammer, Pelster, and Niketta (1985) and Brunstein (1986). Skinner, Chapman, and Baltes (1988 a, 1988 b) developed the "Control, Agency, and Means-ends Interview" (CAMI), which assesses causality beliefs, self-efficacy beliefs, and general control beliefs in the realm of school performance. Dispositional optimism in the sense of high general self-efficacy is measured through a scale developed by Jerusalem and Schwarzer

(1992). Finally, Ferring and Filipp (1989) presented a questionnaire that measures health-related control beliefs (FEGK).

4. Volition: The Issue of Goal Achievement

German psychology has long had an interest in issues of volition, dating back to the turn of the century (for a summary see Ach, 1935). With the triumphant progress of expectancy \times value models of motivation (Lewin, Dembo, Festinger, & Sears, 1944; Atkinson, 1957) it fell in oblivion. There is new research emerging, however, on the many questions related to goal realization (volition) spear-headed by Kuhl (1983, 1984, 1986), Heckhausen (Heckhausen & Kuhl, 1985; Heckhausen, 1987a, 1991; Heckhausen & Gollwitzer, 1987; Heckhausen, Gollwitzer, & Weinert, 1987), and Gollwitzer (1990, 1991, 1993). The starting point of this research is the traditional German will psychology and its controversies (Ach, 1935; Lewin, 1926; Selz, 1910). If there was one issue on which German will psychologists agreed, it was the belief that *goal choice* (motivation) and *goal achievement* (volition) are guided by different principles. Kuhl (1983) built on this conviction by introducing the concepts of "selection motivation" and "realization motivation." The distinction between motivation and volition is also at the basis of Heckhausen's (1991) and Gollwitzer's (1990, 1991, 1993) theorizing.

4.1 Action Control Theory

The action control theory postulates self-regulatory processes which contribute to goal achievement in the face of competing action tendencies (Kuhl, 1983, 1984; Kuhl & Beckmann, 1994). It is assumed that at any given point in time many different action tendencies waxing and waning in strength coexist (Atkinson & Birch, 1970; see also Dörner, 1986). The predominant episodic view in the psychology of motivation, however, studied just one selected action goal and thus only a relatively small section of the action flow. For an ordered action sequence to occur, Kuhl assumes that a current guiding goal has to be shielded from competing intentions. He terms this shielding mechanism *action control*. The following action control strategies are distinguished: selective attention, encoding control, emotion control, motivational control, environmental control, parsimonious information processing, and context matching (Kuhl, 1984). Selective attention, for example, helps goal achievement by putting that information into the center of attention which is most relevant for the current goal, with all irrelevant information faded out. These strategies can be drawn on actively (i. e., consciously) or they can occur passively (i. e., not intentionally controlled).

Whether these control strategies are used depends on the current control mode of the individual. An *action-oriented* person concentrates on the plan-

ning and initiating of goal-directed action, responds flexibly to the respective contextual demands, and employs the listed control strategies effectively. Things are quite different with a *state-oriented* person. This person cannot disengage from competing incomplete goals and is caught up in dysfunctional persevering thoughts directed to past or future successes and failures. State orientation may be induced by situational variables (e. g., a surprising event, persistent failure), but it is also founded in a personal disposition. The quality of a person's control orientation can be measured with a questionnaire developed by Kuhl (1985; see also Sack & Witte, 1990). The new version of the questionnaire is published in Kuhl and Beckmann (1994). The model of action control has seen many refinements (see Kuhl & Beckmann, 1994) and has arrived at a high level of complexity. It is now assumed that action control cannot be understood without considering the many different mental subsystems involved.

Various aspects of action control theory have been tested (for summaries see Kuhl & Beckmann, 1985, 1994; Beckmann & Kuhl, 1984; Kuhl, 1983; Kuhl & Beckmann, 1983; Kuhl & Helle, 1986; Kuhl & Kazén-Saad, 1988; Kuhl & Kraska, 1989; Kuhl, Kraska, & Christ, in press; Kuhl & Wassiljew, 1985). The central assumption that goal achievement is more likely in an action-oriented control mode than in a state-oriented mode was supported (Brunstein & Olbrich, 1985; Kuhl, 1982; Kuhl & Geiger, 1986; Stiensmeier & Schnier, 1988; for a critique see Sack & Witte, 1989). The situational antecedents of both control orientations were analyzed by Stiensmeier (1985, 1986). Further studies have related to decision making under time pressure, coping with school related stress (Bossong, Klassen-Edinger, & von Saldern, 1988), and high performance athletes (e. g., Beckmann & Strang, 1991; Heckhausen & Strang, 1988). The concept of action and state orientation has also stimulated research in clinical psychology (Hartung & Schulte, 1991; Hörhold, Walschburger, & Straub, 1989; Kuhl & Helle, 1986; Stiensmeier-Pelster, Meyza, & Lenzen, 1989) and work psychology (e. g., Beckmann & Antoni, 1989).

4.2 Development of Self-regulatory Strategies

Bullock and Lütkenhaus (1988; Lütkenhaus & Bullock, 1991) were interested in the question of when children first evidence self-regulation. Whereas Lütkenhaus and Bullock (1991) studied the precursors of action regulation in infants, Kuhl, Kraska, and Christ (in press; Kuhl & Kraska, 1989; see also Sydow, 1990) dealt with children in primary school (aged 6 to 10). Effective action regulation in primary school children depended on whether they possess knowledge on how to overcome difficulties during goal pursuit. For example, they must be aware of the fact that under certain circumstances (e. g., in a situation of temptation) it may be hard to stick to one's goal (concept of impulsivity, difficulty of enactment). Also, children have to be able to commit themselves to a goal (commitment), otherwise they will lose sight of it

in diverting situations. Finally, the accessibility of different volitional strategies (see above) determines effective self-regulation. The authors developed a "Self-regulation and Concentration Test for Children" that measures self-regulatory potential.

4.3 Learned Helplessness

Seligman's theory of learned helplessness (Seligman, 1975; Peterson & Seligman, 1984) found interest in German-speaking research on motivation through Kuhl's interpretation of the classic helplessness findings (Kuhl, 1981, 1983, 1984; summarized by Brunstein, 1990; Stiensmeier-Pelster, 1988). Whereas Seligman and colleagues interpret helplessness after a series of failures as a motivational deficit via reduced subjective probability of success, Kuhl understands helplessness as a problem of action control (a functional deficit). He assumes that achievement deficits after a string of uncontrollable failures are a result of persevering state-oriented thoughts. Instead of employing useful action control strategies, attention is focused on the aspects threatening self-esteem. A series of experiments support the hypothesis (e. g., Brunstein & Olbrich, 1985) that dispositional state orientation is a risk factor for experiencing helplessness after uncontrollable failure. State-oriented as compared to action-oriented subjects became helpless earlier, had more difficulties in concentrating, used less effective problem-solving strategies, and exhibited a lower quality of performance. Thinking aloud protocols evidence more self-concern (e. g., doubts about their ability) with state-oriented subjects than action-oriented subjects. In contrast, action-oriented subjects were optimistic and task oriented. Stiensmeier-Pelster and Schürmann (1990) claimed that state orientation after repeated uncontrollable failures only originates when the failures are attributed to uncontrollable and internal factors.

Recently, Brunstein (in press) observed that goal commitment can immunize people against helplessness effects. Brunstein draws on self-completion research suggesting that difficulties in goal achievement lead to reinforced effort whenever there is high goal commitment and access to an alternative route to goal achievement (Wicklund & Gollwitzer, 1982). Beckmann's (1987, 1990, in press) model of two levels of action control also specifies conditions that turn initially unfavorable determinants of performance (e. g., lack of action incentive, noise, diversion through the presence of other people) into effective instigators of effort and performance enhancement. If intentionally employed action control strategies (*cognitive* regulation level) fail, an autonomous action regulation is assumed to set in (*autonomous* regulation level). Thus, when the source of disturbance disappears, short-term improvements in achievement can occur due to the inertia of the autonomous regulation.

4.4 Action Phases and Mind-sets

The Rubicon model of action phases (Gollwitzer, 1990, 1991; Heckhausen, 1987b, 1991) integrates motivational and volitional issues within a single theoretical framework, but at the same time takes into account their different functioning. The model takes a comprehensive temporal (horizontal) view on the course of goal pursuit which extends from the origins of a person's wishes and desires to the evaluation of attained outcomes. It is suggested that the course of goal pursuit entails four different, consecutive action phases. People are expected to solve a qualitatively distinct problem at each of these phases.

In the first action phase, called predecisional, people *deliberate* wishes and desires in an attempt to set priorities. The subsequent phase is characterized by efforts to promote the initiation of relevant actions via effective *planning*. Once relevant actions are initiated, the *actional* phase begins, and when these actions have led to some kind of outcome, the *evaluative* phase (where the individual compares what has been achieved with what was desired) is entered. Phenomena which relate to the realization of goals (planning and acting) are defined as *volitional*, whereas the deliberation and the choice of action goals as well as the final evaluation are regarded as classic phenomena of *motivation*.

The model first of all stimulated research activities concentrated on proving the differences between motivation and volition by demonstrating that becoming involved with motivational problems leads to a different type of information processing than being involved with volitional problems (see Beckmann & Gollwitzer, 1987; Gollwitzer, 1990, 1991; Gollwitzer, Heckhausen, & Ratajczak, 1990; Gollwitzer & Kinney, 1989; Gollwitzer, Heckhausen, & Steller, 1990; Heckhausen & Gollwitzer, 1987). It turned out that deliberating and planning are each accompanied by a unique cognitive orientation (mind-set). The deliberative mind-set has the following features: (a) Information that relates to the desirability and feasibility of wishes is processed effectively. (b) Positive and negative incentives are impartially weighed and the feasibility of wishes is accurately estimated. Finally, (c) there is great openness toward processing all kinds of information available. The implemental mind-set, in contrast, is characterized by: (a) effective processing of information that relates to the implementation of the chosen goal, (b) an overestimation of the desirability of the chosen goal as well as an illusory positive view of its feasibility, and (c) a certain closed-mindedness with respect to irrelevant information.

Mind-set studies by Gollwitzer and Kinney (1989) are relevant to the discussion as to when illusory optimism (Taylor, 1989) becomes dysfunctional to a person's goal pursuit. Taylor (1989) reported a series of studies which unanimously demonstrate that an overestimation of one's own possibilities of control promotes successful goal achievement. This observation has given rise to the critical question of when illusory optimism loses this positive con-

sequence. The answer either relates to the extent of illusory thinking (Baumeister, 1989) or to the quality of positive thinking (Oettingen & Wadden, 1991; fantasy- vs. expectancy-guided thinking). The mind-set studies by Gollwitzer and Kinney (1989) suggest a further solution to this problem: When the choice of action goals is the issue, illusory optimism should be dysfunctional because it would lead to choosing goals which cannot be realized. However, overestimating the feasibility of goal attainment is beneficial whenever the realization of a chosen goal is at stake because this should lead to heightened persistence in case of barriers and hindrances.

4.5 Goal Achievement: The Role of Intentions

Gollwitzer (1993) differentiates between two types of intentions, namely *goal intentions* and *implementation intentions*. Goal intentions specify a desired end state that may be the outcome of a single action episode or of a complex sequence of actions. By forming a goal intention the individual sets priorities between competing wishes and desires. A commitment is created to achieve the chosen goal. Implementation intentions, on the other hand, specify when, where, and how a chosen goal is to be implemented. They reduce conflict between different routes of implementation. A commitment is created to achieve one's goal as specified in the implementation intention (see Gollwitzer & Liu, in press).

How do *goal intentions* promote goal striving? Foremost and most importantly they induce goal striving by the experience of incompleteness whenever there is a discrepancy between the specified goal and one's actual standing. This has been demonstrated, for instance, by Wicklund and Gollwitzer (1982; Gollwitzer & Wicklund, 1985 b) in their research on symbolic self-completion. Self-completion theory centers on goals that relate to a person's identity (self-defining goals, such as being a good parent). The realization of self-defining goals is conceptualized as the acquisition of relevant identity symbols (e. g., spending the weekend with the children). In a series of empirical studies it could be demonstrated that such goal striving (called self-symbolizing) sets in whenever the person experiences a self-definitional shortcoming (e. g., having forgotten one's child's birthday; Gollwitzer, 1986; Gollwitzer, Wicklund, & Hilton, 1982; Rheinberg, Schwarz, & Singer, 1987; Wagner, Wicklund, & Shaigan, 1990; Wicklund & Gollwitzer, 1981). Self-symbolizing efforts are more successful when they are registered by others (Gollwitzer, 1986). The self-symbolizing individual's relating to others is, however, not to be conceived as a mutual interactional exchange; because of its egocentric features it has to be considered as only pseudosocial (Gollwitzer & Wicklund, 1985 a).

On the basis of the self-completion theory and recent ideas on the differentiation of motivation and volition, Gollwitzer (1987) presented a model of intentional identity development. Within this framework, the concept of unquenchable goal intentions is of central importance as it appears that identity

related goal intentions never can be conclusively achieved. Thus, they provide a permanent source for the stimulation of further goal pursuit (see also J. Brandstätter & Greve, 1992).

Gollwitzer (1993) has postulated that *implementation intentions* promote goal achievement quite differently than goal intentions. With the intention to strive for a specific goal (goal intention), goal achievement is by no means certain. It maybe that one gets caught up in a decisional conflict between several potential routes of implementation or that in a given situation different goal intentions collide with each other in competing for access to action. It may also happen that a relevant opportunity is overlooked because it only occurs for a very short time or attention had been diverted by other things. A powerful strategy for combating these problems of getting started with goal implementation is to furnish one's goals with implementation intentions. A mental link is formed between an anticipated situative context (an opportunity for action) and the intended action in the sense of an "if-then" rule. Given the goal of seeing one's dentist, achievement of this goal becomes more likely if one commits oneself to when, where, and how one intends to make an appointment.

In two field studies (one correlational and one experimental), Gollwitzer and Brandstätter (1990) analyzed whether implementation intentions actually promote goal achievement. Indeed, goal intentions that were furnished with implementation intentions were realized in more than 60% of the cases, whereas this was only true for about 30% of the pure goal intentions (no additional implementation intentions formed). The beneficial effects of implementation intentions in goal achievement have also been demonstrated by Gollwitzer, Heckhausen, and Ratajczak (1990).

How do implementation intentions promote goal achievement? This issue was explored in various experiments. It was assumed that through forming implementation intentions the individual may switch from self-control to direct control (Bargh & Gollwitzer, in press) of goal-directed action. The triggering stimulus is the situational context (opportunity) specified in the implementation intention. This direct control is based on two psychological processes. One is the heightened accessibility of the specified situational context. It could be demonstrated that the specified opportunity is not only detected more easily when it occurs (Steller, 1992), it can also draw attention to itself, and it is more easily retrieved from memory (Gollwitzer, 1993). The second process relates to the automation of action initiation. Brandstätter (1992) discovered that the goal-directed action specified in the implementation intention (intended action) is initiated comparatively more swiftly, and that this effect occurs even under conditions of high cognitive load. Moreover, the initiation of the intended action does not need a conscious intent (Malzacher, 1992). It appears then that the initiation of intended actions carries features of automatic action control. This implies that forming implementation intentions frees cognitive capacity for the conscious control of concurrent actions. However, there is a price to be paid. As hinted at by Heckhausen and

Beckmann (1990) in their detailed categorization of action slips, implementation intentions may lead to the initiation of actions that are no longer desired.

5. References

- Abele, A. (1982). Hilfsbereitschaft in Abhängigkeit von Aufgaben- und sozialer Struktur der Situation. Ein Experiment zum Interventionsverhalten. *Zeitschrift für Experimentelle und Angewandte Psychologie*, 29, 1–23.
- Ach, N. (1935). Analyse des Willens. In E. Abderhalden (Ed.), *Handbuch der biologischen Arbeitsmethoden* (Vol. 6). Berlin: Urban und Schwarzenberg.
- Allmer, H. (1987). Verbale und non-verbale Lehrersanktionen nach Erfolg: Begaunungs- und Anstrengungsannahmen des Lehrers als vorauslaufende Bedingungen. *Zeitschrift für Pädagogische Psychologie*, 1, 197–203.
- Arnold, E., & Collani, G. von (1985). Kausale oder teleologische Erklärungen? Zur Attribution von Handlungen und Ereignissen durch Ursachen und Gründe. *Zeitschrift für Experimentelle und Angewandte Psychologie*, 32, 523–538.
- Atkinson, J. W. (1957). Motivational determinants of risk-taking behavior. *Psychological Review*, 64, 359–372.
- Atkinson, J. W., & Birch, D. A. (1970). *A dynamic theory of action*. New York: Wiley.
- Baltes, M. M., & Baltes, P. B. (Eds.) (1986). *The psychology of control and aging*. Hillsdale, NJ: Erlbaum.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191–215.
- Bandura, A. (1990). Self-regulation of motivation through anticipatory and self-reactive mechanisms. In R. Dienstbier (Ed.), *Nebraska symposium on motivation* (Vol. 38, pp. 69–164). Lincoln: University of Nebraska Press.
- Bargh, J. A., & Gollwitzer, P. M. (in press). Environmental control of goal-directed action: Automatic and strategic contingencies between situations and behavior. *Nebraska symposium of motivation* (Vol. 41).
- Baumeister, R. F. (1989). The optimal margin of illusion. *Journal of Social and Clinical Psychology*, 8, 176–189.
- Beck, A. T. (1967). *Depression: Causes and treatment*. Philadelphia: University of Pennsylvania Press.
- Becker-Carus, C. (1983). Motivationale Grundlagen der Nahrungs- und Flüssigkeitsaufnahme. In H. Thomae (Ed.), *Enzyklopädie der Psychologie, Teilband C/IV/2, Psychologie der Motive* (pp. 12–69). Göttingen: Hogrefe.
- Beckmann, J. (1987). Metaprocesses and the regulation of behavior. In F. Halisch, & J. Kuhl (Eds.), *Motivation, intention, and volition* (pp. 371–386). Berlin: Springer-Verlag.
- Beckmann, J. (1990). Wann wirken sich ungünstige Bedingungen leistungsfördernd aus? Überprüfung eines Zwei-Ebenen-Modells der Handlungskontrolle. *Zeitschrift für Experimentelle und Angewandte Psychologie*, 37, 16–30.

- Beckmann, J. (in press). *Kognitive und autonome Handlungskontrolle*. Göttingen: Hogrefe.
- Beckmann, J., & Antoni, C. (1989). An action control conceptualization of goal-setting and feedback effects. In U. Kleinbeck, H. H. Quast, H. Thierry, & H. Häcker (Eds.), *Work motivation* (pp. 41–52). Englewood Cliffs, NJ: Erlbaum.
- Beckmann, J., & Gollwitzer, P. M. (1987). Deliberative versus implemental states of mind: The issue of impartiality in predecisional and postdecisional information processing. *Social Cognition*, 5, 259–279.
- Beckmann, J., & Kuhl, J. (1984). Altering information to gain action control: Functional aspects of human information processing in decision making. *Journal of Research in Personality*, 18, 224–237.
- Beckmann, J., & Strang, H. (1991). Handlungskontrolle im Sport. *Sportpsychologie*, 5, 5–10.
- Bierhoff, H. W. (1982). Determinanten hilfreichen Verhaltens. *Psychologische Rundschau*, 33, 289–304.
- Bierhoff, H. W., Lensing, L., & Kloft, A. (1988). Hilfreiches Verhalten in Abhängigkeit von Vergehen und positiver Verstärkung. In H. W. Bierhoff & L. Montada (Eds.), *Altruismus – Bedingungen der Hilfsbereitschaft* (pp. 154–178). Göttingen: Hogrefe.
- Blickle, G. (1991). Anregungsbedingungen für scheinbar paradox(al)e Wirkungen von Lob und Tadel. *Zeitschrift für Pädagogische Psychologie*, 5, 21–32.
- Boehnke, K., Silbereisen, R. K., Eisenberg, N., Reykowski, J., & Palmonari, A. (1989). Developmental pattern of prosocial motivation: A cross-national study. *Journal of Cross-Cultural Psychology*, 20, 219–243.
- Bohner, G., Bless, H., Schwarz, N., & Strack, F. (1988). What triggers causal attributions? The impact of valence and subjective probability. *European Journal of Social Psychology*, 18, 335–345.
- Bornewasser, M. (1985). Mißattribution als Möglichkeit der Dissonanzreduktion nach unerwartetem Erfolg bzw. Mißerfolg in Leistungssituationen. *Psychologische Beiträge*, 27, 86–101.
- Bossong, B. (1988). Leistungsangst und Disengagement als selbstbehindernde Strategien. *Zeitschrift für Pädagogische Psychologie*, 2, 119–126.
- Bossong, B., Klassen-Edinger, M., & Saldern, M. v. (1988). Handlungsorientierung und Engagement als vermittelnde Prozesse zwischen Anforderungen und Leistungsangst bei Schülern in Paraguay. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 20, 277–290.
- Bossong, B., & Löffler, I. (1985). Leistungsmotivation, extern gesetzte Standards und Leistung. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 17, 124–137.
- Brand, J. (1982). Kontrollerwartung, Ursachenattribution und psychische Störungen. *Zeitschrift für Klinische Psychologie*, 11, 155–176.
- Brandstätter, V. (1992). *Der Einfluß von Vorsätzen auf die Handlungsintention: Ein Beitrag zur willenspsychologischen Frage der Realisierung von Absichten*. Frankfurt/M: Lang.

- Brandtstädter, J. (1984). Action development and development through action. *Human Development, 27*, 115–119.
- Brandtstädter, J. (1989). Personal self-regulation of development: Cross-sequential analyses of development-related control beliefs and emotions. *Developmental Psychology, 25*, 96–108.
- Brandtstädter, J., & Greve, W. (1992). Das Selbst im Alter: Adaptive und protektive Mechanismen. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie, 24*, 269–297.
- Brandtstädter, J., Krampen, G., & Greve, W. (1987). Personal control over development: Effects on the perception and emotional evaluation of personal development in adulthood. *International Journal of Behavioral Development, 10*, 99–120.
- Brandtstädter, J., & Renner, G. (1990). Tenacious goal pursuit and flexible goal adjustment: Explication and age-related analysis of assimilative and accommodative strategies of coping. *Psychology and Aging, 5*, 58–67.
- Brunstein, J. C. (1986). Attributionsstil und Depression: Erste Befunde zur Reliabilität und Validität eines deutschsprachigen Attributionsstil-Fragebogens. *Zeitschrift für Differentielle und Diagnostische Psychologie, 7*, 45–53.
- Brunstein, J. C. (1990). *Hilflosigkeit, Depression und Handlungskontrolle*. Göttingen: Hogrefe.
- Brunstein, J. C. (in press). Entwicklung und Stand der Hilflosigkeitsforschung. In H. Heckhausen, & J. Kuhl (Eds.), *Enzyklopädie der Psychologie, Teilband C/IV/4, Motivation, Volition und Handlung*. Göttingen: Hogrefe.
- Brunstein, J. C., & Olbrich, E. (1985). Personal helplessness and action control: Analysis of achievement-related cognitions, self-assessments, and performance. *Journal of Personality and Social Psychology, 48*, 1540–1551.
- Bullock, M., & Lütkenhaus, P. (1988). The development of volitional behavior in the toddler years. *Child Development, 59*, 664–674.
- Bullock, M., & Lütkenhaus, P. (1990). Who am I: Self-understanding in toddlers. *Merrill-Palmer Quaterly, 36*, 217–238.
- Burkhardt, K., Zumkley, H., & Kornadt, H. J. (1987). Das Aggressions-Motiv-Gitter: Konstruktion und erste Ergebnisse. *Diagnostica, 33*, 339–353.
- Chapman, M., Skinner, E. A., & Baltes, P. B. (1990). Interpreting correlations between children's perceived control and cognitive performance: Control, agency, or means-ends beliefs? *Developmental Psychology, 26*, 246–253.
- Christen, M., & Mikula, G. (1983). Zum Einfluß von Videofeedback auf Hilfestellungsverhalten. *Zeitschrift für Experimentelle und Angewandte Psychologie, 30*, 573–587.
- Covington, M. V., Omelich, C. L., & Schwarzer, R. (1986). Anxiety, aspirations, and self-concept in the achievement process: A longitudinal model with latent variables. *Motivation and Emotion, 10*, 71–88.
- Dittmann-Kohli, F. (1989). Erfolgreiches Altern aus subjektiver Sicht. *Zeitschrift für Gerontopsychologie und -psychiatrie, 2*, 301–307.
- Dörner, D. (1986). Intention memory and intention regulation. In F. Klix & H. Hagen-dorf (Eds.), *Human memory and cognitive capabilities: Mechanisms and performances* (pp. 929–939). North-Holland: Elsevier.

- Dörner, H., & Kumpf, M. (1991). Die Bedeutung des Kontrollerlebens für die Protestbereitschaft – ein handlungstheoretischer Ansatz und seine empirische Überprüfung. *Zeitschrift für Sozialpsychologie*, 25, 25–36.
- Duss, B., Kramis, J., & Perrez, M. (1984). Leistungsmotivation von Schülern und elterliches Bekräftigungsverhalten beim Hausaufgabenmachen. *Psychologie in Erziehung und Unterricht*, 31, 256–262.
- Eder, F. (1989). Das Schul- und Klassenklima in der Wahrnehmung hochleistungsdisponierter Schüler. *Zeitschrift für Pädagogische Psychologie*, 3, 109–122.
- Ellis, A. (1984). The essence of RET. *Journal of Rational-Emotive Therapy*, 2, 19–25.
- Engler, U. (1985). Wie Schüler verschiedenen Alters im Urteil von Erwachsenen Lob wahrnehmen. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 17, 351–355.
- Engler, U. (1991). Seeking help and thoughts about the helper. In L. Montada & H. W. Bierhoff (Eds.), *Altruism in social systems* (pp. 130–141). Toronto: Hogrefe.
- Engler, U., Mittag, W., & Meyer, W. U. (1986). Bedingungen und Folgen des Zuweisens von Aufgaben verschiedener Schwierigkeit. *Archiv für Psychologie*, 138, 23–37.
- Faber, G. (1989). Fehlerartspezifische Selbsteinschätzung im Kontext von Schüler-selbstkonzepten, Rechtschreibleistung und Lehrerurteilen. *Zeitschrift für Pädagogische Psychologie*, 3, 181–191.
- Fähndrich, D., & Schneider, K. (1987). Emotional reactions of preschool children while exploring and playing with a novel object. *Journal of Genetic Psychology*, 148, 209–217.
- Ferring, D., & Filipp, S. H. (1989). Bewältigung kritischer Lebensereignisse: Erste Erfahrungen mit einer deutschsprachigen Version der "Ways of Coping Checklist." *Zeitschrift für Differentielle und Diagnostische Psychologie*, 10, 180–199.
- Fiedler, K., & Gebauer, A. (1986). Egozentrische Attributionen unter Fußballspielern. *Zeitschrift für Sozialpsychologie*, 17, 173–176.
- Filipp, S. H., & Ferring, D. (1989). Zur Alters- und Bereichsspezifität subjektiven Alterserlebens. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 21, 279–293.
- Fiske, S. T. (1993). Social cognition and social perception. *Annual Review of Psychology*, 44, 155–194.
- Flammer, A. (1990). *Erfahrung der eigenen Wirksamkeit. Einführung in die Psychologie der Kontrollmeinung*. Bern: Huber.
- Försterling, F. (1988). *Attribution theory in clinical psychology*. Chichester: Wiley.
- Försterling, F. (1989). Models of covariation and attribution: How do they relate to the analogy of analysis of variance? *Journal of Personality and Social Psychology*, 57, 615–625.
- Försterling, F. (1992 a). Attributionsverzerrungen vor dem Hintergrund alter und neuer Kovariationsmodelle. *Zeitschrift für Sozialpsychologie*, 23, 179–193.
- Försterling, F. (1992 b). The Kelley model as an analysis of variance analogy: How far can it be taken? *Journal of Experimental Social Psychology*, 28, 475–490.

- Försterling, F., & Groeneveld, A. (1983). Ursachenzuschreibungen für ein Wahlergebnis: Eine Überprüfung von Hypothesen der Attributionstheorie in einer Feldstudie anhand der niedersächsischen Kommunalwahlen 1981. *Zeitschrift für Sozialpsychologie, 14*, 262–269.
- Försterling, F., & Rudolph, U. (1988). Situations, attributions, and the evaluation of reactions. *Journal of Personality and Social Psychology, 54*, 225–232.
- Försterling, F., & Schoeler, J. (1984). Importance and perceived ability as determinants of information search. *Archiv für Psychologie, 136*, 333–342.
- Försterling, F., & Schuster, B. (1987). Einige Determinanten von Ausdauer und Leistung. *Archiv für Psychologie, 139*, 37–47.
- Geppert, U., & Heckhausen, H. (1990). Ontogenese der Emotionen. In K. R. Scherer (Ed.), *Enzyklopädie der Psychologie, Teilband C/IV/3, Psychologie der Emotionen* (pp. 115–213). Göttingen: Hogrefe.
- Geppert, U., & Küster, U. (1983). The emergence of “wanting to do it oneself”: A precursor of achievement motivation. *International Journal of Behavioral Development, 6*, 355–369.
- Gjesme, T., & Nygard, R. (1970). *Achievement-related motives: Theoretical considerations and construction of a measuring instrument*. University of Oslo: Unpublished manuscript.
- Görlitz, D. (Ed.) (1983). *Kindliche Erklärungsmuster: Entwicklungspsychologische Beiträge zur Attributionsforschung*. Weinheim: Beltz.
- Görlitz, D., & Wohlwill, J.F. (Eds.) (1987). *Curiosity, imagination, and play: On the development of spontaneous cognition, and motivational processes*. Hillsdale, NJ: Erlbaum.
- Gollwitzer, P. M. (1986). Striving for specific identities: The social reality of self-symbolizing. In R. Baumeister (Ed.), *Public self and private self* (pp. 143–159). New York: Springer-Verlag.
- Gollwitzer, P. M. (1987). Suchen, Finden und Festigen der eigenen Identität: Unstillbare Zielintentionen. In H. Heckhausen, P. M. Gollwitzer, & F. E. Weinert (Eds.), *Jenseits des Rubikon: Der Wille in den Humanwissenschaften* (pp. 176–189). Berlin: Springer-Verlag.
- Gollwitzer, P. M. (1990). Action phases and mind-sets. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (vol. 2, pp. 53–92). New York: Guilford.
- Gollwitzer, P. M. (1991). *Abwägen und Planen*. Göttingen: Hogrefe.
- Gollwitzer, P. M. (1993). Goal achievement: The role of intentions. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology* (vol. 4, pp. 141–185). Chichester: Wiley.
- Gollwitzer, P. M., & Brandstätter, V. (1990). Do initiation intentions prevent procrastination? Paper presented at 8th General Meeting of the European Association of Experimental Social Psychology, Budapest, June 1990.
- Gollwitzer, P. M., Earle, W. B., & Stephan, W. G. (1982). Affect as a determinant of egotism: Residual excitation and performance attributions. *Journal of Personality and Social Psychology, 43*, 702–709.

- Gollwitzer, P. M., Heckhausen, H., & Ratajczak, H. (1990). From weighing to willing: Approaching a change decision through pre- or postdecisional mentation. *Organizational Behavior and Human Decision Processes*, 45, 41–65.
- Gollwitzer, P. M., Heckhausen, H., & Steller, B. (1990). Deliberative and implemental mind-sets: Cognitive tuning toward congruous thoughts and information. *Journal of Personality and Social Psychology*, 59, 1119–1127.
- Gollwitzer, P. M., & Kinney, R.F. (1989). Effects of deliberative and implemental mind-sets on illusion of control. *Journal of Personality and Social Psychology*, 56, 531–542.
- Gollwitzer, P. M., & Liu, C. (in press). Wiederaufnahme. In J. Kuhl & H. Heckhausen (Eds.), *Enzyklopädie der Psychologie, Teilband C/IV/4, Motivation, Volition, Handlung*. Göttingen: Hogrefe.
- Gollwitzer, P. M., & Wicklund, R. A. (1985 a). Self-symbolizing and the neglect of others' perspectives. *Journal of Personality and Social Psychology*, 48, 702–715.
- Gollwitzer, P. M., & Wicklund, R. A. (1985 b). The pursuit of self-defining goals. In J. Kuhl & J. Beckmann (Eds.), *Action control: From cognition to behavior* (pp. 61–85). Berlin: Springer-Verlag.
- Gollwitzer, P. M., Wicklund, R. A., & Hilton, J. L. (1982). Admission of failure and symbolic self-completion: Extending Lewinian theory. *Journal of Personality and Social Psychology*, 43, 358–371.
- Grobe, R., & Hofer, M. (1983). Kognitiv-motivationale Korrelate von Schulnoten: Typen motivierter Schüler. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 15, 292–316.
- Hagtvet, K. A. & Backer Johnsen, T. (Eds.) (1992). *Advances in test anxiety research* (vol. 7). Amsterdam: Swets & Zeitlinger.
- Haisch, J. (1982). Die Genauigkeit der Informationsbewertung im Rahmen eines modifizierten "Attributionswürfels". *Psychologische Beiträge*, 24, 26–38.
- Haisch, J. (1987). Zur leistungssteigernden Wirkung selbstverursachten Mißerfolgs: Verhaltensausrwirkungen von Ursachenzuschreibungen. *Archiv für Psychologie*, 139, 23–35.
- Haisch, J. (1989). Verhaltensfolgen langandauernder selbst zugeschriebener Erfolge und Mißerfolge: Eine attributionstheoretische Analyse. *Archiv für Psychologie*, 141, 287–299.
- Haisch, F. (1982). Über die Güteeigenschaften des LM-Gitters für Kinder (Schmalt): Kritische Anmerkungen zu einer Analyse von Krug & Wolter (1979). *Diagnostica*, 28, 146–153.
- Haisch, F. (1986). *Operante und respondente Verfahren zur Messung des Leistungsmotivs* (Paper 20/1986). Munich: Max-Planck-Institute for Psychological Research.
- Haisch, F. (1987). Modeling and achievement-related behavior. In F. Haisch & J. Kuhl (Eds.), *Motivation, intention, and volition* (pp. 87–100). Berlin: Springer-Verlag.
- Haisch, F. (1988). Empathie, Attribution und die Entwicklung des Hilfehandelns. In H. W. Bierhoff & L. Montada (Eds.), *Altruismus – Bedingungen der Hilfsbereitschaft* (pp. 79–103). Göttingen: Hogrefe.

- Halisch, F., & Butzkamm, J. (1982). Informationssuche und Bezugsnorm: Was will der Beurteilte? In F. Rheinberg (Ed.), *Jahrbuch für Empirische Erziehungswissenschaft 1982* (pp. 263–302). Düsseldorf: Schwann.
- Halisch, F., & Heckhausen, H. (1989). Motive-dependent versus ability-dependent valence functions for success and failure. In F. Halisch & J. van den Bercken (Eds.), *International perspectives on achievement and task motivation* (pp. 51–67). Amsterdam: Swets & Zeitlinger.
- Hammerl, M., Grabitz, H. J., & Riemann, D. F. (1988). Auswirkungen von Unkontrollierbarkeit und Verhaltenseinschränkung auf den nachfolgenden Erwerb operanten Verhaltens. *Zeitschrift für Experimentelle und Angewandte Psychologie*, 35, 573–598.
- Hartung, J., & Schulte, D. (1991). Anregung eines handlungsorientierten Kontrollmodus im Therapieprozeß. In D. Schulte (Ed.), *Therapeutische Entscheidungen* (pp. 107–131). Göttingen: Hogrefe.
- Heckhausen, H. (1963). *Hoffnung und Furcht in der Leistungsmotivation*. Meisenheim/Glan: Hain.
- Heckhausen, H. (1977). Achievement motivation and its constructs: A cognitive model. *Motivation and Emotion*, 1, 283–329.
- Heckhausen, H. (1981). Neuere Entwicklungen in der Motivationsforschung. In W. Michaelis (Ed.), *Bericht über den 32. Kongreß der Deutschen Gesellschaft für Psychologie, Zürich* (pp. 325–335). Göttingen: Hogrefe.
- Heckhausen, H. (1982). Task-irrelevant cognitions during an exam: Incidence and effects. In H. W. Krohne & L. Laux (Eds.), *Achievement, stress, and anxiety* (pp. 247–274). Washington: Hemisphere.
- Heckhausen, H. (1984). Emergent achievement behavior: Some early developments. In J. Nicholls (Ed.), *Advances in motivation and achievement* (pp. 1–32). London: JAI Press.
- Heckhausen, H. (1986 a). Achievement and motivation through the life span. In A. B. Sorensen, F. E. Weinert, & L. R. Sherrod (Eds.), *Human development and the life course: Multidisciplinary perspectives* (pp. 445–466). Hillsdale, NJ: Erlbaum.
- Heckhausen, H. (1986 b). Why some time out might benefit achievement motivation research. In J. H. L. van den Bercken, E. E. J. De Bruyn, & C. M. Bergen (Eds.), *Achievement and task motivation* (pp. 7–39). Lisse: Swets & Zeitlinger.
- Heckhausen, H. (1987 a). Perspektiven einer Psychologie des Wollens. In H. Heckhausen, P. M. Gollwitzer & F. E. Weinert (Eds.), *Jenseits des Rubikon: Der Wille in den Humanwissenschaften* (pp. 121–143). Berlin: Springer-Verlag.
- Heckhausen, H. (1987 b). Wünschen – Wählen – Wollen. In H. Heckhausen, P. M. Gollwitzer, & F. E. Weinert (Eds.), *Jenseits des Rubikon: Der Wille in den Humanwissenschaften* (pp. 3–10). Berlin: Springer-Verlag.
- Heckhausen, H. (1991). *Motivation and action*. New York: Springer-Verlag.
- Heckhausen, H., & Beckmann, J. (1990). Intentional action and actions slips. *Psychological Review*, 97, 36–48.
- Heckhausen, H., & Gollwitzer, P. M. (1987). Thought contents and cognitive functioning in motivational vs. volitional states of mind. *Motivation and Emotion*, 11, 101–120.

- Heckhausen, H., Gollwitzer, P. M., & Weinert, F. E. (Eds.) (1987). *Jenseits des Rubikon: Der Wille in den Humanwissenschaften*. Berlin: Springer-Verlag.
- Heckhausen, H., & Krug, S. (1982). Motive modification. In A. Stewart (Ed.), *Motivation and society* (pp. 274–318). San Francisco: Jossey-Bass.
- Heckhausen, H., & Kuhl, J. (1985). From wishes to action: The dead ends and short cuts on the long way to action. In M. Frese & J. Sabini (Eds.), *Goal-directed behavior: Psychological theory and research on action* (pp. 134–160). Hillsdale, NJ: Erlbaum.
- Heckhausen, H., Schmalt, H. D., & Schneider, K. (1985). *Achievement motivation in perspective*. New York: Academic Press.
- Heckhausen, H., & Strang, H. (1988). Efficiency under record performance demands: Exertion control – An individual difference variable? *Journal of Personality and Social Psychology*, 55, 489–498.
- Heckhausen, J. (1988). Becoming aware of one's competence in the second year: Developmental progression within the mother-child dyad. *International Journal of Behavioral Development*, 11, 305–326.
- Heckhausen, J. (1992). Adults' expectancies about development and its controllability: Enhancing self-efficacy by social comparison. In R. Schwarzer (Ed.), *Self-efficacy, expectancies, and action* (pp. 107–126). Washington: Hemisphere.
- Helmke, A. (1983). Prüfungsangst: Ein Überblick über neuere theoretische Entwicklungen und empirische Ergebnisse. *Psychologische Rundschau*, 34, 193–211.
- Helmke, A. (1988 a). The impact of student self-concept of ability and task motivation on different indicators of effort at school. *International Journal of Educational Research*, 12, 281–297.
- Helmke, A. (1988 b). The role of classroom context factors for the achievement-impairing effect of test anxiety. *Anxiety Research*, 1, 37–52.
- Helmke, A. (1989 a). Affective student characteristics and cognitive development: Problems, pitfalls, perspectives. *International Journal of Educational Research*, 13, 915–932.
- Helmke, A. (1989 b). Incentive value of success and failure in school: Developmental trends and impact on academic achievement. In F. Halisch & J. H. L. van den Bercken (Eds.), *International perspectives on achievement and task motivation* (pp. 225–237). Amsterdam: Swets & Zeitlinger.
- Helmke, A. (1989 c). Mediating processes between children's self-concept of ability and mathematical achievement: A longitudinal study. In H. Mandl, E. de Corte, N. Bennett, & H. F. Friedrich (Eds.), *Learning and instruction* (pp. 537–549). Oxford: Pergamon Press.
- Helmke, A. (1992). *Selbstvertrauen und schulische Leistungen*. Göttingen: Hogrefe.
- Helmke, A., Schneider, W., & Weinert, F. E. (1986). Quality of instruction and classroom learning outcomes. Results of the German contribution to the Classroom Environment Study of the IEA. *Teaching and Teacher Education*, 2, 1–18.
- Helmke, A., Schrader, F. W., & Lehneis-Klepper, G. (1991). Zur Rolle des Elternverhaltens für die Schulleistungsentwicklung ihrer Kinder. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 23, 1–22.

- Hermans, H., Petermann, F., & Zielinski, W. (1978). *LMT. Leistungsmotivationstest*. Amsterdam: Swets & Zeitlinger.
- Higgins, E. T., & Sorrentino, R. M. (1990). *Handbook of motivation and cognition: Foundations of social behavior* (vol. 2). New York: Guilford Press.
- Hörhold, M., Walschburger, P., & Straub, R. (1989). Empirische Überprüfung einer reformulierten Reaktanz-Hilflosigkeitshypothese an klinisch-depressiven und nicht-depressiven lage- und handlungsorientierten Frauen. In R. Straub, M. Hautzinger, & G. Hole (Eds.), *Denken, Fühlen, Wollen und Handeln bei depressiven Menschen* (pp. 137–152). Frankfurt/M.: Lang.
- Hofer, M., & Pikowsky, B. (1988). Wie Jugendliche bei freier Antwortmöglichkeit Lehrersanktionen deuten. *Zeitschrift für Pädagogische Psychologie*, 2, 243–250.
- Hoffmann, L., Lehrke, M., & Todt, E. (1985). Development and change in pupils' interests in physics (grade 5 to 10): Design of a longitudinal study. In M. Lehrke, L. Hoffmann, & P. L. Gardner (Eds.), *Interests in science and technology education*. (pp. 71–80). Kiel: IPN.
- Jacobs, B. (1991). Aspekte der Bedrohung und ihrer Verarbeitung beim Herannahen an eine Prüfung. *Zeitschrift für Pädagogische Psychologie*, 5, 145–154.
- Jerusalem, M., & Schwarzer, R. (1992). Self-efficacy as a resource factor in stress appraisal processes. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action* (pp. 195–213). Washington, DC: Hemisphere.
- Jungermann, H., May, R. S., Hageböck, J., Isermann-Gerke, M., & Pfister, H. R. (1989). Changing choices: Why and how, if at all? In A. Upmeyer (Ed.), *Attitudes and behavioral decisions* (pp. 101–123). New York: Springer-Verlag.
- Kammer, D. (1984). Die Kausaldimension Generalität: Vorauslaufende Bedingungen für das Zustandekommen globaler und spezifischer Attributionen. *Zeitschrift für Experimentelle und Angewandte Psychologie*, 31, 48–62.
- Kasten, H., & Krapp, A. (1986). Das Interessengeneseprojekt – eine Pilotstudie. *Zeitschrift für Pädagogik*, 32, 175–188.
- Keller, H., & Boigs, R. (1989). Entwicklung des Explorationsverhaltens. In H. Keller (Ed.), *Handbuch der Kleinkindforschung* (pp. 443–464). Berlin: Springer-Verlag.
- Keller, H., & Gauda, G. (1987). Eye contact in the first months of life and its developmental consequences. In H. Rauh & H. C. Steinhausen (Eds.), *Psychobiology and early development* (pp. 129–143). Amsterdam: Elsevier.
- Keller, H., & Schneider, K. (Eds.) (in press). *Curiosity and exploration: Theoretical perspectives, research fields, and applications*. Berlin: Springer-Verlag.
- Keller, H., Schölmerich, A., Miranda, D., & Gauda, G. (1987). The development of exploratory behavior in the first four years of life. In D. Görlitz & J. F. Wohlwill (Eds.), *Curiosity, imagination, and play* (pp. 130–150). Hillsdale, NJ: Erlbaum.
- Kelley, H. H. (1967). Attribution theory in social psychology. In D. Levine (Ed.), *Nebraska symposium of motivation*, (vol. 24, pp. 192–238). Lincoln: University of Nebraska Press.
- Kleinbeck, U., & Schmidt, K. H. (1983). Angewandte Motivationspsychologie in der Arbeitsgestaltung. *Psychologie und Praxis*, 27, 13–21.
- Kleinbeck, U., Schmidt, K. H., & Ottmann, W. (1981/82). Motivationspsychologische Aspekte der Bewegungssteuerung. *Archiv für Psychologie*, 134, 181–195.

- Kohlmann, C. W., & Krohne, H. W. (1988). Erziehungsstildeterminanten schulischer Leistung und Leistungsängstlichkeit. *Zeitschrift für Pädagogische Psychologie*, 2, 271–279.
- Kornadt, H. J. (1982). *Aggressionsmotiv und Aggressionshemmung. Empirische und theoretische Untersuchungen zu einer Motivationstheorie der Aggression und zur Konstruktvalidierung eines Aggressions-TAT*. Bern: Huber.
- Kornadt, H. J. (1984). Development of aggressiveness: A motivation theory perspective. In R. M. Kaplan, V. J. Konecni, & R. W. Novaco (Eds.), *Aggression in children and youth* (pp. 73–87). The Hague: Martinus Nijhoff.
- Kornadt, H. J. (1987). The aggression motive and personality development: Japan and Germany. In F. Halisch & J. Kuhl (Eds.), *Motivation, intention, and volition* (pp. 115–140). Berlin: Springer-Verlag.
- Kornadt, H. J., & Zumkley, H. (1992). Ist die Katharsis-Hypothese endgültig widerlegt? In H. J. Kornadt (Ed.), *Aggression und Frustration als psychologisches Problem* (pp. 156–223). Darmstadt: Wissenschaftliche Buchgesellschaft.
- Krahé, B. (1984). Der “self-serving bias” in der Attributionsforschung: Theoretische Grundlagen und empirische Befunde. *Psychologische Rundschau*, 35, 79–97.
- Krahé, B. (1985). Die Zuschreibung von Verantwortlichkeit nach Vergewaltigungen: Opfer und Täter im Dickicht der attributionstheoretischen Forschung. *Psychologische Rundschau*, 36, 67–82.
- Krampen, G. (1982). *Differentialpsychologie der Kontrollüberzeugungen*. Göttingen: Hogrefe.
- Krampen, G. (1986). Zur Spezifität von Kontrollüberzeugungen für Problemlösen in verschiedenen Realitätsbereichen. *Schweizerische Zeitschrift für Psychologie*, 45, 67–85.
- Krampen, G. (1987a). Differential effects of teacher comments. *Journal of Educational Psychology*, 79, 137–146.
- Krampen, G. (1987b). Entwicklung von Kontrollüberzeugungen. Thesen zu Forschungsstand und Perspektiven. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 19, 195–227.
- Krampen, G. (1988). Toward an action-theoretical model of personality. *European Journal of Personality*, 2, 39–55.
- Krampen, G. (1989a). *Diagnostik von Attributionen und Kontrollüberzeugungen*. Göttingen: Hogrefe.
- Krampen, G. (1989b). Perceived childrearing practices and the development of locus of control in early adolescence. *International Journal of Behavioral Development*, 12, 177–193.
- Krampen, G. (1991). Political participation in an action-theory model of personality: Theory and empirical evidence. *Political Psychology*, 12, 1–25.
- Krapp, A. (1989). Neuere Ansätze einer pädagogisch orientierten Interessenforschung. *Empirische Pädagogik*, 3, 233–255.
- Krapp, A. (1992). Interesse, Lernen und Leistung. *Zeitschrift für Pädagogik*, 38, 747–770.

- Krapp, A. (in press). Interest and curiosity. The role of interest in a theory of exploratory action. In H. Keller & K. Schneider (Eds.), *Curiosity and exploration. Theoretical perspectives, research fields, and applications*. New York: Springer-Verlag.
- Krapp, A., & Fink, B. (1992). The development and function of interests during the critical transition from home to preschool. In K. A. Renninger, S. Hidi, & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 397–429). Hillsdale, NJ: Erlbaum.
- Krappmann, L., & Oswald, H. (1991). Problems of helping among ten-year old children: Results of a qualitative study in natural settings. In L. Montada & H. W. Bierhoff (Eds.), *Altruism in social systems* (pp. 142–158). Toronto: Hogrefe.
- Krohne, H. W. (1988). Coping research: Current theoretical and methodological developments. *The German Journal of Psychology*, 12, 1–30.
- Krohne, H. W., Kohlmann, C. W., & Leidig, S. (1986). Erziehungsstildeterminanten kindlicher Ängstlichkeit, Kompetenzerwartungen und Kompetenzen. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 18, 70–88.
- Krohne, H. W., Kohlmann, C. W., & Schumacher, A. (1988). Beziehungen zwischen elterlichen Erziehungsstilen und Angstbewältigungsdispositionen des Kindes. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 20, 167–183.
- Krüger, J., Möller, H., & Meyer, W. U. (1983). Das Zuweisen von Aufgaben verschiedener Schwierigkeit: Auswirkungen auf Leistungsbeurteilung und Affekt. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 15, 280–291.
- Krug, S. (1983). Motivförderungsprogramme: Möglichkeiten und Grenzen. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 15, 317–346.
- Krug, S., Gurack, E., & Krüger, H. (1982). Entwicklung anschauungsgestützter Konzepte für Fähigkeit und Anstrengung im Vorschulalter. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 14, 1–17.
- Kuhl, J. (1981). Motivational and functional helplessness: The moderating effect of state versus action orientation. *Journal of Personality and Social Psychology*, 40, 155–170.
- Kuhl, J. (1982). Handlungskontrolle als metakognitiver Vermittler zwischen Intention und Handeln: Freizeitaktivitäten bei Hauptschülern. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 14, 141–148.
- Kuhl, J. (1983). *Motivation, Konflikt und Handlungskontrolle*. Berlin: Springer-Verlag.
- Kuhl, J. (1984). Volitional aspects of achievement motivation and learned helplessness: Toward a comprehensive theory of action control. In B. A. Maher & W. B. Maher (Eds.), *Progress in experimental personality research* (pp. 99–171). New York: Academic Press.
- Kuhl, J. (1985). Volitional mediators of cognition-behavior consistency: Self-regulatory processes and action versus state orientation. In J. Kuhl & J. Beckmann (Eds.), *Action control: From cognition to behavior* (pp. 101–128). Berlin: Springer-Verlag.

- Kuhl, J. (1986). Motivation and information processing: A new look at decision making, dynamic change, and action control. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (pp. 404–434). Chichester: John Wiley.
- Kuhl, J., & Beckmann, J. (1983). Handlungskontrolle und Umfang der Informationsverarbeitung: Wahl einer einfachen (nicht optimalen) Entscheidungsregel zugunsten rascher Handlungsbereitschaft. *Zeitschrift für Sozialpsychologie*, 14, 241–250.
- Kuhl, J., & Beckmann, J. (Eds.) (1985). *Action control: From cognition to behavior*. Berlin: Springer-Verlag.
- Kuhl, J., & Beckmann, J. (Eds.) (1994). *Volition and personality: Action versus state orientation*. Göttingen: Hogrefe.
- Kuhl, J., & Geiger, E. (1986). The dynamic theory of the anxiety-behavior relation: A study of resistance and time allocation. In J. Kuhl & J. W. Atkinson (Eds.), *Motivation, thought, and action* (pp. 76–93). New York: Praeger.
- Kuhl, J., & Helle, P. (1986). Motivational and volitional determinants of depression: The degenerated-intention hypothesis. *Journal of Abnormal Psychology*, 95, 247–251.
- Kuhl, J., & Kazén-Saad, M. (1988). A motivational approach to volition: Activation and deactivation of memory representations related to uncompleted intentions. In V. Hamilton, G. H. Bower, & N. H. Frijda (Eds.), *Cognitive perspectives on emotion and motivation* (pp. 63–85). Dordrecht: Martinus Nijhoff.
- Kuhl, J., & Kraska, K. (1989). Self-regulation and metamotivation: Computational mechanisms, development, and assessment. In R. Kanfer, P. L. Ackerman, & R. Cudek (Eds.), *Learning and individual differences: Abilities, motivation and methodology* (pp. 343–374). Hillsdale, NJ: Erlbaum.
- Kuhl, J., Kraska, K., & Christ, E. (in press). Selbstregulation und Handlungskontrollwissen im Grundschulalter: Validierung eines computerunterstützten Tests zur Prozeßdiagnostik. In C. Trudewind & K. Schneider (Eds.), *Entwicklung und Motivation von Handeln*. Göttingen: Hogrefe.
- Kuhl, J., & Wassiljew, I. (1985). An information-processing perspective on motivation: Intrinsic task-involvement, problem-solving, and the complexity of action plans. In G. d'Ydewalle (Ed.), *Cognition, information processing, and motivation* (pp. 505–522). Amsterdam: Elsevier.
- Langfeldt, H. P. (1983). Schulbezogene Motivation, Schulleistung und Schullaufbahn. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 15, 157–167.
- Lehrke, M., Hoffmann, L., & Gardner, P. L. (Eds.) (1985). *Interests in science and technology education*. Kiel: IPN.
- Lehwald, G. (1985). *Zur Diagnostik des Erkenntnisstrebens bei Schülern*. Berlin: Volk und Wissen.
- León-Villagrà, J., Meyer, W. U., & Engler, U. (1990). Fähigkeitsinferenzen aufgrund von Lob: Eine entwicklungspsychologische Studie. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 22, 54–74.
- Lerch, H. J., & Rübensal, M. (1983). Eine Analyse des Zusammenhangs zwischen Schulleistungen und dem Wetteifermotiv. *Psychologische Beiträge*, 25, 521–531.

- Lewin, K. (1926). Vorsatz, Wille und Bedürfnis. *Psychologische Forschung*, 7, 330–385.
- Lewin, K., Dembo, T., Festinger, L., & Sears, P. S. (1944). Level of aspiration. In J. McHunt (Ed.), *Personality and the behavior disorders* (pp. 333–378). New York: Ronald Press.
- Locke, E. A. (1968). Toward a theory of task motivation and incentives. *Organizational Behavior and Human Performance*, 3, 157–189.
- Ludwig, S. (1982). Die Parameter des Leistungsmotivs und ihre Relation zu leistungsbezogenen Verhaltens- und Sozialisationsmerkmalen. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 14, 149–160.
- Ludwig, S. (1984). Zusammenhänge zwischen Leistungsmotiv, Abiturleistungen und Studienwahl sowie deren Beziehungen zur beruflichen Zukunftsperspektive während des Studiums. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 16, 338–350.
- Lütkenhaus, P. (1984). Pleasure derived from mastery in three-year olds: Its function for persistence and the influence of maternal behavior. *International Journal of Behavioral Development*, 7, 343–358.
- Lütkenhaus, P., & Bullock, M. (1991). The development of volitional skills. In M. Bullock (Ed.), *The development of intentional action: Cognitive, motivational, and interactive processes* (pp. 14–23). Basel: Karger.
- Lugt-Tappeser, H., & Schneider, K. (1987). Ängstlichkeit und das Erkunden eines neuen Objektes bei Vorschulkindern. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 19, 300–313.
- Malzacher, J. (1992). *Erleichtern Vorsätze die Handlungsinittierung? Zur Aktivierung der Vornahmehandlung*. University of Munich: Unpublished dissertation.
- Mandler, G., & Sarason, S. B. (1952). A study of anxiety and learning. *Journal of Abnormal and Social Psychology*, 47, 166–173.
- McClelland, D. C. (1980). Motive dispositions: The merits of operant and respondent measures. In L. Wheeler (Ed.), *Review of personality and social psychology* (pp. 10–41). Beverly Hills, CA: Sage.
- McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. (1953). *The achievement motive*. New York: Appleton-Century-Crofts.
- McClelland, D. C., Koestner, R., & Weinberger, J. (1989). How do self-attributed and implicit motives differ? *Psychological Review*, 96, 690–702.
- Meyer, W. U. (1982). Indirect communications about perceived ability estimates. *Journal of Educational Psychology*, 74, 888–897.
- Meyer, W. U. (1983). Prozesse der Selbstbeurteilung: Das Konzept von der eigenen Begabung. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 15, 1–25.
- Meyer, W. U. (1984). *Das Konzept von der eigenen Begabung*. Bern: Huber.
- Meyer, W. U. (1987). Perceived ability and achievement-related behavior. In F. Halisch & J. Kuhl (Eds.), *Motivation, intention, and volition* (pp. 73–86). Berlin: Springer-Verlag.

- Meyer, W. U. (1992). Paradoxical effects of praise and criticism on perceived ability. In W. Stroebe, & M. Hewstone (Eds.), *European review of social psychology* (Vol. 3, pp. 259–283). London: John Wiley.
- Meyer, W. U., Bedau, U., & Engler, U. (1988). Indirekte Mitteilungen über Fähigkeitseinschätzungen in hypothetischen Lehrer-Schüler-Interaktionen. *Zeitschrift für Pädagogische Psychologie*, 2, 135–242.
- Meyer, W. U., Engler, U., & Mittag, W. (1982). Auswirkungen von Tadel auf die Beurteilung des eigenen Leistungsstandes und auf das Interesse an Aufgaben. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 14, 263–276.
- Meyer, W. U., Niepel, M., & Engler, U. (1987). Erwartung, Affekt und Attribution: Untersuchungen zur Beziehung zwischen Erwartung und Anreiz und zur Attributionsabhängigkeit von Affekten. *Psychologische Beiträge*, 29, 227–258.
- Meyer, W. U., Niepel, M., Rudolph, U., & Schützwohl, A. (1991). An experimental analysis of surprise. *Cognition and Emotion*, 5, 295–311.
- Meyer, W. U., & Starke, E. (1982). Das Einholen begabungsrelevanter Informationen in Abhängigkeit vom Konzept eigener Begabung: Eine Feldstudie. *Archiv für Psychologie*, 134, 105–115.
- Mielke, R. (Ed.) (1982). *Interne/externe Kontrollüberzeugung. Theoretische und empirische Arbeiten zum Locus of Control-Konstrukt*. Bern: Huber.
- Mikula, G., Uray, H., & Schwinger, T. (1976). Die Entwicklung einer deutschen Fassung der Mehrabian Achievement Risk Preference Scale. *Diagnostica*, 22, 87–97.
- Moch, M. (1987). Asking questions: An expression of epistemological curiosity in children. In D. Görlitz & J. F. Wohlwill (Eds.), *Curiosity, imagination, and play* (pp. 198–211). Hillsdale, NJ: Erlbaum.
- Mönks, F. J., & Lehwald, G. (1991). *Neugier, Erkundung und Begabung bei Kleinkindern*. München: Reinhardt.
- Montada, L. (1988). Die Bewältigung von Schicksalsschlägen. Erlebte Ungerechtigkeit und wahrgenommene Verantwortlichkeit. *Schweizerische Zeitschrift für Psychologie*, 47, 203–216.
- Montada, L., & Bierhoff, H. W. (Eds.) (1991). *Altruism in social systems*. Toronto: Hogrefe.
- Montada, L., & Schneider, A. (1991). Justice and prosocial commitments. In L. Montada & H. W. Bierhoff (Eds.), *Altruism in social systems* (pp. 58–81). Toronto: Hogrefe.
- Mummendey, A. (Ed.) (1984). *Social psychology of aggression*. Berlin: Springer-Verlag.
- Nowicki, S., & Schneewind, K. A. (1982). Relation of family climate variables to locus of control in German and American students. *Journal of Genetic Psychology*, 141, 277–286.
- Oettingen, G. (1993). Attributionsstil und expressives Verhalten in Ost- und West-Berlin. In G. Trommsdorff (Ed.), *Psychologische Aspekte der Transformationsprozesse in den neuen Ländern*. Berlin: De Gruyter.

- Oettingen, G., Little, T. D., Lindenberger, U., & Baltes, P. B. (1994). Causality, agency, and control beliefs and their association with school performance in East vs. West Berlin children: A natural experiment on the role of context. *Journal of Personality and Social Psychology, 66*, 579–595.
- Oettingen, G., & Seligman, M. E. P. (1990). Pessimism and behavioral signs of depression in East versus West Berlin. *European Journal of Social Psychology, 20*, 207–220.
- Oettingen, G., & Wadden, T. A. (1991). Expectation, fantasy, and weight loss: Is the impact of positive thinking always positive? *Cognitive Therapy and Research, 15*, 167–175.
- Oswald, M. (1989). Schadenshöhe, Strafe und Verantwortungsattribution. *Zeitschrift für Sozialpsychologie, 20*, 200–210.
- Pekrun, R. (1988). Anxiety and motivation in achievement settings: Towards a system-theoretical approach. *International Journal of Educational Research, 12*, 307–323.
- Pekrun, R. (1991). Prüfungsangst und Schulleistung: Eine Längsschnittanalyse. *Zeitschrift für Pädagogische Psychologie, 5*, 99–109.
- Pekrun, R. (1992). The impact of emotions on learning and achievement: Towards a theory of cognitive/motivational mediators. *Applied Psychology, 41*, 359–376.
- Peterson, C., & Seligman, M. E. P. (1984). Causal explanations as a risk factor for depression: Theory and evidence. *Psychological Review, 91*, 347–374.
- Peterson, C., Semmel, A., Baeyer, C. von, Abramson, L. Y., Metalsky, G. I., & Seligman, M. E. P. (1982). The Attributional Style Questionnaire. *Cognitive Therapy and Research, 6*, 287–299.
- Pikowsky, B. (1988). Lob im Unterricht: Lehrer- und Schülerkognitionen im Vergleich. *Zeitschrift für Pädagogische Psychologie, 2*, 251–257.
- Plaum, E. (1986). *Leistungsmotivdiagnostik auf handlungstheoretischer Basis. Entwicklung eines neuen Untersuchungsverfahrens und erste Ergebnisse zur Validität*. Weinheim: Beltz.
- Pollmer, K. (1991). Inwieweit sind Hochbegabte durch eine besondere Motivation gekennzeichnet? *Zeitschrift für Psychologie, 199*, 95–106.
- Preiser, S. (1988). *Kontrolle und engagiertes Handeln. Entstehungs-, Veränderungs- und Wirkungsbedingungen von Kontrollkognitionen und Engagement*. Göttingen: Hogrefe.
- Prenzel, M. (1992). The selective persistence of interest. In K. A. Renninger, S. Hidi, & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 71–98). Hillsdale, NJ: Erlbaum.
- Prenzel, M., & Heiland, A. (1986). Studien zur Wirkungsweise von Interesse. *Zeitschrift für Pädagogik, 32*, 385–393.
- Prenzel, M., Krapp, A., & Schiefele, H. (1986). Grundzüge einer pädagogischen Interessentheorie. *Zeitschrift für Pädagogik, 32*, 163–173.
- Prinz, W. (1992). Why don't we perceive our brain states? *European Journal of Cognitive Psychology, 4*, 1–20.

- Prinz, W., Aschersleben, G., Hommel, B., & Vogt, S. (1993). Handlungen als Ereignisse. In D. Dörner & E. van der Meer (Eds.), *Gedächtnis. Trends, Probleme, Perspektiven*. Heidelberg: Springer-Verlag.
- Rheinberg, F. (1980). *Leistungsbewertung und Lernmotivation*. Göttingen: Hogrefe.
- Rheinberg, F. (1983). Achievement evaluation: A fundamental difference and its motivational consequences. *Studies in Educational Evaluation*, 9, 185–194.
- Rheinberg, F. (1988). "Paradoxe Effekte" von Lob und Tadel. *Zeitschrift für Pädagogische Psychologie*, 2, 223–226.
- Rheinberg, F. (1989). *Zweck und Tätigkeit: Motivationspsychologische Analysen zur Handlungsveranlassung*. Göttingen: Hogrefe.
- Rheinberg, F. (in press). Flow-Erleben, Freude an riskantem Sport und andere "unvernünftige" Motivationen. In J. Kuhl & H. Heckhausen (Eds.), *Enzyklopädie der Psychologie, Teilband C/IV/4, Motivation, Volition, Handlung*. Göttingen: Hogrefe.
- Rheinberg, F., & Krug, S. (in press). *Motivförderung im Unterricht: Motivationsintervention unter Schulalltagsbedingungen*. Göttingen: Hogrefe.
- Rheinberg, F., Schwarz, N., & Singer, G. M. (1987). Symbolische Selbstergänzung und Leistungsmotivation. *Zeitschrift für Sozialpsychologie*, 18, 50–58.
- Rheinberg, F., & Weich, K. W. (1988). Wie gefährlich ist Lob? Eine Untersuchung zum "paradoxen Effekt" von Lehrersanktionen. *Zeitschrift für Pädagogische Psychologie*, 2, 227–233.
- Ries, G., Hahn, M., & Barkowsky, D. (1983). Die Entwicklung schulleistungsbezogener Ursachenerklärungen im Längsschnittvergleich des 2. und 4. Schuljahres. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 15, 149–156.
- Rösler, F., Jesse, J., Manzey, D., & Grau, U. (1982). Ist das LM-Gitter nur ein LM-Test? – Eine dreimodale Faktorenanalyse des LM-Gitters für Kinder (Schmalt). *Diagnostica*, 28, 131–145.
- Rollett, B. (1985). Achievement motivation versus effort avoidance motivation. In J. T. Spence & C. E. Izard (Eds.), *Motivation, emotion, and personality* (pp. 77–85). Amsterdam: Elsevier.
- Rost, D. H., & Schermer, F. J. (1987). Emotion and cognition in coping with test anxiety. *Communication and Cognition*, 20, 225–244.
- Rost, D. H., & Wild, K. P. (1990). Schulisches Mogeln und Leistungsvermeidung: Komponenten und Erfassung. *Zeitschrift für Pädagogische Psychologie*, 4, 13–27.
- Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology*, 42, 5–37.
- Rotter, J. B. (1954). *Social learning and clinical psychology*. Englewood Cliffs, NJ: Prentice-Hall.
- Rustemeyer, R. (1982). *Wahrnehmung eigener Fähigkeiten bei Jungen und Mädchen*. Frankfurt/M: Lang.

- Sack, P. M., & Witte, E. H. (1989). Zum Leistungsvorteil bei Handlungsorientierung. Forschungsergebnisse und resultierende Fragen. *Zeitschrift für Experimentelle und Angewandte Psychologie*, 36, 510–522.
- Sack, P. M., & Witte, E. H. (1990). Untersuchung zur Konstruktvalidität des HAKEMP 85 von J. Kuhl. *Zeitschrift für Differentielle und Diagnostische Psychologie*, 11, 17–26.
- Scherer, K. R. (Ed.) (1990). *Psychologie der Emotion. Enzyklopädie der Psychologie, Teilband C/IV/3*. Göttingen: Hogrefe.
- Schiefele, U. (1988). Der Einfluß von Interesse auf Umfang, Inhalt und Struktur studienbezogenen Wissens. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 20, 356–370.
- Schiefele, U. (1992). Topic interest and levels of text comprehension. In K. A. Renninger, S. Hidi, & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 151–182). Hillsdale, NJ: Erlbaum.
- Schiefele, U. (1991). Interest, learning, and motivation. *Educational Psychologist*, 26, 299–323.
- Schiefele, U., Krapp, A., & Winteler, A. (1992). Interest as a predictor of academic achievement: A meta-analysis of research. In K. A. Renninger, S. Hidi, & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 183–212). Hillsdale, NJ: Erlbaum.
- Schmalt, H. D. (1973). Die GITTER-Technik – ein objektives Verfahren zur Messung des Leistungsmotivs bei Kindern. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, 5, 231–252.
- Schmalt, H. D. (1982). Two concepts of failure motivation. In R. Schwarzer, H. M. van der Ploeg, & C. D. Spielberger (Eds.), *Advances in test anxiety research* (Vol. 1, pp. 45–52).
- Schmalt, H. D. (1986). Das Machtmotiv und Verantwortlichkeitsattribution für interpersonale Ereignisse. *Psychologische Beiträge*, 28, 533–550.
- Schmalt, H. D. (1987). Power motivation and the perception of control. In F. Halisch & J. Kuhl (Eds.), *Motivation, intention, and volition* (pp. 101–113). Berlin: Springer-Verlag.
- Schmalt, H. D., & Schab, W. (1984). Methodenkritische Untersuchungen zum LM-GITTER für Kinder (Schmalt). *Diagnostica*, 4, 482–498.
- Schmidt, G. (1983). Motivationale Grundlage sexuellen Verhaltens. In H. Thomae (Ed.), *Enzyklopädie der Psychologie, Teilband C/IV/3, Psychologie der Motive* (pp. 70–109). Göttingen: Hogrefe.
- Schneewind, K. A. (1985). Entwicklung personaler Kontrolle im Kontext der Familie. In W. F. Klugemann, S. Preiser, & K. A. Schneewind (Eds.), *Psychologie und komplexe Lebenswirklichkeit* (pp. 203–223). Göttingen: Hogrefe.
- Schneewind, K. A., & Pausch, H. P. (1990). Entwicklung des Multidimensionalen Bereichsspezifischen Attributionsfragebogens für Kinder und Jugendliche (MBAF-K). *Zeitschrift für Pädagogische Psychologie*, 4, 97–104.
- Schneider, K. (1984). The cognitive basis of task choice in preschool children. *Advances in Motivation and Achievement*, 3, 57–72.

- Schneider, K. (1987). Achievement-related emotions in preschoolers. In F. Halisch & J. Kuhl (Eds.), *Motivation, intention, and volition* (pp. 163–177). Berlin: Springer-Verlag.
- Schneider, K., Hanne, K., & Lehmann, B. (1989). The development of children's achievement-related expectancies and subjective uncertainty. *Journal of Experimental Child Psychology*, *47*, 160–174.
- Schneider, K., & Josephs, I. (1991). The expressive and communicative functions of preschool children's smiles in an achievement-situation. *Journal of Nonverbal Behavior*, *15*, 185–198.
- Schneider, K., Moch, M., Sandfort, R., Auerswald, M., & Walther-Weckman, K. (1983). Exploring a novel object by preschool children: A sequential analysis of perceptual, manipulating, and verbal exploration. *International Journal of Behavioral Development*, *6*, 477–496.
- Schneider, K., & Posse, N. (1979). Achievement motivation. *The German Journal of Psychology*, *3*, 77–90.
- Schneider, K., & Unzner, L. (1989). Achievement-related cognitions and emotions in preschoolers. In F. Halisch & J. H. L. van den Bercken (Eds.), *International perspectives on achievement and task motivation* (pp. 87–111). Amsterdam: Swets & Zeitlinger.
- Schneider, K., & Unzner, L. (1992). Preschoolers' attention and emotion in an achievement and an effect game: A longitudinal study. *Cognition and Emotion*, *6*, 37–63.
- Schneider, K., & Unzner, L. (in press). Preschoolers' exploratory behavior: The influence of the social and physical context. In H. Keller & K. Schneider (Eds.), *Curiosity and exploration: Theoretical perspectives, research fields, and applications*. New York: Springer-Verlag.
- Schneider, W., & Bös, K. (1985). Exploratorische Analysen zu Komponenten des Schulerfolgs. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, *17*, 325–340.
- Schützwohl, A. (1991). Determinanten von Stolz und Scham: Handlungsergebnis, Erfolgserwartung und Attribution. *Zeitschrift für Experimentelle und Angewandte Psychologie*, *38*, 76–93.
- Schulz, R., Heckhausen, J., & Locher, J. L. (1991). Adult development, control, and adaptive functioning. *Journal of Social Issues*, *47*, 177–196.
- Schuster, B., Försterling, F., & Weiner, B. (1989). Perceiving the causes of success and failure. A cross-cultural examination of attributional concepts. *Journal of Cross-Cultural Psychology*, *20*, 191–213.
- Schwarzer, R. (1984). Worry and emotionality as separate components in test anxiety. *International Review of Applied Psychology*, *33*, 205–219.
- Schwarzer, R. (Ed.) (1992 a). *Self-efficacy: Thought control of action*. Washington, DC: Hemisphere.
- Schwarzer, R. (1992 b). Self-efficacy in the adoption and maintenance of health behaviors: Theoretical approaches and a new model. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action* (pp. 217–242). Washington, DC: Hemisphere.

- Schwarzer, R., & Jerusalem, M. (1982). Selbstwertdienliche Attributionen nach Leistungsrückmeldungen. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, *14*, 47–57.
- Schwarzer, R., & Jerusalem, M. (1989). Development of test anxiety in high school students. In C. D. Spielberger, I. G. Sarason, & J. Strelau (Eds.), *Stress and anxiety* (pp. 65–79). New York: Hemisphere.
- Schwarzer, R., Lange, B., & Jerusalem, M. (1982). Selbstkonzeptentwicklung nach einem Bezugsgruppenwechsel. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, *14*, 125–140.
- Schwarzer, R., & Weiner, B. (1991). Stigma controllability and coping as predictors of emotions and social support. *Journal of Social and Personal Relationships*, *8*, 133–140.
- Seipp, B., & Schwarzer, C. (1991). Angst und Leistung – Eine Meta-Analyse empirischer Befunde. *Zeitschrift für Pädagogische Psychologie*, *5*, 85–97.
- Seligman, M. E. P. (1975). *Helplessness: On depression, development, and death*. San Francisco: Freeman.
- Seligman, M. E. P. (1990). *Learned optimism*. New York: Knopf.
- Selz, O. (1910). Die experimentelle Untersuchung des Willensaktes. *Zeitschrift für Psychologie*, *57*, 241–270.
- Skinner, E. A., Chapman, M., & Baltes, P. B. (1988 a). Children's beliefs about control, means-ends, and agency. *International Journal of Behavioral Development*, *11*, 369–388.
- Skinner, E. A., Chapman, M., & Baltes, P. B. (1988 b). Control, means-ends, and agency beliefs: A new conceptualization and its measurement during childhood. *Journal of Personality and Social Psychology*, *54*, 117–133.
- Sokolowski, K. (1986). *Kognitionen und Emotionen in anschlussthematischen Situationen*. Bergische Universität – Gesamthochschule Wuppertal: Unpublished dissertation.
- Sokolowski, K. (1992). Entwicklung eines Verfahrens zur Messung des Anschlußmotivs. *Diagnostica*, *38*, 1–17.
- Sorrentino, R. M., & Higgins, E. T. (1986). *Handbook of motivation and cognition: Foundations of social behavior* (vol. 1). Chichester: Wiley.
- Steller, B. (1992). *Vorsätze und die Wahrnehmung günstiger Gelegenheiten*. München: tuduv.
- Stengel, M. (1990). Karriereorientierung und Karrieremotivation: Einstieg und Aufstieg von Frauen in Organisationen. In M. Domsch & E. Regnet (Eds.), *Weibliche Fach- und Führungskräfte* (pp. 67–92). Stuttgart: Schäffer.
- Stephan, W. G., & Gollwitzer, P. M. (1981). Affect as a mediator of attributional egotism. *Journal of Experimental Social Psychology*, *17*, 442–458.
- Stiensmeier, J. (1985). Begabungskonzept als Bedingung von Lageorientierung. *Zeitschrift für Experimentelle und Angewandte Psychologie*, *32*, 627–641.
- Stiensmeier, J. (1986). Wichtigkeit und Kontrollerleben als Bedingungen von Lageorientierung. *Archiv für Psychologie*, *138*, 127–138.

- Stiensmeier, J., Kammer, D., Pelster, A., & Niketta, R. (1985). Attributionsstil und Bewertung als Risikofaktoren der depressiven Reaktion. *Diagnostica, 31*, 300–311.
- Stiensmeier, J., & Schnier, R. (1988). Auswahl und Verwirklichung von Absichten bei lage- und handlungsorientierten Senioren. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie, 20*, 134–145.
- Stiensmeier-Pelster, J. (1988). *Erlernte Hilflosigkeit, Handlungskontrolle und Leistung*. Heidelberg: Springer-Verlag.
- Stiensmeier-Pelster, J., Meyza, P., & Lenzen, H.G. (1989). Alkoholismus und Handlungskontrolle: Der Einfluß eines Lauftrainings auf den Therapieverlauf bei handlungs- und lageorientierten Alkoholabhängigen. *Suchtgefahren, 35*, 356–367.
- Stiensmeier-Pelster, J., & Schürmann, M. (1990). Performance deficits following failure: Integrating motivational and functional aspects of learned helplessness. *Anxiety Research, 2*, 211–222.
- Supersaxo, A., Perez, M., & Kramis, J. (1986). Beeinflussung der kausalen Attributionstendenzen von Schülern durch Lehrerattribution. *Psychologie in Erziehung und Unterricht, 33*, 108–116.
- Sydow, H. (1990). Zur Entwicklung der Planungsfähigkeit im Kindesalter. *Zeitschrift für Psychologie, 198*, 431–441.
- Taylor, S. E. (1989). *Positive illusions*. New York: Basic Books.
- Todt, E. (1990). Entwicklung des Interesses. In H. Hetzer, E. Todt, I. Seiffge-Krenke, & R. Arbinger (Eds.), *Angewandte Entwicklungspsychologie des Kindes- und Jugendalters*. (pp. 213–264). Heidelberg: Quelle und Meyer.
- Todt, E., & Händel, B. (1988). Analyse der Kontextabhängigkeit von Physikinteressen. *Der mathematische und naturwissenschaftliche Unterricht, 41*, 137–140.
- Trommsdorf, G., Friedlmeiner, W., & Kienbaum, J. (1991). Entwicklung von Empathie und prosozialem Verhalten bei Kindern. In U. Schmit-Deuter (Eds.), *Bericht über die 10. Tagung für Entwicklungspsychologie*. Köln: Universität Köln.
- Trudewind, C. (1982). Ecological determinants in the development of the achievement motive and its interindividual differences. In W. W. Hartup (Ed.), *Review of child development research* (pp. 669–703). Chicago: University of Chicago Press.
- Trudewind, C. (1987). The role of toys and games in an ecological approach to motive development. In F. Halisch & J. Kuhl (Eds.), *Motivation, intention, and volition* (pp. 179–199). Berlin: Springer-Verlag.
- Trudewind, C., Brünger, T., & Krieger, K. (1986). Parental expectations and the development of achievement motivation. In J. H. L. van den Bercken, E. E. J. De Bruyn, & T. C. M. Bergen (Eds.), *Achievement and task motivation* (pp. 179–199). Lisse: Swets & Zeitlinger.
- Trudewind, C., & Kohne, W. (1982). Bezugsnorm-Orientierung der Lehrer und Motiventwicklung. In F. Rheinberg (Ed.), *Bezugsnormen zur Schulleistungsbewertung: Analyse und Intervention* (pp. 115–141). Düsseldorf: Schwann.
- Trudewind, C., & Schneider, K. (in press). Interindividual differences in the development of exploratory behavior: Methodological considerations. In H. Keller & K. Schneider (Eds.), *Curiosity and exploration: Theoretical perspectives, research fields, and applications*. New York: Springer-Verlag.

- Trudewind, C., Unzner, L., & Schneider, K. (1989). Die Entwicklung der Leistungsmotivation. In H. Keller (Ed.), *Handbuch der Kleinkindforschung* (pp. 491–525). Berlin: Springer-Verlag.
- Unzner, L., Beisenbruch, I., & Schneider, K. (1990). Lächeln von Vorschulkindern in leistungsorientierten Situationen: Beurteilung der emotionalen Bedeutung in Abhängigkeit von weiteren mimischen Merkmalen. *Zeitschrift für Experimentelle und Angewandte Psychologie*, *37*, 660–678.
- Unzner, L., & Schneider, K. (1984). Erlebte Schwierigkeit und subjektive Unsicherheit im Leistungshandeln: Ihre Entwicklung im Vorschulalter. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, *16*, 323–337.
- Voss, H. G. (1987). Differences between exploration and play in terms of action theory. In D. Görlitz, & J. F. Wohlwill (Eds.), *Curiosity, imagination, and play* (pp. 151–178). Hillsdale, NJ: Erlbaum.
- Voss, H. G., & Keller, H. (1983). *Curiosity and exploration: Theories and results*. New York: Academic Press.
- Voss, H. G., & Keller, H. (1986). Curiosity and exploration: A program of investigation. *The German Journal of Psychology*, *10*, 327–337.
- Wagner, U., Wicklund, R. A., & Shaigan, S. (1990). Open devaluation and rejection of a fellow student: The impact of threat to a self-definition. *Basic and Applied Social Psychology*, *11*, 61–76.
- Weiner, B. (1985). "Spontaneous" causal thinking. *Psychological Bulletin*, *97*, 74–84.
- Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York: Springer-Verlag.
- Weiner, B., Frieze, I. H., Kukla, A., Reed, L., Rest, S., & Rosenbaum, R. M. (1971). *Perceiving the causes of success and failure*. New York: General Learning Press.
- Weinert, A. B. (1991). Wertestrukturen und Wertewandel auf dem Hintergrund der Eignungsdiagnostik. Das Inventar persönlicher Motive. In H. Schuler & U. Funke (Eds.), *Eignungsdiagnostik in Forschung und Praxis* (pp. 48–52). Stuttgart: Verlag für Angewandte Psychologie.
- Weinert, F. E., & Helmke, A. (1987). Compensatory effects of student self-concept and instructional quality on academic achievement. In F. Halisch & J. Kuhl (Eds.), *Motivation, intention, and volition*. (pp. 233–247). Berlin: Springer-Verlag.
- Wender, I., & Gerling, M. (1985). Empathie und Verursachungszuschreibung als Entwicklungsbedingung der aufteilenden Gerechtigkeit. *Zeitschrift für Entwicklungs- und Pädagogische Psychologie*, *17*, 341–350.
- Weßling-Lünnemann, G. (1985). *Motivationsförderung im Unterricht*. Göttingen: Hogrefe.
- Westermann, R., & Siedersleben, S. (1990). Ursachenattributionen und Schwereinschätzungen von Regelverstößen im Sport. *Zeitschrift für Sozialpsychologie*, *21*, 189–195.
- Wicklund, R. A., & Gollwitzer, P. M. (1981). Symbolic self-completion, attempted influence, and self-deprecation. *Basic and Applied Social Psychology*, *2*, 89–114.
- Wicklund, R. A., & Gollwitzer, P. M. (1982). *Symbolic self-completion*. Hillsdale, NJ: Erlbaum.

- Winteler, A., Sierwald, W., & Schiefele, U. (1988). Interesse, Leistung und Wissen: Die Erfassung von Studieninteresse und seine Bedeutung für Studienleistung und fachbezogenes Wissen. *Empirische Pädagogik*, 2, 227–250.
- Zillmann, D. (1978). Attribution and misattribution of excitatory reactions. In J. H. Harvey, W. Ickes, & R. F. Kidd (Eds.), *New directions in attribution research* (pp. 335–370). Hillsdale, NJ: Erlbaum.
- Zullo, H., Oettingen, G., Peterson, C., & Seligman, M. E. P. (1988). Pessimistic explanatory style in the historical record: Lyndon B. Johnson, Presidential Election, and East vs. West Berlin. *American Psychologist*, 43, 673–682.
- Zumkley, H. (1978). *Aggression und Katharsis*. Göttingen: Hogrefe.
- Zumkley, H. (1981). Der Einfluß unterschiedlicher Absichtsattributionen auf das Aggressionsverhalten und die Aktivierung. *Psychologische Beiträge*, 23, 115–128.
- Zumkley, H. (1982). Kausale Ambiguität: Vorrangigkeit externaler Ursachen? Effekte nachträglicher Abwertung einer Intentionsattribution auf Vergeltungsaggression und Aktivierung. *Psychologische Beiträge*, 24, 224–241.
- Zumkley, H. (1984). Einflüsse von individuellen Differenzen der Aggressivität bei kausaler Ambiguität. *Zeitschrift für Differentielle und Diagnostische Psychologie*, 5, 131–140.
- Zumkley, H. (1985). Operante versus respondente Messung von Aggressivität, Vigilanz und Wahrnehmungsabwehr bei der Identifikation von aggressionsrelevanten Wörtern. *Psychologische Beiträge*, 27, 68–78.
- Zumkley, H. (1987). *Zur Gültigkeit des Aggressions-Motiv-Gitters*. *Psychologische Beiträge*, 29, 558–566.

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