Knowledge and Action

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Introduction

Dieter Frey, Heinz Mandl, & Lutz von Rosenstiel

In this volume, we summarize the findings of a research group on the topic of knowledge and action, supported by the German Science Foundation, at the University of Munich. The joint endeavor of the research group was to investigate the action-relevant function of knowledge in different areas, as well as to investigate the effect that the acquisition of knowledge has on action in certain fields. The disciplines involved were social psychology, cognitive psychology, work and organizational psychology, educational psychology and developmental psychology.

The relationship between knowledge and action is highly important for the following reasons:

1) without knowledge, there is often no action, and
2) knowledge can highly influence the action taken.

However, there are high levels of inconsistency between knowledge and action and little research is available on this relationship.

Knowledge and action: How these concepts are used

Differentiation is made between declarative and procedural knowledge about a certain field. For example: Knowledge about leadership strategies (Kehr & von Rosenstiel), knowledge about aspects of decision cases (Jonas, Schulz-Hardt, & Frey), functional knowledge about language in use (Henninger, Mandl, & Hörfurter), and knowledge about nursing (Büssing, Herbig, & Latzel). Knowledge is used in the sense of “self-relevant knowledge,” for example, concerning one’s own performance in certain school subjects (Ziegler, Heller, Schober, & Dresel), knowledge about one’s own goals (Brandstätter & Frank), and knowledge about action results (Fürsterling); see Figure 1.

On the other hand, action (as shown in Figure 2) also relates to various action processes, such as the integration of learned self-management strategies into one’s own leadership behavior (Kehr & von Rosenstiel). The particularities of the concept of action differ in each of the individual projects. Some are based on the Rubicon Model (such as the Brandstätter project), which encompasses the whole action process, whereas others, such as Frey’s project, focus on decision processes and cognitive processes.
The process of converting knowledge into action can be seen as a dynamic process. Therefore, emotional, cognitive, motivational, volitional, and action-regulating processes should be investigated. Because of the complexity of the processes involved, it is not yet possible to have one single knowledge or action theory that sufficiently describes the whole dynamic. However, it is necessary to investigate the different processes involved.

In the following section, we provide an overview of the research questions. These encompassed, for example:

1. In which ways does knowledge about end goals affect the persistence of intentional and motivated action and the process of abandoning certain actions or goals? (Brandstätter & Frank)
2. How do different degrees of freedom in the workplace relate to different levels of work satisfaction? (Büssing, Herbig, & Latzel)
3. How do actual behavior or decisions influence the subsequent search for information? Can selectivity in the search for information impair subsequent decisions? (Jonas, Schulz-Hardt, & Frey)

Goal-related knowledge is understood in the sense of desirability/value/incentive of the specific goal. Self-related knowledge means beliefs concerning the realization of the specific goal (e.g., self-efficacy, outcome-expectancy, independence of proceeding action results and their attribution).

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**Figure 2.** The two main aspects of transforming knowledge into action: Knowledge and motivation/volition.

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Motivation and volition</th>
<th>Action result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge about an individual’s own motivation and volition (Brandstätter &amp; Frank; Kehr &amp; von Rosenstiel)</td>
<td>Attribution (Ziegler, Heller, Schober, &amp; Dresel; Försterling)</td>
<td>Performance and well-being in the workplace (Buessing, Herbig, &amp; Latzel)</td>
</tr>
<tr>
<td>Self-related knowledge (Ziegler, Heller, Schober, &amp; Dresel)</td>
<td>Goal commitment, intrinsic motivation, and volitional competence (Kehr &amp; von Rosenstiel)</td>
<td>Transfer of training goals (Kehr &amp; von Rosenstiel)</td>
</tr>
<tr>
<td>Functional knowledge for language in use (Henninger &amp; Mandl)</td>
<td>Work requirements and forms of work satisfaction (Büssing, Herbig, &amp; Latzel)</td>
<td>Competence in flexible goal persistence (Brandstätter &amp; Frank)</td>
</tr>
<tr>
<td>Information about decision cases (Jonas, Schulz-Hardt, &amp; Frey)</td>
<td>Self-efficacy (Ziegler, Heller, Schober, &amp; Dresel)</td>
<td>Quality of school learning and school performance (Ziegler, Heller, Schober, &amp; Dresel)</td>
</tr>
<tr>
<td>Knowledge about the causes of events (Försterling)</td>
<td>Decision making (Jonas, Schulz-Hardt, &amp; Frey)</td>
<td>Communicative competence (Henninger &amp; Mandl)</td>
</tr>
<tr>
<td></td>
<td>Goal orientation (Henning, Mandl, &amp; Hörfurter)</td>
<td>Optimization of leadership behavior (Kehr &amp; von Rosenstiel)</td>
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<td></td>
<td>Mindsets (Brandstätter &amp; Frank)</td>
<td>Quality of decisions (Jonas, Schulz-Hardt, &amp; Frey)</td>
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<td></td>
<td></td>
<td>Task achievement and affective reactions (Försterling)</td>
</tr>
</tbody>
</table>
• Which facets of the self-related and action-related knowledge of students are crucial for adequate learning processes and school performance? Can improvements in self-related and action-related knowledge (attained, e.g., with cognitively oriented attributional retraining) boost school learning and performance in different domains? (Ziegler, Heller, Schober, & Dresel)

• Do more authentic learning environments lead to better learning result in the field of communicative competence? How can the acquisition of transferable communication knowledge be fostered? (Henninger & Mandl)

• How does motivational and volitional knowledge influence the process of leadership behavior? Under which conditions will intentions concerning new behavior be translated into action? (Kehr & von Rosenstiel)

• How can we define and measure realistic and unrealistic attributions and what are the emotional and behavioral consequences of causal ascriptions differing in veridicality (Försterling)?

All of the projects of the research group investigated goal-directed action and behavior; i.e., our research did not involve reflexes, automatic motor actions, or habitual actions.

In these articles, knowledge and action are viewed not as a unidirectional process, but as an interaction. Transforming knowledge into action is not the only focus; some projects investigate how action (in the sense of decisions) influences ongoing information seeking, and how this information and knowledge seeking influences ongoing actions.

Knowledge alone is not sufficient for action to take place, as no one will act in a way he or she does not want. Therefore, it is important to also consider motivational and volitional factors. Knowledge is only the first step in the process of action. The second step comprises motivational and volitional processes. A certain action will be carried out only if motivation/volition is adequate. Therefore, a scientific investigation of the process of knowledge and action should consider:

• knowledge about goals and actions
• motivational processes of goal choice
• volitional processes of goal-directed action
• evaluative processes of action results.

As the different articles show, goal-oriented action always relates to an action’s results. There is also evidence of universal relevance in different fields of application: School performance in physics and chemistry, linguistic communicative competence, optimizing one’s own leadership behavior, quality of decision making, competence in flexible goal persistence, performance and well-being at the workplace, and attribution.

The articles in this book are concerned either with the acquisition of knowledge or with the motivational/volitional conditions which promote the transformation of knowledge into action. The following questions relate to knowledge acquisition:

• How must learning environments be structured to ensure that knowledge can be acquired effectively and in a sustainable way?
• How do people behave when searching for sufficient knowledge in order to make a decision (information seeking)?

The motivational and volitional basis of action encompasses aspects such as:

• What are the person’s aspirations?
• What motivational and volitional competencies does a person have?
• What role does self-efficacy play?
• Which attributions are made after certain results?

Our empirical research can also be applied to the field of intervention. For example, Kehr & von Rosenstiel’s project developed an innovative approach to self-management training for leadership behavior in order to strengthen the transfer of knowledge.

Ziegler et al. show with a series of intervention studies that attributional retraining can be applied successfully to enhance self-related knowledge, motivation, action, and performance also in the ecologically valid setting of regular school classes. Furthermore, they showed that the effectiveness of attribution retraining can be enhanced if the content and sequence of the attributional feedback is concordant with an incremental view of an individual’s own competences. In addition, by applying the newly developed Munich Motivational Training (MMT), a fully integrated concept of all facets of self-related knowledge and motivation, they were able to observe training effects on motivation and school action that are larger than those of previous training attempts.

Mandl & Henninger showed that multimedia training enables participants to reflect their behavior more accurately and to perform better subsequently, when they find themselves in difficult communication situations.

Frey et al. specified how to reduce the number of incorrect decisions by identifying the personal and situational factors that distort knowledge seeking after tentative decisions. Incorrect decisions are a costly factor and may have serious consequences on subsequent actions in politics and economics, as well as in private life.

Summary

All of the projects undertaken by the research group “Knowledge and Action” at the University of Munich dealt with goal-oriented, intentional actions.

In order to “act” in the sense of the above definition, an individual has to
• know how the action can be carried out (in all its different stages, e.g., beginning, middle, and end)
• manage the whole process of intentionally acting, i.e., the individual has to coordinate decision processes, planning his or her actions, acting, and evaluating the process (i.e., what the individual has achieved).

Through our analyses, we are able to better explain how learning takes place, i.e., how new behavior can be learned (step one), converted into action (step two), and maintained on a regular basis (step three).

These theoretical insights can be important in different fields, for example:
• transfer of knowledge after training programs
• improving teaching within schools
• enabling employees to continuously learn
• establishing means and institutions in our societies that help educate people so that they will be able to better handle the global changes in many different areas and on many different levels in the future.