

The Psychology of Control and Aging

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13 Occupational Careers, Work, and Control

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ABSTRACT

In the present chapter, we report the results of a series of empirical studies in which locus of control is analyzed in connection with different occupational careers, working conditions, employees' perceptions, and employees' evaluations of their work. A critique of the state of extant empirical research is used as a basis for consideration of theoretical issues. Following a discussion of the various ways in which the occupational domain can be differentiated with regard to objective control possibilities (i.e., in terms of restrictiveness), an environmentally oriented concept of control awareness is presented. In contrast to the well-known distinction between internal and external locus of control, this new approach additionally differentiates deterministic and interactional forms of control awareness. Finally, the developmental course of control awareness is discussed both in terms of its relationship to occupational restrictiveness and its significance for retirement.

INTRODUCTION

The present chapter deals with the relationship between work and locus of control. We begin with an overview and critique of empirical studies and then turn our attention toward more basic, theoretical considerations and their implications for developmental psychology.

In the *first section*, empirical studies are briefly summarized. Because a detailed presentation of research studies is beyond the scope of this chapter, we have restricted ourselves to those studies in which locus of control served as a psychological variable (see Levenson, 1974; Rotter, 1966). Not included are studies of sociological or social psychological concepts of locus of control, such as "alienation" (Seeman, 1959) or "personal causation" (the origin/pawn variable,

DeCharms, 1968). Empirical findings on the relationship between occupational restrictiveness and locus of control and between locus of control and occupationally oriented evaluations (e.g., job satisfaction) and behavior (e.g., occupational involvement) are presented and discussed.

An analysis of the current empirical research on locus of control and occupational factors leads to the conclusion that both a more person-oriented conception of the working environment as well as a more environmentally oriented conception of locus of control is needed. The demand for a more environmentally oriented approach to locus of control stems not only from our critique of the insufficient attention paid to environmental factors in the development of control beliefs, especially in the occupational domain, but also from a general criticism of the concept of locus of control.

In the *second section*, we outline our own suggestions concerning these demands. In addition to arguing for a more person-oriented conception of the working environment, we are interested in presenting an environmentally oriented concept of control awareness, in which the *quality* of control (deterministic or reciprocal interaction) is at least as important to a description of interindividual differences and their development as the *locus* of control (internal or external). It is, therefore, not our aim to introduce a new construct but rather to demonstrate that our approach can significantly contribute to a comprehensive and integrated understanding of control concepts.

In the *third section*, we discuss some developmentally relevant implications of our concept of control awareness. Using the transition from work to retirement as an example, we attempt to show how different occupational careers and different types of control awareness can influence the course of life.

STUDIES OF THE RELATIONSHIP BETWEEN WORK AND LOCUS OF CONTROL

Compared with the total number of studies dealing with locus of control, the number of those specifically addressing the occupational domain is small. In a very brief overview of the research in this area (for a more comprehensive survey, see Hohner, 1984, 1985), we distinguish the following perspectives, which usually are not made explicit in the studies themselves:

1. *Objective working conditions and their restrictiveness*: Here the assessment of working conditions and their restrictiveness, which are determined independently of the individuals concerned, are analyzed by job researchers.

2. *Perceived working conditions and perceived restrictiveness*: Here the features of the working conditions are assessed from the perspective of the individuals concerned. A distinction between objective and perceived restrictiveness appears to be necessary in light of empirical results (Euler, 1977; Oegerli & Udris, 1981; Semmer, 1982; Volpert, Oesterreich, Gablenz-Kolakovic, Krogoll, & Resch, 1983), which reveal differences in the information obtained regarding

working conditions depending on whether this information is assessed directly from the individuals concerned or from others.

3. *Locus of control*. Whereas objective and perceived restrictiveness refer to environmental factors, locus of control has to do with a differential personality measure. In the studies to be reviewed, locus of control was measured with Rotter's Internal-External (I-E) scales (Rotter, 1966, 1975) or with similarly constructed instruments. Individuals are characterized as internal when they tend to evaluate events as results of their own action or relatively permanent characteristics (i.e., they perceive themselves as subjects of their environmental); individuals are characterized as external or fatalistic if they tend to evaluate events as noncontingent upon themselves but as the result of other people, outside forces or fate (i.e., they perceive themselves as objects of their environment).

Occupational Restrictiveness and Locus of Control

In studies on the relationship of locus of control and job conditions aspects of the work environment are not assessed independently of the individuals concerned. Global, job-related indicators such as "occupational level" can be considered, however, as an approximate indicator of objective restrictiveness. Such indicators usually refer to an employee's position within an organization or indicate membership in a particular professional or status group (e.g., blue-collar workers or white-collar workers). The results of several studies have shown that such *global occupational indicators* are appropriate for general characterizations of occupational control or restrictiveness (Denison, 1982; Karasek, 1981; Oegerli & Udris, 1981; Wilpert & Rayley, 1983; Zündorf & Grunt, 1980). In these studies, a high occupational level corresponded to increased opportunities for control, whereas a lower level was characteristic of more restrictive working conditions.

Numerous other studies have likewise established the correspondence between high professional level (accompanied by self-directed working conditions) and internal locus of control. In contrast, a lower occupational level (indicating restrictive working conditions) corresponds to an external locus of control. These studies were conducted in West Germany, India, and the United States and had samples ranging from 200 to over 1,000 subjects. Locus of control was primarily assessed with modified or shortened Internal-External scales, but also with measures constructed by the authors.

In general, employees in managerial positions and professionals with high levels of training scored more internal than did nonsupervisory and less qualified employees (Mitchell, Smyser, & Weed, 1975; Pestonjee, 1979; Ryckman & Malikiosi, 1974; Szilagyi, Sims, & Keller, 1976). In a comparison of blue-collar and white-collar workers, white-collar workers reported more internal perceptions (Hohner & Walter, 1981; Jurkuhn, 1978). If level of income is analyzed in relation to locus of control, a correlation between high income levels and

internal locus of control is found (Hohner & Walter, 1981; Jurkuhn, 1978; Vecchio, 1981).

Results of studies on the relationship between *specific occupational aspects*, as perceived by the employees concerned, and locus of control point in the same direction. In a number of the studies just mentioned, various aspects of individual jobs, such as high level of complexity, possibilities for self-direction, low levels of workload, and job variety were associated with locus of control (see also Hammer & Vardi, 1981). A lower level of perceived restrictiveness correlated with more internal locus of control.

Although we cannot provide a detailed list of all the studies with similar results that, although not employing psychological instruments such as Rotter's, did use very similar control items, a series of studies by Kohn and Schooler (1982, 1983) are particularly noteworthy for several reasons. First, employees' orientation toward autonomy ("self-directed orientation," for example, "attribution of responsibility") was assessed. Second, Kohn and Schooler conducted not only cross-sectional but also longitudinal studies that unlike the studies mentioned so far allow causal interpretation. Third, their studies were in part conducted with samples that can be considered representative for the entire work spectrum of occupations and professions in the United States. In their studies, these authors were able to isolate individual aspects of control in working conditions, which they consider to significantly effect psychological functioning, regardless of other job conditions and training. These "structural imperatives of the job" are: (1) the position in the organizational structure (ownership, bureaucratization, position in hierarchy), (2) occupational self-direction (substantive complexity, routinization, closeness of supervision), (3) job pressures (time pressure, heaviness, dirtiness, number of hours per week), and (4) the extrinsic risks and rewards (probability of being held responsible for things outside one's control, risk of losing one's job or business, job protections, job income). Kohn and Schooler's most significant findings from these studies indicate that the structural imperatives of the job and personality influence each other reciprocally over the course of time. On the one hand, jobs facilitating self-determination lead to an autonomous orientation and jobs that can be characterized as restrictive tend to promote conformist attitudes. On the other hand, an autonomous attitude often leads to jobs that objectively offer greater latitude for occupational self-direction.

Finally, a recent study (Häfeli, Kraft, & Schallberger, 1983) appears important to us because it is as comprehensive in scope as the studies by Kohn and Schooler (1982, 1983). The sample of 3,500 apprentices covers almost the entire range of industrial-professional jobs in Switzerland. Locus of control is assessed with German items of the Reid-Ware (1974) scale. Despite the absence of longitudinal data until now, the cross-sectional comparison of apprentices (in the 1st and in the 3rd year of their apprenticeship) suggests that locus of control changes in connection with occupational conditions, particularly with regard to type of work and quality of job training. It is especially noteworthy that average levels of

occupational restrictiveness are associated with changes in the direction of internal locus of control.

Job-Related Evaluations, Job-Related Behavior, and Locus of Control

Aside from global occupational aspects, the aforementioned studies focused primarily on *perceptions*. We now review research on employees' *evaluations* of their own work in connection with locus of control.

Obviously, for certain individuals and subgroups, the perception of one's own occupational reality may be distorted. Many studies document not only agreement (Oegerli & Udris, 1981), but also discrepancies (Volpert et al., 1983) between the assessment of possibilities for control by employees made by industrial psychologists and sociologists and the assessment of their own working conditions as perceived by employees themselves. Evaluations concerning such variables as job satisfaction show even stronger discrepancies, that is, they provide even less valid information regarding objective working conditions and opportunities for control or restrictiveness. Kasl (1974) has convincingly argued that the concept of job satisfaction does not pertain solely to environmental/occupational characteristics or to personality measures but rather to an interaction between the two. In our opinion this is also true for subjective appraisal of one's own occupational success, degree of job involvement, subjectively experienced stress, or similar evaluative data.

Several studies show evidence of a relationship between *job satisfaction* and locus of control. These studies were conducted with small samples of scientists and engineers (Organ & Greene, 1974) or nonsalaried employees (Runyon, 1973), as well as with more than a thousand male employees (Vecchio, 1981). All these studies, except that of Runyon (1973), showed a high degree of relationship between internal locus of control and job satisfaction. Researchers examining whether locus of control served as a moderator variable between job satisfaction and perception of various job characteristics have produced contradictory results (Evans, 1973; Kimmons & Greenhaus, 1976; Mitchell et al., 1975; Runyon, 1973; Sims & Szilagy, 1976; Vecchio, 1981).

In two longitudinal (Andrisani, 1977; Frantz, 1980) and two cross-sectional studies (Hammer & Vardi, 1981; Heisler, 1974) the relationship between *career success* and locus of control was investigated. Locus of control was assessed in all four studies with items from Rotter's Internal-External scale. In the two panel studies, 1,000 and 7,500 interviewees from the American National Longitudinal Surveys were included; in the cross-sectional studies 560 blue-collar and white-collar employees as well as 200 civil service employees were interviewed. All studies showed a positive relationship between internal locus of control and career success. In both panel studies, an interaction between locus of control and objective occupational factors (e.g., increase in income) such as that found

in the study by Kohn and Schooler (1982) was demonstrated. After 2 years the "internals" of Andrisani's (1977) first survey had better positions and higher incomes than the "externals." Frantz (1980) was able to show that occupational success is more likely for those with a more internal orientation.

A high correlation between internal locus of control and positively evaluated *job performance* is reported in four empirical studies (Broedling, 1975; Hersch & Scheibe, 1967; Lied & Pritchard, 1976; Majumder, MacDonald, & Greever, 1977). In some of these studies the evaluations not only of the employees but also of their supervisors were assessed.

Studies of the evaluation of *job involvement* reveal findings similar to those of career success and job performance. Job involvement was examined cross-sectionally in studies on small samples of nonsalaried employees (Runyon, 1973) and managers (Kimmons & Greenhaus, 1976), as well as in a study on 300 employees from six different countries (Reitz & Jewell, 1979). In all three studies, internal scores (as assessed with Rotter's scale) were positively associated with job involvement.

The relationship between other kinds of job-related evaluations and locus of control was analyzed in a number of studies. Becker and Krzystofiak (1982) examined a subgroup of the American National Longitudinal Surveys to determine whether and how intensively blacks perceive *job discrimination*. In their longitudinal analyses perceived discrimination correlated with external locus of control. The anticipated relationship between locus of control and perceived *occupational stress* could not be verified in a study by Brousseau and Mallinger (1981) on approximately 100 dentists. Instead, more internal locus of control showed a moderate and positive correlation with physiological health measures.

Frese, Schmidt-Hieber, and Leitner (1981) reported that employee's perceived "cognitive control," as indicated, among other things, by items measuring locus of control according to Levenson (1974), serves as a moderator variable between stressful working conditions and psychological well-being. Greater cognitive control intensifies both the relationship between jobs with a low level of stress and a feeling of well-being as well as the relationship between occupations with a great amount of stress and lack of well-being.

Finally, Kabanoff and O'Brien (1980) analyzed a relatively weak moderating effect of locus of control. In this study, which used a sample representative of Australia, it was shown that locus of control moderated between work experiences and leisure experiences and between work behavior and leisure behavior.

Summary and Critique of Research: Open Questions, Problems, and Relationships to Other Research Traditions

The few studies in which locus of control has been viewed as a moderator variable between occupational and/or personality factors show rather inconsistent results (cf. also White, 1978). In contrast, numerous bivariate cross-sectional

studies consistently have replicated results, which indicate that working conditions that facilitate self-determination and positive job evaluations are positively correlated with internal locus of control. Restrictive working conditions and negative job experiences are positively correlated with external locus of control. Despite this pronounced convergence of results, the strength of the correlations (or the amount of variance explained by locus of control) is in almost every case small. Furthermore, none of these studies contain conclusive evidence as to whether the subjects' positions in the hierarchy and their experiences at work are the cause or the result of the demonstrated personality differences. On the basis of such ambiguous causal relationships, practical and political implications for industrial-organizational policies are not straightforward. If, for example, locus of control were seen as an invariant personality trait rather than a variable influenced by working conditions, changes would not be aimed at conditions on the job, but instead on the use of locus of control scores for selecting and allocating individuals to specific jobs, as has been suggested by Spector (1982; cf. Hohner, 1984, 1985, for a critique).

If studies are to go beyond the consistent but rather weak relationships already known, only longitudinal or similarly designed studies can lead to a clear increase of knowledge about causal relationships, that is, that perceived occupational conditions of low and middle restrictiveness contribute to a change toward a more internal orientation (Häfeli, Kraft, & Schallberger, 1983). Kohn and Schooler (1982) show that the relationship between perceived working conditions and an autonomous orientation is reciprocal. This finding in combination with the results of Andrisani (1977) and Frantz (1980), which show that locus of control also can influence behavior and contribute to the development of occupational careers and occupational success, becomes more significant when one considers the problems of oversimplified monocausal interpretations.

The question of whether behavior is determined by the person or by the situation/environment played a major role in the debate on personality during the early 1970s, but was described by Endler (1976) as a "pseudo issue." Endler went even further to assert that the focus on this pseudo issue actually masks a much more important question: "How do individual differences and situations interact in evoking behavior?" (p. 587).

Our review of the research on locus of control and working environments leads to a similar conclusion. *First*, we know that a relationship exists between working environment and personality traits (i.e., locus of control). Especially because this statement appears obvious, more impressive results would be expected. *Second*, based in particular on the cited longitudinal studies, the two monocausal interpretations of this relationship can be excluded. Instead the relationship between working conditions and locus of control can be described as reciprocal. In contrast to Endler, we see behavior not only as determined by an interaction between person and environment (in the sense of analysis of variance) but as identical with the interactive process itself. *Third*, these observations lead to the conclusion that the major research question is *how* locus of control and working conditions

actually mutually influence each other, and *how* the resulting occupational careers can be described in terms of different patterns of interaction. This question has not been dealt with satisfactorily in previous studies. In our opinion the reason for this (as well as for the numerous weak and conflicting research results) is to be found in basic conceptual problems regarding conceptualization and the assessment of working conditions and of locus of control. It is not our intention to simply call attention to these problems but also to briefly describe some German research traditions that we consider viable approaches to solving these difficulties. We deal with our specific proposed solutions in the second section of the chapter (cf. Hoff, 1985).

Problems of Conceptualizing and Measuring Working Conditions. Some of the problems encountered in attempting to conceptualize and measure working conditions have already been mentioned. Specific aspects of working conditions have only been assessed through the perceptions of the individuals involved. This can lead to distortions of the real situation and even to systematic errors, which can not be eliminated or interpreted as long as these jobs are not analyzed by experts as well.

Although job analysis by experts has a long and diverse tradition in German occupational and industrial sociology, the application of this approach to research on the relationship between working conditions and personality is still in its infancy (Hoff, Lappe, & Lempert, 1983). The comprehensive range of working conditions covered in analyses of large samples of male and female employees (e.g., Kern & Schumann, 1970, Lappe & Schöll-Schwinghammer, 1978) is typical only of these sociological studies. By comparison, the selection of occupational dimensions in the previously mentioned studies of locus of control often appears to be arbitrary and inconsistent from one study to another. Isolated aspects of working conditions are often taken out of the context in which they are relevant and without which they do not make sense. They are then artificially associated with locus of control. Isolated features regarding type of work, work environment, and social relationships are considered, but more general aspects of companies, branches of industry, or the job market are ignored. The main problem behind the partly inconsistent and arbitrary selection of variables is only partly rectified by more comprehensive sociological job analyses, however. Here as well as in other approaches the connection to the working individual is missing. It is still unclear what is actually meant by the terms *restrictive* or *facilitating autonomy* in reference to the individual's job. The extent to which occupational dimensions contribute to global restrictiveness also remains vague.

It is to be noted here that German industrial psychology uses a person-oriented approach in the analysis of objective working conditions. However, this approach does not take the entire spectrum of working conditions into account, but rather the nature of the work, in particular the cognitive demands placed upon employees (Hacker, 1978; Volpert et al., 1983).

In comparison to measurement in the field of personality, which is primarily concerned with cross-situationally consistent and temporally stable features of locus of control, assessment in the occupational domain focuses mainly on descriptions of actual working conditions at a given point in time. This is true not only for cross-sectional but also for longitudinal studies in which assessment is made at two or more points in time. The process that occurs between measurements and for which no description is available is assumed to be basically continuous either as a rise, fall, or stagnation of occupational careers. Other variants of occupational-biographical processes (e.g., discontinuous processes) receive hardly any attention. In this respect, an approach used in German occupational sociology (Beck & Brater, 1978), in which different structures of occupational biographies are differentiated, appears of particular interest. One of the main theses is, for example, that the longer individuals follow the normal channels of career development within a specific field the more they become cut off from other occupational possibilities.

Problems Associated With the Measurement of Locus of Control. The problems associated with the measurement of locus of control appear initially to be fewer than those associated with assessment of working conditions. In contrast to the occupational domain, it should be clear which characteristics are to be measured, no matter which scales are used: the personality trait representing cross-situationally consistent and temporally stable expectations about the extent to which important events are caused by internal or external factors.

We argue that both aspects of this personality dimension are problematic in the context of the research goals described in this chapter: (1) the conception of locus of control as a trait, and (2) the view that its relevant dimensions are internal and external locus of control.

Apart from the well-known failure to differentiate between diverse dimensions (e.g., between "personal control" and "control ideology"), there are additional difficulties associated with the generalizability in terms of cross-situational consistency and temporal stability of locus of control. These difficulties converge on a basic problem encountered in the domain of personality, which is similar to a problem pivotal in the occupational domain. With regard to work, a person-related description of the environment is neglected whereas in the locus of control approach, an environment-related description of the personality is omitted. Contrary to Rotter's concept, which was based on learning theory, locus of control has been operationalized as a trait. The static view of relatively stable and barely modifiable characteristics becomes obvious in the items, most of which are formulated independently of context and situational factors. This conceptualization becomes extremely problematic when used in studies, which aim to examine whether personality can be influenced by work, or vice versa. Of interest is the relationship between interindividual personality differences with their accompanying *intraindividual plasticity* (and not stability) and different occupational

careers. In our opinion, one of the major causes of the modest correlations found in the majority of empirical studies lies in the contradiction between proposed research goals and the operationalization of locus of control.

Our most important criticism of the conceptualization and operationalization of locus of control is limited not only to the studies mentioned earlier but is also intended as a critique of the concept of locus of control in general. With well-known instruments such as those by Rotter (1966) or Levenson (1974) it is impossible to measure locus of control if it is conceived of as an *interplay* of external and internal factors. Regardless of whether items have to be answered dichotomously or in the form of a rating scale, or whether locus of control is measured by unidimensional-bipolar (such as by Rotter) or multidimensional-unipolar (such as by Levenson) instruments, subjects can only choose between external or internal answers or rate the external, internal, or fatalistic intensity of an item. In no case, however, can subjects simultaneously consider both external and internal effects of the same situation, effectively preventing the detection of interactional control beliefs, should they exist. This is prevented by both the operationalization of the instruments as well as their accompanying instructions. An alternative conception of locus of control that allows not only the assessment of internal, external, or fatalistic but also of "interactional" forms of control awareness is presented in a later section.

ISSUES REGARDING OBJECTIVE RESTRICTIVENESS AND CONTROL AWARENESS

The conclusion that current conceptions of control and occupational restrictiveness are not adequate for our purposes reflects a recognition of deeper underlying theoretical problems with the constructs: From its inception, locus of control was not conceptualized as environmentally oriented, and occupational characteristics were not described as person oriented. This means for example, that locus of control is conceived of as being impervious to environmental influences and as not reflecting actual constellations of causal factors.

However, the possibility of a reciprocal relationship on the theoretical level is prerequisite for a developmental approach to understanding the process by which central beliefs and environmental restrictiveness influence each other over time. The demand for longitudinal studies (Frese, 1982) is, therefore, not enough. If locus of control is conceived of as being influenced by work, it becomes necessary to distinguish other types of control (in addition to internal or external/fatalistic), especially types of control beliefs that simultaneously allow for restrictiveness *and* possibilities for self-direction, as are characteristic of several occupations.

Also, in order to relate continuous and discontinuous processes of personality development to the continuity or discontinuity of occupational restrictiveness, it

will be necessary to conceive control as the subjective synthesis of simultaneous external and internal factors. We certainly will not be able to answer the centrally important question of *how* occupational reality and personality interact; this would be an endeavor that goes beyond the scope of this chapter. However, a differentiated and above all mutually reciprocal conception of occupational characteristics and control awareness appears to us to be the first necessary step toward answering this question. We therefore attempt to outline a person-oriented concept of working environment and present an environment-oriented concept of control awareness.

Objective Occupational Restrictiveness

Suggestions about how to use person-related features to characterize differences in environmental restrictiveness are scattered among the psychological literature. Proshansky, Ittelson, and Rivlin (1970) mention differences in the degree of freedom in selecting behaviors or in the availability of a different range of behavioral possibilities. Mischel (1976) refers to a similar idea, when he mentions more or less structured situations. Based on these and corresponding sociological considerations, a first step toward a person-oriented description of working environments may be a *global* definition of restrictiveness (Hoff, 1981) as the extent to which either behavior as a reaction and adaptation to the demands of the situation is enforced, or action as a reshaping of the situation is possible. (Whether the objective possibilities are perceived is, of course, dependent on each person's internal potential.) Complex environments—in this specific case, working environments—can therefore be distinguished by the extent to which they allow or even demand their own changeability and thus encourage the exhibition of interindividual differences, or vice versa, how strongly they enforce a particular behavioral outcome. Instead of assuming the widespread and narrower understanding of "control" or "chances for self-direction" as one occupational dimension among others, we now identify "occupational restrictiveness" as a descriptor that can be used to characterize almost every aspect of working environments. We now describe more precisely the meaning of restrictiveness in each separate facet of work environment.

We previously discussed the especially comprehensive job analyses in German studies. These were initially developed for the spectrum of industrial workplaces (Kern & Schumann, 1970) but are equally suited for a description of activities outside of industrial settings. Objective restrictiveness can be understood *specifically* within each of the following work aspects.

1. *Time Structure.* Low restrictiveness means in this case that the individual can potentially structure his or her work time; this possibility decreases as external structuring (e.g., time schedules, unit numbers, etc.) increases. The number of individual techniques developed to thwart external attempts to exert time pressure

as well as collective strategies to minimize restrictive, repetitive, and piecework indicates that it may be important to consider collective possibilities for control.

2. *Space for Movement.* The space of action is the larger the less the work is spatially restricted (e.g., to certain machines, parts of machines, rooms, departments, shop areas, etc.). It is obvious that low restrictiveness and objective potential control of one's own space is often (although not always) accompanied by individual control of time as well as an objectively greater probability of avoiding outside control, for example, by superiors. It is also likely to be associated with social contacts with colleagues.

3. *Cooperation.* This term normally indicates relations between colleagues rooted in the work they share. Low restrictiveness in this context means the actual opportunity to start and structure social contacts—including informal contacts, which are not directly related to mutual assistance, exchange of knowledge, or problem-solving strategies. Worthy of note is the close relationship between cooperation and the type of social control, which is normally discussed independently of this dimension, namely supervision of work, for example, by superiors. Horizontal cooperation (e.g., in groups of pieceworkers) offers collective opportunities for action against outside control at a vertical hierarchical level in most cases.

4. *Responsibility/Supervision.* This area includes what is typically labeled *control* in the narrower sense. Strictly speaking, two dimensions can be distinguished: on the one hand, individual control by *oneself* or responsibility for other persons, materials, media, organizational structures, etc. and on the other hand, control by *others* or supervision by means of persons, technical devices, time clocks, organizational structures, etc. Limited opportunity for self-directed action or responsibility is often associated with a high degree of supervision by others. This, however, is not always the case. It may be mentioned that even in institutions where supervision is apparently total there is often latitude for individual or collective action.

5. *Qualifications.* This dimension that deals exclusively with the *content* of work is central to the industrial-psychological analyses mentioned earlier (Hacker, 1978; Volpert et al., 1983). Low restrictiveness or objective potential control means in this context that people have the power to decide not only about partial goals, means, and methods, but also about overall goals of their work. In contrast, objectively external, highly one-sided determination means that nothing beyond sensorimotor skills is demanded. Actual job requirements usually lie between these extremes.

6. *Stress/Workload.* This area is a focal point of industrial psychological research and includes a wide range of phenomena such as stress by static or dynamic work, environmental stress such as that caused by noise or heat, monotony, vigilance, etc. Low restrictiveness means that the individual can potentially control the occurrence, frequency, intensity, and quality of stress factors. Stress effects may, for example, be reduced by introducing work breaks, change of place, or variations in the pace, difficulty, and content of the work.

It is legitimate to make a global statement of relatively high- or low-occupational restrictiveness only when all the dimensions are equal in their degree of restrictiveness. This is often true in industrial work, and in this case, such a global restrictiveness may be roughly estimated on the basis of the degree of mechanization/automatization and the functional determination of activities in the context of the enterprise as a whole.

Yet hidden behind an "average" restrictiveness, there may be a combination of existing and missing spaces for action in different situations of the routine workday or workweek. Furthermore, there are in fact workplaces with high restrictiveness in one of the dimensions mentioned and simultaneously low restrictiveness in another. This is not only true for industrial occupations, but for many other occupations as well.

In the long-term course of occupational careers there will also be a variety of changes, which may be gradual or abrupt, anticipated or unexpected. In many of these cases, however, no global increase or decrease of restrictiveness will occur, rather there will be a shift in the complex pattern of different dimensions of restrictiveness (cf. Kohn & Schooler, 1983, e.g., p. 126 and 163, where it is shown how strongly the construct "occupational self-direction" depends on the patterns of different occupational characteristics "substantive complexity," "closeness of supervision," and "routinization").

Deterministic and Interactional Forms of Control Awareness

We have already argued that the static, trait psychological approaches of personality psychology do not adequately consider the patterns of pressures and opportunity for action that change from dimension to dimension and from situation to situation in the occupational domain. Of course, our critique of an overly simple dichotomous classification can be countered by pointing out that an interactional centered orientation can be derived from current scales, that is, that individuals can achieve middle scores on Rotter's scale or equally high internal and external scores on the Levenson subscales. However, this in no way weakens our criticism that all items of all scales known to us are formulated in such a way that they only allow *either* internal or external (or fatalistic) answers, they thereby imply a *monocausal determination*, which in reality need not exist. We are convinced that there are individuals who perceive their own behaviors

and actions and the consequences of their actions as the interplay of internal and external factors, the weighting of which can change from situation to situation. In connection with a scientific paradigm, we call this viewpoint "interactional".

The idea of a simultaneous interchange of internal and external control factors constitutes the starting point for our further considerations. Our initial interest was not in Rotter's (1966) social learning theory, whose theoretical fruitfulness for future locus of control research is not discussed here, but in the attempt to bridge the gap between psychological and sociological models of work and personality (cf. Lempert, Hoff, & Lappe, 1979). In this endeavor we became aware of discussions regarding paradigms in psychology.

There are striking parallels between positions represented in these discussions (cf. Ekehammar, 1974; Endler & Magnusson, 1976; Reese & Overton, 1970; Riegel, 1975) and the internal-external distinction in locus of control research. Despite the differences between their theoretical positions, none of the scientists propose either a totally "nativistic," "personalistic," "organismic" or, at the other end of the spectrum, a totally "milieu-deterministic," "situational," or "mechanistic" view. Indeed, there seems to be agreement that concerning the rejection of such extreme deterministic paradigms as well as concerning the smallest "interactional" denominator: Individuals are understood as being both the subjects and objects of their environment. In the assessment of interindividual differences in locus of control, the items are conceptualized in a manner that has already been rejected by the scientists mentioned earlier, that is, the question explored is whether nature or nurture, person or situation, internal or external factors determine human behavior and its consequences. This should not be construed to mean that there are not individuals who firmly believe in internal or external determinants of their behavior. But why shouldn't there also be a type of locus of control in everyday life, an "awareness" of being both subject and object of one's world? This would include concepts of interaction between internal and external factors, a perspective that is considered self-evident if not trivial, in science. Hence, we conclude that in addition to individuals who have a rigid deterministic belief in internal factors (or in external factors), there exist individuals who perceive their actions as the interaction of internal and external factors.

This basic suggestion from which all our further considerations stem (cf. Hoff, 1981, 1982, for a more detailed description) was also stated independently by McKinney (1980 and especially 1981). However, we arrived at quite different conclusions than McKinney:

1. This applies to ideas regarding the usual contrast between internal versus external within an interactional model.
2. It is not necessary to introduce a new construct (such as McKinney's "engagement style") and delineate this from locus of control. In this regard we

view the analysis of the relation between various control constructs as basically a theoretical and not an empirical problem.

3. Fatalistic beliefs warrant specific consideration.
4. It is necessary to consider the far-reaching consequences of an interactional form of control awareness for empirical research.

Figure 13.1 displays the various forms of control awareness we have developed in connection with scientific paradigms. We attempt to explain this overview with a discussion of the points just mentioned.

As to the *first point*, in the definition of the *interactional* concept contained in Fig. 13.1 (Column I) we hold that a reciprocal interaction between individual

	I. Interactional	II. Deterministic		III. Fatalistic
		Internal	External	
a)	External and internal factors	Internal personality factors	External environmental factors	Unexplainable internal or external or other factors
b)	interact	determine exclusively or strongly	determine exclusively or strongly	determine exclusively
c)	in action	behavior	behavior	behavior
d)	with each other	and indirectly (through behavior) external factors	and indirectly (through behavior) internal factors	independently from each other
e)	E ↔ A ↔ I	E ← B ← I	E → B → I	? → B ← ?

FIG.13.1 Overview of the forms of control awareness (Hoff, 1982). Note. The lines have the following meaning: (a) locus of control, (b) type of relation to (c) behavior or action, and (d) to other factors; (e) graphic representation of the type of relation that is expressed in control awareness between environment (E), individual (I), and behavior (B) or action (A).

and environment is only conceivable in goal-directed, intentional action. (This perspective is as equally viable for everyday life as for the scientific domain. In this respect our position is clearly different from that of an analysis of variance concept of interaction as a determinant of behavior.) An example from one of our own interviews shows how common item formulations completely fail to meet this idea of interaction. A number of individuals in our study stated they were able to mobilize their abilities and efforts exactly because of strong external constraints and that they can "make the best out of a difficult situation"; this reflects the dynamic interchange of internal and external factors in action. On the one hand, these individuals describe an adaptation to environmental conditions that greatly influence them and, on the other hand, they describe their active response to these conditions, which can modify their environment.

Although a definition of the interactional concept presupposes a differentiation between internal and external factors, that is, the individual and the environment, the focus is on the process of control—*influencing and being influenced*—rather than the locus of control. From this point of view, the difference between internal and external control beliefs, as well as between personalistic and situational paradigms in science, no longer appear so contradictory. Both of these concepts or models, in contrast to an interactional approach, are based on a common underlying idea of "homo clausus" (Elias, 1976). Only when "inner" and "outer" can be strictly separated from each other, is it possible to imagine a one-sided determination of the environment by the individual, or of the individual by the environment. This common feature of beliefs, usually considered as different from each other, is represented in our schema as *deterministic* (see Fig. 13.1, Column II).

One consequence for the description of interindividual differences resulting from this view is that there are individuals who are consistently deterministic in their beliefs, although the direction of determination (or locus of control) systematically varies. Certain individuals in our study would be characterized as having external beliefs in regard to work and internal in regard to leisure time; over all types of situations, their beliefs were strictly deterministic. We term this type of control awareness as *deterministic-additive*.

As to the *second point*, when we speak of control awareness instead of locus of control, we do this for two reasons. First, with an interactional concept, the importance of a one-sided source of influence (external or internal) diminishes. Second, as we have already stated, the important feature of the usual distinction between internal and external (or fatalistic) control concepts is the common deterministic quality of control and not its "locus." In our opinion, these two aspects are relevant not only for the dichotomous concept of internal versus external (in the sense of Rotter, 1966) but for all similarly contrasting concepts, for example "origin" versus "pawn" (DeCharms, 1968) or "agent" versus "patient" (McKinney, 1980). The same deterministic idea—which can logically be applied to another concept—is common to all such contrasting pairs, regardless of other

differences (to which we shall later return). If the "quality" of control becomes more important than the "locus" of control, this allows new possible classifications. However, this does not necessarily imply that a "new" construct or a "new" dimension has been discovered, which is theoretically independent from concepts already known. Instead, the usual classifications can be integrated into the concepts suggested here.

When "new" concepts are introduced or the attempt is made to clearly delineate concepts such as those of Rotter (1966), DeCharms (1968), Bandura (1977), or Seligman (1975) from each other, the following distinction becomes important: Either one focuses on the causal link between determinants of behavior and behavior itself (cf. Fig. 13.1, Line a, b, and c), or the contingent relationship between behavior and behavioral outcomes (Line c and d). Often, as in locus of control research, no clear distinction is made between these different aspects. As necessary as such an analytical distinction may be (especially for the identification of individual attribution) it in no way implies that we are dealing with two aspects that are completely independent on a theoretical level and whose confounding is simply a question of empirical studies. In our opinion such an assumption is misleading. We find that McKinney has also made this mistake by simply relating his construct ("agent" vs. "patient") to the relationship between (external and/or internal) causes and behavior. He contrasts this to Rotter's locus of control concept based on the fact that Rotter doesn't differentiate between this relationship (of causality) from that between behavior and behavioral outcome (of contingency). Without elaborating on the different theoretical meanings the concept of "behavior" can have in psychology, we feel that this type of distinction between constructs completely misses the point in terms of the everyday understanding of "action" (which in this case more accurately represents the underlying idea of control concepts). More than "behavior" the concept of "action" (cf. Figure 13.1, Line c) focuses on the connection between cause (intention) and effect (goal). As a rule (to which there are naturally empirical exceptions), action embodies a single conceptual connection from the causal source or actor through the process of action/behavior to the result of action/behavior. For our presentation of the concept of control awareness (Fig. 13.1, Column I and II, cf. Line e), the following holds true for all orientations except the fatalistic orientation (Column III): If persons can generally perceive themselves as subjects of their environment, this only has meaning when one assumes that an individual's influence on his or her behavior is concomitant with an influence on his or her environment. If persons generally evaluate themselves as objects of their environment, this only has meaning when one assumes that the influence of the environmental factors on behavior is concomitant with an influence on the individual's person.

Finally, we would like to comment on one last misleading distinction. The question of what constitutes independent constructs or dimensions is often interpreted as an exclusively empirical problem; however, we consider it a theoretical

problem as well. Dimensions of causal attribution such as locus, on the one hand, and stability or situational specificity, on the other hand, are considered two distinctly independent dimensions (e.g., Abramson, Seligman & Teasdale, 1978). For interactional concepts at least this conception appears untenable. In this case "locus" is not simply held to be an influencing factor (as in deterministic conceptions) but it is itself influenced. The idea of influenceability, however, corresponds logically with the idea of its temporal variability and dynamic force. The theoretical implications of this extended concept of control appear especially important to us (cf. Hoff, 1982, for a more detailed discussion). It follows that the stronger the conviction of an interactional concept of control is, the more likely an individual will maintain that it varies from situation to situation whether external or internal factors dominate. In contrast, the more firmly individuals hold deterministic beliefs, the more they will be convinced of the situational consistency of behavior and of the stability or noninfluenceability of certain external or, respectively, certain internal factors.

As to the *third point*, to remain within the scope of this chapter we are only able to deal with the fatalistic control concept in a attenuated manner (Fig. 13.1, Column III). The idea of an analogy between scientific paradigms and interindividually different concepts in everyday life only appears to be inappropriate initially. The fatalistic concept can be compared with a paradigm, not a scientific one, however, but a pre or antescientific paradigm. Here we are dealing with the flip side of every scientific and systematic conception of man, namely the belief in a basically uncategorizable and unexplainable inner and outer world. In the literature, however, the fatalistic dimension is conceptually unclear because, on the one hand, it is considered an independent dimension separate from the external dimension and, on the other hand, this dimension is referred to as "fatalistic-external" (e.g., Levenson, 1974). The "locus" must not necessarily have anything to do with the quality of control. In contrast to the deterministic-external control concept it is not important whether the source of influence is localized within or outside the person (Fig. 13.1, Column III, Line a). More importantly these sources of influence are conceived of as a one-sided determination, as not influenceable and above all as unexplainable, incalculable, and unpredictable. In our case studies, for example, we had a young skilled worker who frequently reported inexplicable moods as internal causes of his behavior (analogous to incalculable and inexplicable external factors such as the weather). In the fatalistic concept, the relationship between beliefs about causality (i.e., the connection between cause and behavior) and those about contingency (i.e., the connection between behavior and outcome) is possibly not as strong as in other control concepts.

As to the *fourth point*, it may be that the far-reaching implications that our control concept has for the evaluation of empirical studies have not been spelled out explicitly enough. If the theoretical assumption of independent control constructs or control dimensions is questionable, then the reasoning behind citing

empirical studies based on this assumption as proof of its validity is circular. More important, however, is the fact that the existence of an interactional control awareness can hardly be contested by referring to present empirical studies. Probing exclusively for a one-sided external or internal determination precludes the question of a reciprocal interaction of both sources of influence. Individuals with (extremely) deterministic concepts can probably be identified with the well-known scales. However, whether a middle score on the Rotter scale or equally high external and high internal scores on other scales (e.g., Levenson, 1974) allows the conclusion of an interactional control awareness appears questionable. In these cases such a score allows nothing to be said about the quality of control; it remains open whether deterministically additive conceptions (that may, in certain circumstances, changing in "locus" according to the specific domain) are measured, or whether an awareness that interprets action as an interaction between person and environment in every specific situation or domain is assessed.

Because we are quite skeptical about the diagnostic value of known instruments, it appeared reasonable to us not to rush into the premature development of new instruments in our own studies only for the ease and economy of research purposes. Rather, we chose to intensively examine case studies focusing on the validation of control awareness.

In these studies we try to identify and describe the forms of control awareness, that is, we look for prototypical differences especially between deterministic, deterministically additive, and interactional forms of control awareness. Furthermore we try to describe specific psychic functions (coping or defense) of these forms in working environments and occupational careers with different patterns of restrictiveness. Descriptions of the first results of these studies with young skilled workers from Berlin as well as the complex methods of data collection and evaluation are available elsewhere (cf. Hoff & Hohner, 1982; Hoff, Lappe, & Lempert, 1983; Hohner, 1985).

THE DEVELOPMENTAL COURSE OF CONTROL AWARENESS, OCCUPATIONAL RESTRICTIVENESS, AND RETIREMENT

Using the forms of control awareness discussed previously, developmental paths can be presented in more differentiated manner than the typical course of development hypothesized for locus of control (i.e., shift from a more internal to a more external orientation, or vice versa). Especially when one conceptualizes certain situations or spheres of life as being characterized by different forms of control awareness (e.g., work: external; leisure time: internal; negative situations: external; positive situations: internal), one can imagine that there might be individuals who are characterized less by a specific "locus" of control than by the determinism of their opinions. The development of the interactional form, which

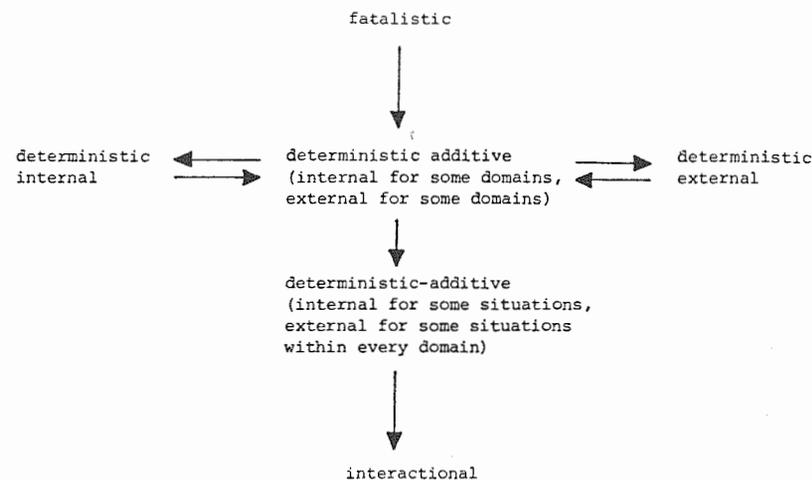


FIG. 13.2 Possible paths of development of control awareness.

is of central interest here, is only conceivable when such a deterministic-additive form and its increasing (intersituational and intrasituational) differentiation are conceptualized as mentioned earlier. These transitions and paths represent the most plausible theoretical ones (see Fig. 13.2).

The (implicit) lines of development between more internal and more external beliefs that have been empirically studied so far are illustrated in Fig. 13.2 by horizontal connections. Development is understood here as the increase/decrease of internal or external orientations or the transition from a basically external to a basically internal view, and vice versa. These paths of development are only imaginable if one assume a deterministic-additive transitional form, that is, an internal belief with regard to some domains (e.g., leisure) and at the same time an external belief with regard to other domains (e.g., work). In these paths the locus changes but the quality of control remains strictly deterministic. With regard to qualitative changes in the area of control we consider the vertical direction from deterministic beliefs to the interactional form of control awareness more relevant. Again development from an internal or external to an interactional form is only imaginable, if one assumes deterministic-additive transitional forms—from a domain-specific to a more situational differentiated view (within every domain of life) and finally to an intrasituational differentiation of simultaneous internal and external factors. (The fatalistic form of belief has only been included for purposes of completeness. In the practical occupational life of adults, this seems conceivable only in a very limited number of cases and/or in a situationally specific form.)

Exhaustive discussion of the reversibility or irreversibility of developmental processes are not possible in this context. However, we consider "backward" development from an interactional to a deterministic and then to a fatalistic

control awareness less probable than the development from an internal (through a deterministic-additive) to an external control awareness (cf. the implied direction of developmental paths in Fig. 13.2).

Our overview can also be interpreted in connection with the development of objective occupational restrictiveness. We assume that the vertical lines in our scheme (descending from top to bottom) give an indication of occupational development of an increase toward more opportunities for self-direction and a decrease in objective restrictiveness. This does not mean, of course, that every working person has to pass through the total sequence and all the transitions during his or her occupational career. It is indeed possible that individuals enter their work life with an internal or interactional form of control awareness already developed during the period of preoccupational socialization. We consider the increase of occupational self-direction, however, to be a potential cause for (and afterwards increasingly also a consequence of) changes in the direction of internal beliefs and for further changes in the direction of an interactional control awareness.

Here we would like to call attention to our earlier comments regarding the dimensional and situational variety of simultaneously restrictive and nonrestrictive working conditions in many professions. In addition to the long-term decrease in global restrictiveness of the environment, jobs that remain the same over time might possibly be favorable for personality development provided they can be characterized by the simultaneous presence of several differentially restrictive working conditions. To express the matter more pointedly, we view the experience of contrasts, as the motor of psychic development (toward flexible interactional forms of control awareness), whether this be the contrast between aspects of situations of the structurally unchanging daily work routine, or between different phases in a very eventful occupational career. (Nonetheless these contrasts should probably not be too great in order to be manageable and constructively mastered.)

In this regard, we would like to emphasize that not only work itself but also leisure time and, above all, the relationship between these two main spheres of life plays an important part in the development of control awareness in adults. Our case studies reveal that the different forms of control awareness are most closely connected with the subjective theories, which individuals have themselves developed regarding the relation between work and leisure time in their lives (Hoff, 1984). Persons who strictly separate both these areas and in a long-term perspective conceptualize the course of their *occupational* life independently from their *private* life have a correspondingly dichotomous (i.e., deterministic-additive) view of control. Work is thought of as exclusively determined by external factors and viewed solely as duty; leisure is seen as exclusively determined by internal factors and regarded as the domain of total personal freedom. The subjective theory of "neutrality" or "segmentation" of work and leisure time can also be interpreted (in the sense of the scientific thesis of compensation) as a compensatory strategy of coping or defense: The more work is restrictive and job experiences are negative, the more feelings of freedom in leisure time have

compensatory function and the more a subjective segmentation will be necessary. Those individuals, however, who (in accordance with the scientific thesis of "generalization" as well as "compensation") emphasize the interaction between their experience and behavior in both these main domains of life, and who also relate events from their occupational careers and private life course to each other, correspondingly have an interactional control awareness. These persons not only perceive the restrictive aspects of their work but also the opportunities for self-direction and they make use of these, particularly in the face of external forces. In their leisure time they note not only opportunities for action but also behavioral restrictions, which they attempt to overcome.

The ideas discussed until now allow certain conclusions and hypotheses about certain life situations of specific groups of adults to be made. In keeping with the main theme of this book, we address a major life-event important in later adulthood, namely the transition from work to retirement. It could be argued that the following suggestions are too speculative to be useful in guiding research on the development of control awareness. In support of our positions, we can compare our suggestions with the traditional hypotheses of locus of control theorists and refer to our critique of their inadequacies. We aim to illustrate the point that there exist more potential and theoretically necessary transitions than only those from internal to external beliefs (or vice versa) or from less to more restrictive spheres of life (or vice versa). With regard to retirement, the following questions may be asked: Which occupational careers, which (earlier) evaluations of leisure time, and which forms of control awareness have which significance for individuals during retirement? Our chapter concludes with the formulations of some rather preliminary answers to this question in the form of statements.

1. If everyday life after retirement is objectively different from the preceding phase of life (i.e., from the previous total constellation of occupation and leisure time) in terms of restrictiveness, self-direction, or variety of externally structured as well as internally structurable situations and if this contrast is also subjectively experienced as such, personality development at an advanced age can still be elicited (cf. Fig. 13.2, see also Baker, 1976; O'Brien, 1981).

2. Low objective restrictiveness or a high degree of self-direction during the previous occupational career facilitates an independent active organization of everyday life after retirement and thus, as we suppose, the possibility of better coping with typical problems of old age. This thesis seems to be supported by the only German longitudinal study of work, retirement, and control known to us, which was conducted by Abraham and Hoefelmayr-Fischer (1982). In this study individuals with markedly greater opportunities for self-direction not only had from the very beginning more detailed plans for the time after retirement, but they also put these plans into action (see also Brooks, 1980).

3. Moreover, the experience of contrasts during the previous occupational career (but also those between occupational and private life) is especially important. If individuals already had to cope with discrepancies or major changes

between restrictive and nonrestrictive working conditions or between different phases of their occupational career, then the transition to retirement will not be seen as presenting a problem in a negative sense for them but instead as providing a positive challenge.

4. If forms of control awareness have the function not only of retrospectively explaining but also of prospectively guiding actions, a control awareness which the person's own strengths and potential as well as "external" factors and restrictions (or "internal" uncontrollable health-related difficulties) are seen as basically interactive is generally appropriate to reality. An interactional control awareness thus seems an important prerequisite for effective coping with life in old age. Appropriateness to reality can at least then be assumed if the environments of aged individuals not only impose behavioral pressures or lack of structure, but if they, also as in the normal case, imply restrictions and, simultaneously, possibilities for action (see also Steitz, 1979; Wolk, 1976).

5. If we assume this to be the normal case, there is a good possibility that not only "interactionists" but also individuals with deterministic beliefs respond appropriately to reality. This seems especially valid for those individuals who have, for example, developed separate deterministic-additive, external, and internal beliefs for different types of situations. It is not possible here to discuss the perhaps useful psychological function of discrepancies between control beliefs and control perceptions or actions. Extreme cases are conceivable, however, in which locus is no longer seen as variable. In these cases very stable beliefs can no longer be interpreted as coping strategies in the face of long-term contradictory experience with the environment. In such cases we find older individuals who continue to hold on to extremely internal beliefs despite objectively restrictive external pressures, or persons with extremely external beliefs who consistently and systematically underestimate objectively given opportunities for autonomous action.

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