

## **Knowledge Work – A Contribution to the Decline or Resurgence of (Craft) Unionism?**

*Presenting author: Susanne Pernicka  
Additional author: Stefan Lücking*

*Organisation/affiliation & address details of presenting author:*  
University of Vienna  
Institute of Industrial Sociology  
Brünnerstr. 72  
A-1210 Vienna  
AUSTRIA  
[susanne.pernicka@univie.ac.at](mailto:susanne.pernicka@univie.ac.at)

*Organisation/affiliation & address details of additional author:*  
Universität Erlangen-Nürnberg  
Institut für Soziologie  
Bismarckstr. 8  
91054 Erlangen  
GERMANY  
[stefan.luecking@soziol.phil.uni-erlangen.de](mailto:stefan.luecking@soziol.phil.uni-erlangen.de)

### **Abstract**

Knowledge workers are often expected to prefer an individual rather than a collective articulation and enhancement of their interests. In the literature this phenomenon is primarily explained by individualistic orientations and power sources derived from the possession of scarce knowledge. New forms of market-oriented corporate management are assumed to contribute to workers' individualistic perceptions and put the necessity and legitimacy of collective action into question. We advocate a more sophisticated perspective on the dominant logics of control of knowledge intensive work. Based on assumptions of neo-weberian theory and the sociology of professions we propose a conceptual framework of three ideal typical logics of control (professionalism, market, bureaucracy) and their impact on the ability and willingness to organize collectively. The plausibility of the model is tested by empirically investigating university and non-university research in Austria. At the university, for instance, the hierarchical logic that prevails in the internal labour market segment of fixed-term employees mitigates the professional logic of control. Industrial rather than professional solidarity is expected to be the adequate response and hence, finds empirical evidence.

### **Key Words**

Knowledge Work, Logics of Control, Profession, Market, Hierarchy, Social Closure, Trade Unions

## INTRODUCTION AND THE PROBLEM IN QUESTION

Over the last decades, the system of industrial relations has been challenged and even transformed by changes towards a service and knowledge economy and hence, by a rising number of flexible, self-employed or non-standard employees (Kallebeerg 2008). Although knowledge workers will hardly become the most prevalent employment group even in knowledge economies (Warhurst & Thompson 2006), they are assumed to represent a prototype of a more general trend within the labour force that is in a way detrimental to an organized (i.e. collective) approach to employment relations. Knowledge workers in particular face new forms of work arrangements that foster the diffusion of individualistic orientations at the expense of traditional forms of union solidarity (Valkenburg 1996).

Against this background and based on the results of a recently concluded research project at the University of Vienna, our contribution aims to reveal the ability and willingness of knowledge workers to collectively organize in two fields, namely university and non-university research. Knowledge work is conceived to contain intellectual and analytically demanding tasks that require an academic degree or at least extensive theoretical studies, creativity and the ability to adapt to changing environments (Alvesson 2004).

Knowledge workers' asserted reluctance to organize collectively is often traced back to both, individualistic orientations and decisions based on rational choice. The latter refers to an argument proposed by the rational choice model of collective action (Olson 1965; Crouch 1982, 67ff.): The propensity to join a collective association is supposed to vary with the usefulness of the association to workers. Hence, the model predicts blue-collar workers to have a high propensity to organize collectively while there is less incentive for professionals to make a similar choice. This is because the latter are regarded as powerful enough due to the scarcity of their skills and to achieve their goals primarily through individual means.

We partly take issue with this view and advocate a more sophisticated approach that differentiates between three logics of control over knowledge intensive work. Depending on the prevailing logic (professionalism, market and bureaucracy) and on their individual position within particular fields of knowledge intensive work, we expect of highly skilled people that their propensity to collectively organize differ. Based on assumptions of neo-weberian theory (Weber 1980, Collins 2004, Parkins 2004a and 2004b) and professional sociology (Beck/Brater 1978; Abbott 1998; Freidson 2001) we propose a conceptual framework that links individual orientations and behaviour to the dominant power-relationships in knowledge intensive fields.

Hence, a better understanding of the specific attitudes of highly skilled workers regarding collective action can be achieved by differentiating between 'professional' and 'knowledge work' – two terms that in most existing literature are used interchangeably. While professionals have the power to organize and control their own work (Freidson 2001), knowledge workers are assumed to have only temporary if any control over the content of their work. While both, professionals and knowledge workers, are assumed to draw on a body of theoretical knowledge, only knowledge work is predominately directed to generate new products and processes. These characteristics in turn can be linked with the prevailing logics of control that provide rather different potentials for social closures (Weber 1980), namely permanent market monopoly (occupational control) in the first case and – if any – only temporary (structural) power or market closure in the second case.

This paper is structured as follows: first of all, we suggest a concept of knowledge work suitable for our research purpose and delineate it from other forms of highly skilled work and their predominant logics of control, respectively (1). Secondly, we develop a concept of three ideal typical logics of control (1.1) and link them to the propensity of highly skilled workers to

collectively organize (1.2). We continue by describing the research methods employed to investigate two fields of knowledge production – university and non-university research – that have been chosen to test the plausibility of our typology (2). Then, we present the empirical results and discuss them according to our model (3). Finally, we draw some conclusions (4).

## 1. CONCEPTUAL DEFINITION OF KNOWLEDGE WORK

More than fifty years ago Peter F. Drucker (1959, 69ff.) introduced the category 'knowledge work' and described the knowledge worker as an individual who works primarily with information or develops and uses knowledge in the workplace. For Drucker the knowledge worker is the 'typical worker of the advanced economy' (1969, 251) and accounts for 'a third or more' (1993, 57) of the total workforce. However, the suggested characteristics of knowledge work do not allow to drawing a clear distinction between, for instance, routine service workers in a call centre and software developers. While the former are primarily engaged in processing existing information, the latter are expected to create new knowledge. Thus, there are many types of knowledge with differing workplace usage and purpose, as Warhurst and Thompson (2006, 787) point out, but the central characteristic of knowledge work is that it draws on a body of theoretical (specialized or abstract) knowledge that is used to create innovative products and processes. Although knowledge work does also include routines and a deep knowledge of existing products and processes – that might even enhance creativity – its primary orientation is towards innovation. In line with this assumptions we draw on a definition of *knowledge work as being primarily and explicitly oriented towards the production of new knowledge*, irrespective of whether an innovation is actually achieved or not. The term 'new' indicates that the corresponding knowledge did either not exist at all beforehand or was adapted to a problem in a new way.

Although there is a wide consensus on the characteristics knowledge workers should exhibit, such as a high level of creativity, intellectual skills and the ability and willingness to learn (Frenkel et al. 1995, Alvesson 2004, Heidenreich 2004), there exists no such clarity concerning the relationship between knowledge work and professions. While some authors use the terms synonymously (Warhurst & Thompson 2006), others indicate the distinctiveness of knowledge work. Willke (1998, 161), for instance, argues that knowledge work does primarily involve unknown elements and innovative tasks that can barely be standardized. This is in line with what Fincham (2006, 27) predicts for knowledge work: Professionalism, based on accreditation and association, seems an unlikely route to recognition of skills that might appear and disappear in the space of a few years.

Hence, knowledge in the production process can take two different forms of appearance: tacit knowing (Polanyi 1966) and explicit knowledge. While the former can hardly be transferred to another individual by means of writing it down or verbalizing it, the latter can be codified. Hence, only explicable knowledge – for instance a book – can be directly transferred and reproduced. As regards the production of new knowledge the above characteristics influence whether or not and if yes, in what way third parties can be excluded from their usage. Historically, there have been evolved two different modes of gaining a monopoly of knowledge. Apart from intellectual property rights that provide a monopoly over the *content* of codified knowledge, there exists a range of institutions apt to control work *practices*. The latter in particular are of central importance when it comes to distinguishing between professional and knowledge work, their predominant logics of control and hence, the ability and willingness of highly skilled workers to organize.

## 1.1 Different Logics of Control of Knowledge

Institutions that provide control of knowledge practices are often the result of social closure (Weber 1980, 23; Parkin 2004a). According to Weber (ibid) the notion of social closure refers to the process by which social collectivities seek to maximize rewards by restricting access to rewards and opportunities to a limited circle of eligibles. With regard to work practices sociologists often differentiate between two forms of occupational closure. They refer either to practices based on *practical* knowledge and skills or on *formal* knowledge, which is composed of bodies of information and ideas organized by theories and abstract concepts (see the manual/mental contrast) (Abbot 1998, 8; Freidson 2001, 33). However, the existence of particular occupations and the distinction between manual and mental occupations cannot be traced back to technical or economic conditions. They are rather the result of social conflicts and power relations that in turn (re)produce social inequality (Beck & Brater 1978, 26). In this regard, Beck and Brater (ibid, 47) indicate that there exist barely any occupational combination of skills that comprise different levels of social hierarchy. The distribution of various combinations of skills and tasks, for instance, between a medical doctor (diagnosis and invasive treatment) and a nurse (non-invasive treatment, care) also imply a different social status and income. Since occupations are often enforced through legally protected monopolies or at least tolerated as a self-regulating institution, the state plays a key role when it comes to social closure (Parkin 2004a).

However, the position of professionals has been seriously weakened in advanced capitalist societies over the last decades. This is due to various reasons. Freidson (2001, 2), for instance, blames neo-liberal policies that in the name of competition and efficiency questions the legitimacy of professions. Other theorists observe fundamental changes in the organization of work from occupation- and function-oriented towards a more flexible and process-oriented coordination (Baethge & Baethge-Kinsky 1998). Thus, the professional logic has been increasingly replaced by the market logic. And last but not least, there exist some authors who claim that professional strategies fail to monopolize knowledge work due to its innovative characteristic (Willke 1998; Fincham 2006). Although the production of new knowledge may provide a temporary market monopoly or a monopoly over knowledge, respectively, it is a matter of time when new market entrants challenge this position. This is due to the characteristic of knowledge as a public good. Given the necessary intellectual preconditions third parties cannot be permanently excluded from its usage.

Against this background, we assume of a profession in order to come into being the following two preconditions: Firstly, there exists a common body of theoretical knowledge and concepts that can be obtained through special – often academic – training and that provide the basis for discretionary judgement and action. And secondly, to enforce of specialized knowledge and its owners to achieve professional status and hence a position of considerable privilege requires political and/or economic power (Freidson 2001). While the latter precondition might be fulfilled in the case of knowledge work due to its scarcity, knowledge work is claimed to lack the first precondition. Although theoretically based it is predominately directed to generating new products and processes according to market and/or technical demands. Thus, professional strategies aiming at complete social closure are expected to fail.

Based on these assumptions we propose to drawing a clear conceptual line between knowledge work and professional work and hence, their ideal typical logics of control (market and professional self-control) (cf. table 1).

Table 1: Two Ideal Types: Professional and Knowledge Work

	Professional Work	Knowledge Work
Knowledge Content	Body of theoretical knowledge according to 'accepted rules of the art' ( <i>lege artis</i> )	New knowledge products and processes that vary according to context and market.
Control of knowledge	Self-control and (in continental Europe) legal regulation implies 'complete social closure' 'Professional Logic'	Knowledge controlled by market and context implies only – if any – 'temporary social closure' 'Market Logic'
Entry	Standardized education and professional credentials (self controlled or legally regulated)	No formal entry barriers.
Examples (predominantly characterized by one ideal type)	Medical doctor, attorney at law, chemical scientist	Consultant and researcher, software programmer

A third organizing principle, hierarchy or *logic of bureaucracy* (Williamson 1975; Freidson 2001, 50f.), in which managers are in control is assumed to become less important in knowledge intensive fields. However, there are various managerial attempts to regain control over knowledge production by standardizing or fragmenting the innovation process (Lücking & Pernicka 2008). Moreover, although employees who perform knowledge intensive work regularly enjoy a high autonomy and self-control over their work content, they are nevertheless dependent on managerial control concerning their employment conditions (duration of their contract, career opportunities, etc.). Since bureaucracies have a de-monopolizing effect (Collins 2004, 77) the power of individuals derived from knowledge goes to zero. Thus, self-control is replaced by external control.

## 1.2 On the Ability and Willingness to Collectively Organize

Theoretical concepts and empirical findings on the ability and willingness of highly skilled people to collectively organize are ambivalent. Rational-choice models of collective action (Olson 1965; Crouch 1982) assume of highly skilled people to refrain from organizing due to their individual market power derived from possessing scarce knowledge. Other scientific observers point to new managerial strategies and changes in the organization of labour that have contributed to individualistic personality traits and orientations and hence to a reluctance to join trade unions (Abel & Pries 2007; Kotthoff & Wagner 2008).

Apart from these arguments there exist empirical findings on interest behaviour of highly skilled workers that indicate a 'renaissance of occupational associations' (Keller 2008). However, in Germany this development has to be seen in the context of a demise of industrial unionism. Powerful occupational groups leave their former general union to organize along lines of their specific trades – for instance the association of air-pilots 'Cockpit' that left *ver.di* in 1999. This in turn can be interpreted as a strategy of social closure, since homogeneity of association increases the chance of these groups to successfully advance their interests vis-à-vis employers and the state.

While both, rational choice theories and concepts on normative orientations and behaviour of workers focus on the individual, we propose a perspective that sheds light on the structural preconditions and power relations that facilitate or hamper collective action. In this regard we

draw on the neo-weberian theory of social closure (Weber 1980, 23ff., Mackert 2004, Parkin 2004a, 2004b) and claim that – ceteris paribus – depending on the preconditions for occupational closure and their individual position within the (labour) market the propensity of highly skilled workers to collectively organize differ. Hence, the prevailing logics of control are conceived as a result of both, the power sources of a particular group of highly skilled people as well as of the inherent characteristics and purposes of their work.

Based on these assumptions we summarize our central hypotheses as follows (cf. table 2).

Table 2: Determinants on the Propensity to Collectively Organize

Ideal-typical logic of control	Professionalism	Market Logic	Bureaucracy
Extent of social closure	Complete social closure	Only temporary market monopolies (innovations)	No social closure
Interest strategies	1) to maintain social closure via occupational entry barriers (collective strategy; craft solidarity)	1) to innovate or to gain expert status (individual strategies) 2) to collectively organize in groups or social networks on the basis of 'industrial solidarity' (collective strategy)	1) to advance in their job or position within the organization (individual strategy) 2) to leave the organization (exit; individual strategy) 3) to collectively organize on the basis of 'industrial solidarity' (collective strategy)
Individual power derived from knowledge	Dependent on the status within occupational group/ profession	Depending on the position within the (labour) market	None
Propensity to collectively organize	<i>High</i> (in professional associations and craft unions) <i>Low</i> (in industrial unions or cooperations between occupations/ professions)	<i>Low</i> (if individual power is large) <i>High</i> (if individual power is small)	<i>High</i> (in industrial unions or cooperations between occupations)

Since the structural preconditions described above are assumed to influence rather than to determine individual behaviour there exists a number of further explanations about why highly skilled workers collectively organize or refrain from contributing in collective action (see above). In an ideal situation, these factors can be controlled in order to reveal the effects of our explanatory variables, namely the prevailing logic of control of knowledge and individual power. However, the purpose of this article is to test the plausibility of our typology that is to find empirical evidences that do support or fail to support our hypotheses.

## 2. SELECTION OF CASES AND METHODOLOGY

The empirical part of our paper focuses on two fields of knowledge intensive work, namely university and non-university research in the natural and technical sciences as well as the

social sciences in Austria. This selection follows the principle of 'theoretical sampling' (Glaser & Strauss 1967) that is to choosing research cases that facilitates a deeper understanding of the social phenomena under consideration. In this regard, all three logics of control are represented in the fields selected. While professionalism prevails in university research, the non-university research sector is primarily governed by the market logic in Austria. However, due to the latest university reforms the logic of bureaucracy gained in importance, at least for the growing number of fixed-term employees who lack both a permanent employment contract and a career perspective within their university. The two scientific disciplines selected differ in terms of what kind of exit options researchers can draw on outside the university context. These options in turn might contribute to both the individual power and the preparedness of researchers to express their interests (voice) rather than to leave the organization (exit) (Hirschman 1970).

Based on the two empirical fields selected we tested the plausibility of our conceptual model by employing qualitative methods. We conducted eight focussed, semi-structured interviews (Witzel 2000) with university researchers and five interviews with works councillors at two Austrian universities as well as five researchers – among them two works councillors – at two non-university research organizations. At least part of their working time the works-councillors are also engaged in research. All interviews were transcribed and evaluated by utilizing content analysis (Mayring 2003, 56f.).

In the following sections the two empirical fields are described according to the social issues of interest (3.). In section 4 we continue with a discussion of our findings and confront them with our theoretical considerations. In section 5 we draw the conclusions.

### **3. EMPIRICAL RESULTS**

#### **3.1 University Research**

Since the early 1990s Austrian universities have faced two structural reforms of their organizations. In this regard Austria has followed a European trend that challenges the logic of academic self-control in favour of market and management forms of university governance (Seeböck 2002, 22). In granting the 21 Austrian universities full autonomy and releasing them from state bureaucratic structures the University Organization Act (UOG) 1993 and the new University Act (UG) 2002 aimed at enhancing efficiency by modernizing the university system. The most salient elements of the reform were autonomy in staffing issues, which replaced the central allocation of staff positions; financial autonomy combined with guaranteed funding and global budgets which replaced the governmental prescription of line item allocations and organisational freedom, which largely replaced external control (Ministry of Education, Science and Culture 2002). However, while the top university management (the rector and the rectorate) has gained considerable administrative powers, there have been almost none formal participation rights of junior academic staff and students in decision making on university matters left. The former system guaranteed that all three groups, full professors, junior faculty and students, were equally represented in the various decision-making boards at all levels of the university. Moreover, in transforming the universities into legal entities in public law (as opposed to the status of so-called 'subordinate organizations' under the previous system), universities were granted the right to collective bargaining and to establish works councils. The latter were set up at all universities in 2004 and largely replaced the former system of employee representation. On October 1st 2009 a new collective agreement negotiated between the union of public services and the National University Federation went into force. It comprises almost all university employees (except public servants).

In terms of staffing, a new body of law on the employment of university teachers enacted in 2001 provided the universities with authority in human resource management. However, this law stipulated for academic staff (pre-doctoral and post-doctoral) – except full professors – to be engaged on fixed-term posts only and resulted in a situation in which young researchers had and still have to leave their university regardless of their performance and without any career perspective except to successfully apply for full professorship. Although since 2004 university management is no longer bound by this law, many universities – among them are the two universities investigated – have continued to providing the majority of their newly engaged academic staff with fixed-term contracts. This personnel policy has resulted in a segmentation of the internal labour market. A shrinking number of permanent staff and a few newly engaged full professors and senior lecturers with open-ended contracts (group I, cf. table 4) work alongside with a growing group whose members rotate on a four to six year basis (since another reform of the University Act in 2009 consecutive contracts can take a maximum of 10 years) (group II). The latter are barely able to enter the segment of the former.

Moreover, young faculty members are still dependent on their academic supervisors when it comes to advance a university career in that they provide their scholars with social capital and academic credentials. Hence, the current staffing policy has contributed to an even greater dependence due to the fierce competition over a small number of permanent positions. Under these circumstances, an interviewed works councillor stated, that nobody can afford to spoil his or her career perspectives, PhD candidates in particular stay calm and accept being toiled. In this regard, the university rather resembles a combination of small ‘businesses’ (the academic departments and institutes) controlled by full professors than a homogeneous entity managed by administrative staff (Hefler 2008, 103f.). Thus, in terms of the logics of control it is still professionalism that prevails in the academic labour market. However, for group II external control by management has become more important. The logic of bureaucracy challenges professionalism since the administrative management decides about whether or not and if yes, how many permanent academic positions are established.

Table 4: Dual Segmentation of the Internal Labour Market at Austrian Universities

Career Perspective	Group I: members belong to the permanent academic staff of a university (civil servants, full professors with open-ended contracts)	Group II: members have no long-term perspective (holders of fixed-term contracts) except they successfully apply for a full-professorship
Prevailing Logics of Control	Professionalism	Bureaucracy (Management)
Interest strategies	1) to maintain disciplinary closure (collective strategy) 2) to achieve individual status and credentials within scientific disciplines to enhance one’s career opportunities (individual strategy)	1) to pursue a full-professorship while accepting precarious working conditions (individual strategy) 2) to leave the university (exit) (individual strategy) 3) to collectively organize beyond disciplinary border in order to enforce management decisions (collective strategy)
Propensity to	In professional/scientific	In professional/scientific



collectively organize	associations: high In encompassing associations: low	associations: high (increases the chance to obtain a full professorship) In encompassing associations: high
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Our interviews with eight members of academic staff revealed that the segmentation of labour and hence, the different logics of control do affect interest related orientations and behaviour. While professional self-control and disciplinary closure still prevail for the members of group I (the permanent employed) with regard to their field entry and career perspectives, the members of group II largely face precarious working conditions and have almost no career options within the university. The latter are primarily controlled by a bureaucratic management as concerns their future employment perspectives.

Two respondents, a natural and a social scientist with fixed-term contracts, favoured to leave the university after completing their doctoral studies. Both expressed optimism about finding an adequate position outside the university. Another respondent (social scientist) intended to continue his university career – under whatever conditions – and hoped to successfully apply for professorship at some time in the future. He is a member of scientific associations in his research fields but so far has refrained from joining a trade union or participating in collective action of any kind.

Apart from individual strategies we also found evidences of the predicted forms of collective strategies. Shortly after the collective agreement went into force in October 2009 a group of pre-doctoral-staff, lecturers and researchers who depended on third-party-funding were collectively organizing in a loose cooperation to protest against current working conditions. They expressed their concern that the newly concluded collective agreement – though providing for a number of tenure track and permanent senior lecturer positions – would not solve the problems induced by the former personnel strategies. Among other issues, they demand open-ended contracts and clear career perspectives for researchers and lecturers at the university (IG Externe LektorInnen und Freie WissenschaftlerInnen 2010). While trade unions and works councils were perceived as representatives of permanent academic staff, fixed-term employees tend to prefer self-organizing of their interests beyond disciplinary borders. Moreover, members of both groups, permanent and fixed-term employees, were found to join professional and scientific associations.

## 5.2 Non-university Research

In comparison to other countries non-university applied research in Austria is characterized by small units and a high degree of differentiation although in the last years signs of higher concentration in the form of mergers can be observed (Papouschek 2005, 8). Non-university research institutions differ considerably with regard to employee numbers. The largest, mainly situated in the domain of natural and technical sciences, e.g. the Academy of Sciences, Joanneum Research and the Austrian Institute of Technology, employ between 300 and 1,000 employees. In contrast, research institutions focused on humanities and cultural sciences have in average only nine employees (Kozeluh 2008, 9). Although public research funding increasingly obliges research institutions to cooperate in form of consortia, market logic prevails in the field of non-university research. The particular institutional and economic context and the interests of their employers predominate hypothetical professional orientations of the researchers involved (see below). However, in spite of this general tendency there are some (large) research institutions, mainly in the domain of natural and technical sciences, where market and academic logic coexist.

Non-university research facilities not only differ due to different scientific disciplines but also with regard to their financial resources and consequently their employment structures. Research institutions able to finance their basic resources by public funding or industrial partners (in particular in natural and technical sciences) offer more stable employment relations than small research institutions without basic funding where atypical employment relations prevail. This difference is the reason why the 2004 collective agreement for non-university research is restricted to large research institutions mainly in the domain of natural and technical sciences. In many cases, in particular in small institutes without basic funding, time spent on the application for tenders or the preparation and post-processing of research projects is unpaid. There are no financial resources for research management or advanced vocational training of employees. Important aspects of scientific research, such as the accumulation of existing knowledge or the development and discussion of theories, have to be neglected in institutions without basic funding because they normally are not covered by research contracts (Papouschek 2005, 10). These conditions have the effect that many research institutions have to focus on short-term research contracts that being not sustainable tend to erode the necessary knowledge base. Due to this – partly involuntary – focus on applied research employees in non-university research have to manage the conflict between the demands of their sponsors and clients on the one hand and the requirements of academic standards (dissertation, publications, conferences etc.) on the other hand. In most cases this conflict is 'solved' at the expense of the latter. Hence, the dominance of market logic in most non-university research institutes leads to a de-professionalization of researchers as their research activities are rather determined by client demands than by academic standards. In general, the labour market for non-university research can be divided into two clearly distinct segments, one dominated by market logic, the other oriented on professional and academic standards (cf. table 5).

Table 5: The two segments of the labour market in non-university research

Labour market segment (Group I dominates)	Group I: <i>Market oriented research institutions with low permeability to the academic system</i>	Group II: <i>Professionally oriented research institutions with high permeability to the academic system</i>
Prevailing logic of control	Market Logic	Professionalism
Interest strategies	<i>Individual, temporary closure (expertise)</i>  <i>Partially collective strategies of closure</i>	<i>Self-organisation and self-control within the scientific discipline (resulting in structural power and individual symbolic capital according to circumstances)</i>
Propensity to collectively organize	In professional/scientific associations: high (although individual strategies predominate) Propensity to collectively organize decreases with higher individual power	In professional/scientific associations: high In encompassing associations: low

While professional self-control of the research process (as it is realised in academic research through the application of methodological and theoretical standards) plays an important role in large professionally oriented research institutions (e.g. the Austrian Academy of Sciences),

they are less important in the majority of market-oriented research facilities. Due to the absence of a clearly distinct occupational profile for a 'non-university researcher' there are no formal entry barriers apart from academic qualification and no default career paths. The lack of formal criteria for market entry (such as professional certificates or academic degrees) increases competition both at personal and at institutional level.

The strategies employees choose to enforce their interests are very heterogeneous. Irrespective of the size of their research institutions many of our respondents refer to strategies of individual market closure such as the development of a special expertise. They define themselves as 'entrepreneurs' or 'self-employed experts' rather than as employees. In many cases they reject the working class culture associated with trade unions. In addition, the fact that salaries and fees are negotiated at individual level leads to the belief that collective forms of interest politics make no sense for scientists. According to all respondents, employees in non-university research institutions tend to organize in national or international professional organizations (e.g. the Austrian Society of Sociology) in order to accumulate the necessary social and cultural capital. Hence, a mixture of professional and market logics seems to prevail in the realm of non-university research. Membership in a trade union, however, is – at least at the moment – no option for the majority of our respondents, partly even due to the activities of employee representation themselves. Works Councils, for instance, exist only in a small number of large research institutions. Nonetheless, some recent union and non-union campaigns for researchers in social sciences show that individual strategies have their limits and that – at least in social sciences – there is a disposition to organize collectively and irrespective of differences in professional status.

A telling example of a failed attempt to collectively organize researchers dates back to the early 1970s when a couple of works councillors of university and non-university research institutions started to unionise. The main objectives of this unionisation attempt were to improve the conditions for the application of research grants and to regulate labour conditions via collective agreements at sectoral and enterprise level. In addition, unionisation was intended to restrict the widespread use of precarious employment contracts. The initiators approached the trade union of salaried employees GPA with these issues and aimed to establish a common platform within the union. Although the initiative attracted a high number of 3500 to 4000 members, it was met with considerable resistance within the union. According to a former member of the union, this was caused partly by the group's reluctance to declare its political affiliation, partly by its intent to include self-employed researchers who – at that time – were not accepted as union members. The following attempt of the group to join the union of arts, media and professions KMSfB was impeded by the GPA who referred the matter to arbitration. During the two years of arbitration hearings many researchers left the union, and when the arbitration court decided that the group was not allowed to switch union membership it suspended its activities. Since then unions are absent from the sector of non-university research. Only recently new efforts are made to close this gap.

An example for a common initiative of self-employed knowledge workers in university and non-university research is the Association of External Lecturers and Free Researchers (IG Externe LektorInnen und Freie WissenschaftlerInnen). Founded in the context of a protest movement at Austrian universities in 1996, the association enforces the interests of researchers in non-university institutions irrespective of professional status or scientific discipline.

## **6. DISCUSSION AND CONCLUSION**

The fields of university and non-university research chosen for our empirical research exemplify the three dominant logics of control in the realm of knowledge work. They allow to

test the validity of our typological model regarding the ability and willingness of knowledge workers to organize collectively. Table 6 summarizes the main results of this empirical test.

Table 6: Ability and willingness to collectively organize among knowledge workers in university and non-university research

	University research Group I – Insider	Non-university research	University research Group II – Outsider
Prevailing logic of control	Professionalism	Market logic	Bureaucracy (Management)
Degree of professional closure	Complete professional closure and self-control	Incomplete closure; quasi-professionalism	No closure except of qualification
Prevailing interest strategies	1) permanent professional closure via entry barriers, career paths and exclusion criteria (collective strategy)	1) temporary closure, in particular via individual expertise (individual strategy) 2) Collective initiatives beyond status and profession	1) creation of 'industrial solidarity' via professional associations and status-independent initiatives
Individual power derived from knowledge	Depending on the status within a scientific discipline	Depending on the position within the labour market	Depending on performance and 'favour'
Propensity to collectively organize	All respondents are members of professional associations, scientific organisations etc.	Individual interest strategies prevail; quasi-professionalism  Higher propensity to collectively organize if individual power is small	Membership in professional association to keep in contact with group I  Collectively organizing beyond disciplinary borders become more important when structural barriers are insuperable

Although the ability and willingness of highly skilled people to collectively organize depend on various structural and habitual factors, the dominant logics of control allow to identifying factors that favour or inhibit collective action. In contrast to the argument provided by rational-choice theories that scarce knowledge and qualifications enhance individual power and therefore reduce the willingness to collective action, the neo-weberian concept of social closure allows a more differentiated model.

Our empirical findings provide evidence for the thesis that individual resources of power as well as the disposition to collective action are influenced by the prevailing logic of control (profession, market, hierarchy) and the degree of social closure induced by these logics. In the sector of university research the logic of professionalism is still prevailing, implying complete social closure and self-control within a scientific discipline. Membership in a professional association is used as a means to reproduce social closure and the power to control the relevant knowledge base. However, an increasing part of university researchers and lecturers are excluded from the traditional career path leading to permanent employment within the university. For this group of fixed-term university employees the logic of

bureaucracy challenges professionalism since decisions about the extension of contracts and the number of permanent academic positions are increasingly assigned to administrative management. While the disposition to accept precarious employment conditions in order to gain access to permanent employment with the university still exist, interest strategies of group II increasingly focus on initiatives and organisations beyond disciplinary borders and professional status. In the context of current reductions of permanent contracts the belief that decisions about career perspectives and the access to permanent employment within the university are based on professional excellence and personal commitment loses its credibility. Consequently recent initiatives of precarious and fixed-term employed researchers and lecturers abandon the logic of professionalism and lead to encompassing organisations beyond professional status and disciplinary borders.

In non-university research, the closest sector to the ideal type of knowledge work, market logic prevails. Strategies of market closure are only temporary. They can be described as quasi-professionalism as they are not built upon a profession but upon individual or collective expertise. Traditional forms of employee representation such as trade unions or works councils are not completely rejected but seen as insufficient and incompetent to protect the interest of highly skilled knowledge workers. This perception, however, is reinforced by trade unions themselves. Historical examples show that efforts of researchers to unionise are met with considerable resistance. Nonetheless close cooperation with trade unions is most probable in areas of non-university research (mainly social sciences) where financial resources and institutional power are particularly weak.

The empirical findings underline the dynamic character of our model. Prevailing logics of control and their corresponding forms of social closure shape the interest strategies of knowledge workers as well as their disposition to collectively organize. On the other hand they are themselves results of strategies intended to gain power. The prevailing logic of bureaucracy, for instance, is the result of the specific conditions in the sector of precarious and fixed-term employment at universities. In order to overcome this logic, more than individual resources of power are needed. A solidarity beyond the limits of status and profession has to be established. The widespread thesis that knowledge workers share a general reluctance to organize collectively cannot be sustained. In fact, the propensity and willingness of highly skilled employees to collectively organize depends not only from the prevailing logics of control and social closure but also from the prospects of their reproduction or transformation.

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