Imaginary Contradictions of University Governance

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Abstract New modes of managerial governance have caused universities to function more like companies and produce non-intended effects as well as imaginary contradictions. In this article, four of these contradictions are discussed to provide answers to the following research questions: Do professors have a higher commitment to their organization or to their peers in the scientific community? Which factors strengthen the affective organizational commitment? Which work environment supports intrinsic motivation at universities? Can universities provide incentives that do not crowd out intrinsic motivation? A theoretical underpinning of hypotheses will be provided, and these hypotheses will be tested using two nationwide surveys of German professors. The empirical results demonstrate that commitment to professional peers increases affective organizational commitment. In the perception of German professors, there is no contradiction between profession and organization, but the newly implemented steering instruments increase organizational commitment. In addition, the results also provide evidence that autonomy, relatedness, and perceived competence increase intrinsic teaching motivation. These findings support the Self-Determination Theory. The results also provide some evidence of a crowding-out effect of the new steering instruments and that teaching awards do not crowd out intrinsic motivation.

1 Introduction

In the last decade, the higher education system in Europe has shifted to New Public Management (NPM) and established new modes of governance (de Boer et al. 2007). These modes of managerial governance have caused universities to function more like companies, producing non-intended effects and non-intended contradictions of governance. In this article, four of these contradictions, which can be described as imaginary contradictions and are closely related to each other, are discussed. These contradictions are imaginary because an inherent solution exists and only a first consideration characterizes them as contradictions. The following four contradictions are particularly relevant to higher education institutions in Germany and therefore discussed in this article:

Profession versus organization: Professors are professionals who work in a loosely coupled system, and their scientific communities provide relevant career resources (Hüther and Krücken 2011). However, due to NPM reforms, universities are shifting in the direction of "complete organizations" (Ahrne and Brunsson 2011). Consequently, universities establish more principal agent relationships, replacing the influence of professions. Nevertheless, professionals must be organized in

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organizations, and organizations must manage professionals. The relevant research questions are the following: do professors have a higher commitment to their organization or to their peers in the scientific community? Which factors strengthen affective organizational commitment?

Monitoring versus autonomy: Professors may perceive development toward NPM as a new form of monitoring and, most likely, as an alienating experience. New steering instruments are formal regulations that increase the distance between rectors and deans in the role of superiors and professors in the role of subordinates. However, it is difficult to monitor and manage scientific work according to formal rules. Professors need autonomy in their work (Frey, Homberg and Osterloh 2013; Osterloh and Frey 2013). How can monitoring and autonomy be balanced?

Intrinsic versus extrinsic motivation: For academic work, intrinsic motivation is absolutely necessary (Lam 2011). Intrinsic motivation occurs only in work environments with a high degree of self-determination (Ryan and Deci 2000b). Selective incentives – such as NPM instruments at universities (see paragraph 4) – crowd out intrinsic motivation (Frey and Osterloh 2002; Osterloh and Frey 2013; Wilkesmann and Schmid 2014). However, some selective incentives are necessary for managing an organization. The relevant questions in this field are the following: which work environment supports intrinsic motivation at universities? Can universities provide incentives that do not crowd out intrinsic motivation?

Transactional versus transformational governance: Selective incentives are an example of transactional governance, in which each behavior of a member is related to an organizational exchange. Transformational governance creates leeway for intellectual innovation and common visions. However, both transactional and transformational governance are necessary for a university (Wilkesmann 2013). How can these two types of governance function in concert?

In this paper, imaginary contradictions one and three will be proven using two surveys of German professors at research universities and professors at universities of applied sciences (empirical evidence for the other two contradictions can be found in Wilkesmann 2013).

2 Profession versus Organization

Professors are all members of a profession; as physicians, sociologists, engineers, chemists or business economists, they belong to their specialist profession (Starbuck 1992). The word ‘professionalism’ refers “[…] to the institutional circumstances in which the members of occupations rather than consumers or managers control work. […] While few, if any occupations can be said to *fully* control their own work, those that come close are called ‘professions’ in English” (Freidson 2001, p. 12). Professors feel more committed to their profession than to their organization. All feedback and all career-relevant evaluations (i.e., peer reviews of submitted articles or research proposals) are under the control of the profession and not the organization. The organization of universities before NPM did not enable domination over professors because universities did not monitor or support the careers of academic staff in the German higher education system (Hüther and Krücken 2014). This model is described, for example, in Mintzberg’s professional bureaucracy or in models that characterize universities as “specific organizations” (Musselin 2006). NPM changes the power relationship of the organization. Under NPM, the rectorate can sanction professors via its ability to distribute or refuse resources. When a professor establishes

a new research program or a new Master's program, he or she can be rewarded with additional research assistants. Performance-related budgets or Management by Objectives (MbO) are the new steering instruments that strengthen the hierarchy. Due to these new steering instruments, the power distance within the organization increases, shifting the university to a "complete organization" (Ahrne and Brunsson 2011). Ahrne and Brunsson (2011) define a complete organization as having the following five characteristics:

Membership: The organization university is defined by two different groups of members, academic staff and students. The former group is paid by the organization because they have an employment agreement. The latter group must pay the organization or are not paid by the organization. Their conditions of membership are comparable to those of a club (Wilkesmann et al. 2011).

Hierarchy: Formerly, the hierarchy was limited in a university, but NPM has strengthened the roles of rectorates, vice-chancellors, and deans. The new steering instruments (pay-for-performance, performance-related budgets and MbO) are all instruments that constitute a principal agent relationship. The superior (rectorate or dean) can use these instruments as selective incentives (Wilkesmann and Schmid 2012). In addition, in Germany, superiors gained more legal rights, thereby strengthening organizational roles.

Rules: Ahrne and Brunsson (2011) refer to rules as explicit decisions and not social norms that members follow implicitly. In Germany, professors at research universities must adhere to the following explicit rules: they must have a teaching load of nine hours/week and a budget that is related to explicit performance criteria, such as the amount of money collected for third-party-funded research projects (in €) and the number of published peer-reviewed articles.

Monitors: Compliance with the rules must be monitored. Teaching and research assessment measures include the amount of money collected from third parties, the number of publications, and the number of delivered classes and lectures.
Sanctions: The new steering instruments of NPM allow superiors to distribute resources as selective incentives. Granting or refusing monetary resources is a powerful sanction system. The rectorate can, for example, reward a professor with two more research associates to increase his/her research group or punish him/her by reducing the budget for the laboratory.

Thus, to varying extents, universities fulfill all five characteristics of a complete organization. These characteristics describe a formal organization. In summary, universities have shifted toward becoming complete organizations.

Does this shift imply that professors now have a higher commitment to the organization than to the profession? Meyer and Allen (1991) distinguish between three types of (organizational) commitment: affective, normative, and continuance commitment.

"Affective commitment refers to the employee's emotional attachment to, identification with, and involvement in the organization. Employees with a strong affective commitment continue employment with the organization because they *want* to do so. Continuance commitment refers to an awareness of the costs associated with leaving the organization. Employees whose primary link to the organization is based on continuance commitment remain because they *need* to do so. Finally, normative commitment reflects a feeling of obligation to continue employment. Employees with a high level of normative commitment feel that they *ought* to remain with the organization" (Meyer and Allen 1991, p. 67).

Due to space limitations, we will focus on affective commitment in this chapter and provide empirical evidence for the following two research questions. Which factors strengthen or weaken affective organizational commitment? Do professors have a higher commitment to their organization or to their peers in the scientific community? The new steering instruments (pay-for-performance, performance-related budgets and MbO) result in a utilitarian calculation, much like that described by Barnard's (1938) theory: a member of an organization contributes to the organizational goals as long as his or her perception of the given inducement is greater than the costs of his or her contribution. This calculus reduces the affective commitment (but increases the continuance commitment) because the only cause for a behavior that is in line with the organizational goals is a monetary or other selective incentive. The new steering instruments established a difference between the principals who distributed the incentives and the agents who received the incentives. If professors are treated like agents, they behave (in the long run) like agents, i.e., continuance commitment increases and affective commitment decreases. We can summarize these findings in hypothesis 1:

H1: The new steering instruments reduce the affective organizational commitment of professors.

Barnard (1938) emphasized that organizations could not be efficient when all members only used the above calculus. Members must also fulfill an extra behavioral role (Matiaske and Weller 2003) linked to an inherent motivation based on internalized social norms. Professionals were socialized within such vocational norms. As mentioned above, German universities have little control over the careers of professors because the profession manages the peer-review process, e.g., scholarly peers review short lists for appointments, project applications, or articles submitted to journals (Hüther and Krücken (2014). Furthermore, the social norms that govern the behavior of professors are professional norms that are internalized during a long education process as a student and during the assistantship, during which each researcher learns what constitutes good research and teaching and scientific behavior. Although professors receive their resources and salary from the organization university, their behavior is governed by professional norms. Due to this socialization process, professors are highly committed to their peers in the scientific community. Therefore, we predict that professors have a low affective commitment to the organization and a high commitment to scholarly peers. We summarize this in hypothesis 2:

H2: The higher the commitment to the peers in the scientific community, the lower the affective organizational commitment.

The introduction of new steering instruments based on NPM results in the transfer of the principles of organizing a private company to a public organization, particularly universities. The NPM conflicts with the academic habitus (Bourdieu 1988), which emphasizes the freedom and autonomy of intellectual work. Therefore, many, particular older, professors who were socialized into the classic homo academicus have an attitude against NPM. Attitudes are independent from behavior because attitudes have no expensive or painful consequences, in contrast to behavior. However, attitudes guide behavior and can particularly govern affective commitment. Affective commitment is reduced when the organization of the university is changing in a direction opposite that of the attitudes of professors.

H3: The higher the attitude against New Public Management, the lower the affective organizational commitment.

3 Monitoring versus Autonomy

The second imaginary contradiction is much like the first one. When an organization shifts from a loose-coupled professional bureaucracy (Mintzberg 1979) to a hierarchical organization, such as a principal agent relationship, professors feel like agents. Due to performance measurement, assessment, and evaluation, professors may perceive themselves as monitored agents. The new steering instruments establish a new relationship between the superiors that allocate resources in response to performance indicators and the subordinates that receive these resources. The former relationship was one of dependency with unbalanced power. If every behavior of a professor was measured by performance criteria, they could perceive their relationship with the organization (in the long run) as alienated because they would no longer have "*full* control (over) their own work" (Freidson 2001, p. 12). This is in line with the Principal-Agent Theory (Eisenhardt 1989), in which superiors monitor and motivate agents with the help of selective incentives.

Many studies have analyzed the unintended effects of selective incentives in academia (Osterloh and Frey 2013). Frey et al. (2013) argued that only income control and not output control was suitable in the academic world because output reassurance and knowledge of cause-effect relationships are both low. However, if the academic world was monitored only with the help of output control, such as rankings, evaluations, and performance-related budgets, academics would have an incentive for "gaming the system" (van Thiel and Leeuw 2002).

Nevertheless, management requires measurement. Even in universities in which professionals work, the organization needs numbers to help assess the achievement of their objectives. To overcome the contradiction between monitoring and autonomy, numbers (from performance measurement, evaluations and rankings) should only be used for a collective reflection upon goal attainment. If numbers are not used as an ineluctable rule for distributing resources, they will not develop an 'independent existence' that ultimately results in an institution that is perceived as an alienated object. In organizational terms, personal contact and leadership are more relevant than performance-related rules. While numbers are relevant for the legitimacy of decisions, they also serve as an origin of organizational reflection. The organization should enable an "Initiative-Freeing Radical Organizational Form" (Carney and Getz 2009; Getz 2009), but to control the achievement of the collective agreed objectives, numbers are used as a reflection of development. Even collective decision-making needs legitimacy and an origin for underpinning arguments. Therefore, numbers are helpful. Perhaps, the handling of numbers and not numbers per se is what is important for their perception by professors. The main questions in this field are the following. Do numbers serve as instruments for self-governance of the organization or as instruments for punishment by a superior? Do the members have the freedom to influence their own behavior and the organizational objectives or do they perceive the organization as a strange institution? The perception of organizational autonomy or monitoring and punishment are also influencing factors for the motivation of the members.

4 Intrinsic versus Extrinsic Motivation

Autonomy and monitoring are also closely related to work motivation. Intrinsic motivation is necessary for academic work. Their professional habitus motivates professors to pursue innovative, non-standardized work (see chapters two and three in Wilkesmann and Schmid 2014 for more details about the theoretical underpinning of the nexus between work environment and motivation). Traditionally, professors were considered highly intrinsically motivated because otherwise they would not endure the pressures and imponderables of accomplishing successful academic careers: "We may say that it is this intrinsic motivation which makes academics commit themselves to their scholarly activities not as a job but as a vocation, profession and hobby; which sustains them despite deteriorating working conditions and salaries" (Moses and Ramsden 1992, p. 105). As mentioned above, the main research question is the following: which work environment supports intrinsic motivation at universities? According to Self-Determination Theory (SDT), (Ryan and Deci 2000a, 2000b) intrinsically motivated action encompasses any action that is performed for pure enjoyment and satisfaction. By contrast, if an action is accomplished for separable outcomes, the motivation is extrinsic (Ryan and Deci 2000a, p. 56; Ryan and Deci 2006, p. 1562). Intrinsically motivated behavior satisfies three basic psychological needs: relatedness, competence, and autonomy (Reeve et al. 2004; Ryan and Deci 2000b). SDT establishes a theoretical framework that relates these primary human needs to intrinsic motivation. Research in the tradition of SDT emphasizes the autonomy-supportive work environment as a relevant prerequisite to foster intrinsic motivation (Ryan and Deci 2000a, p. 58; see Lam 2014).

SDT also encompasses amotivation, which is any behavior that is not valuable or any compulsory task performed by actors who feel absolutely incompetent (Wilkesmann and Schmid 2014). The SDT model differentiates types of extrinsic motivation according to different levels of internalization of social norms and values: external, introjected, identified and integrated. Ryan and Deci (2000a pp. 61-62) define external motivation as behavior that is rewarded and/or punished by others. The three other types that follow involve increasing levels of internalization of goals or external punishment. Introjected motivation "[…] describes a type of internal regulation that is still quite controlling because people perform such actions with the feeling of pressure in order to avoid guilt or anxiety, or to attain ego-enhancements or pride" (Ryan and Deci 2000a p. 62). Identified motivation reflects a higher level of internalization in which the individual identifies him or herself with the behavior by valuing it as personally important. The highest level of internalization is integrated motivation. "Integration occurs when identified regulations have been fully assimilated to the self" (Ryan and Deci 2000a p. 62). Action is in alignment with self-perception, and professors behave like professional academics.

Autonomy, as one of the three basic needs, is important for motivation because an internal locus of control is only possible when an individual inwardly grasps the meaning and worth of the regulation (Ryan and Deci 2000a). Otherwise, the regulation would be more external because a person would be following a rule only to avoid punishment.

H1: The more an academic work environment is perceived as autonomy supportive, the more intrinsic the motivation.

In addition, individuals internalize a social norm only when they feel related to the agent (a person, group or institution) of that norm (Ryan and Deci 2000b; Pelletier, Seguin-Lévesqui and Legault 2002). Social relatedness is understood in this context as a social mechanism of appreciation, which fosters self-esteem and encourages individual initiative.

H2: The higher the perception of relatedness to an agent, the higher the intrinsic motivation.

Competence, as the third basic need, is a prerequisite for the internalization process. Only when a person is not over challenged and is acknowledged as competent can he or she internalize external expectations. The ascription as competent is necessary because otherwise an individual could not interact effectively with the environment and would therefore feel helpless.

H3: The higher the perception of acknowledged competence, the higher the intrinsic motivation.

The new steering instruments, such as pay-for-performance, performance-related budgets or MbO, crowd out intrinsic motivation if professors perceive them as control mechanisms (Frey 1997). All performance-related incentives require measurement; otherwise, behavior and bonuses cannot be related. Measurement is a monitoring capacity that generates an external rule. This externality could be perceived as an alienating institution.

H4: Selective managerial incentives at universities crowd out intrinsic motivation.

Regarding our second research question in this field (Can universities provide incentives that do not crowed out intrinsic motivation?), we must ask the following: how can the incentive system be structured such that intrinsic motivation is not crowded out? According to Frey and Neckermann (2008), academic rewards will not crowd out intrinsic motivation. Therefore, our fifth hypothesis is the following:

H5: Academic rewards do not crowd out intrinsic motivation.

We will provide empirical evidence for these hypotheses in the case of academic teaching.

5 Transactional versus Transformational Governance

The fourth imaginary contradiction can be understood as an encompassing model of the first three contradictions. The terms ‘transactional’ and ‘transformational’ are based on the ‘full range leadership model’ (Bass and Avolio 1993). We will transform them to the governance discourse to describe different types of governance. NPM, which includes selective incentives, monitoring and sanction capacity, can be described as a form of transactional governance (Bass and Avolio 1993; Frost et al. 2010). Bass and Avolio (1993) defined transactional governance as follows: “There is a price on everything. Commitments are short-term. Self-interests are stressed” (Bass and Avolio 1993, p. 116). Conversely, transformational governance enables flexibility, autonomy for intellectual innovation and the ability to perceive employees as humans and individuals, take them seriously and be respectful. Bass and Avolio described transformational behavior as follows: “There is a rich set of norms which covers a wide range of behaviors; norms that will adapt to and change with external changes in the organizations’ environment. There is much talk at all levels in the

organization about purposes, visions, and meeting challenges" (Bass and Avolio 1993, p. 118).

Transactional governance encompasses monitoring and sanction capacity, whereas transformational governance covers social norms that exist within organizations (Elster 1989; Inauen et al. 2010), such as the norms that guide the quality of research or approaches to teaching (Trigwell and Prosser 2004), organizational culture (Wilkesmann et al. 2009), and shared visions (Bass and Avolio 1993). There is empirical evidence that transactional governance has no impact on the perception of the significance of academic teaching but that transformational governance may have an effect on teaching (Wilkesmann 2013).

Nevertheless, a university cannot function without transactional governance. For some aspects, (e.g., a high number of examinations or additional administrative functions), an extra bonus could be justified. In this case, the incentive provides recognition for extra work that is time consuming and does not support the academic career.

6 Empirical Evidence

6.1 Survey Design

We provide empirical evidence based on two surveys. The first survey was conducted at research universities in Germany between May and July 2009 (Wilkesmann and Schmid 2012), and the second survey was conducted at universities of applied sciences in Germany between March and April 2011. The target population was all German professors at both types of universities. Both surveys were designed to analyze professors' academic teaching behavior and are used here for a secondary data analysis.

For the first survey (Wilkesmann and Schmid 2012), we selected 8,000 research professors from the email distribution list of the German Association of University Professors (DHV). Professors paid within the framework of the new pay-for-performance salary (W-salary) scale were of special interest for the study; thus, we opted for a disproportionate stratified sampling approach that differentiated between two strata according to salary categories (merit pay vs. the age-related seniority scheme). A total of 1,119 professors completed the survey, constituting a response rate of 14%; 58.5% received pay-for-performance, and 41.5% received the old seniority wages. Among the sample, 77.7% were male, and 22.3% were female. The mean age in our sample was 49.0 years.

The second survey was based on a list of emails of the German Association of University of Applied Science Professors (HLB). The HLB organizes all professors at universities of applied sciences, but the address list included only the deans of all German universities of applied sciences. We checked all email addresses and sent an email with a link to the online questionnaire that requested that the email be forwarded to all professors in their faculty. In total, 942 professors completed the questionnaire. In the sample, 47.8% of professors received a performance-based salary, and 52.2% received the old seniority wages; 87.7% were male, and 21.3% were female. The mean age of the professors in our sample was 50.3 years. Due to the

distribution method, the response rate cannot be determined, but the sample covers 5.95% of the population of all professors at universities of applied sciences.

The samples of both surveys were representative with respect to faculties, gender and age but not payment scheme. There was no need to weight the disproportionate strata for the purpose of multivariate analysis because we integrated the respective variables into the model.

For a more detailed measurement description, see Wilkesmann (2012, 2013) and Wilkesmann and Schmid (2012, 2014).

6.2 Empirical Results for Profession versus Organization

We estimated an OLS regression with affective commitment as a dependent variable (see Tab. 1). The scale for affective commitment was an index (Cronbach's $\alpha = .78$) with the following four variables: "I perceive a strong sense of belonging to my university"; "I'm proud to tell other people who I'm a member of this university"; "I perceive the problems of my university as my own problems"; "Actually, I can work just as well at another university, when the general conditions are the same (recoded)". All items were measured on a five-point Likert scale ranging from 1 'I totally disagree' to 5 'I totally agree'.

The independent variables were the following:

new steering instruments, which were operationalized with the four dummy variables shown in Tab. 1;
commitment to the peers in the scientific community on a scale (Cronbach's $\alpha = .62$) of two items: "My colleagues and I are on the same wavelength" and "I'm highly appreciated by my colleagues";
attitude against NPM; to measure this attitude, we developed a four-item scale (Cronbach's $\alpha = .81$) comprising general reactance toward managerial governance, non-feasibility of measuring academic performance, inadequacy of managerial governance for professors, and awareness of managerial instruments as restricting control mechanisms.

We also added five control variables (see Tab. 1).

Table 1 Influence of NPM and professional recognition on affective commitment

		Affective Commitment $\alpha = .78$ (beta)
H 1	Pay-for-performance at the university (1 = yes; 0 = no)	.077**
New steering instruments	Agreement on objectives including teaching (1 = yes; 0 = no)	.008
	Teaching award winner (1 = yes; 0 = no)	-.047*
	Performance related budgets at the university (1 = yes; 0 = no)	.061**
H 2		
Commitment peers	Commitment to the peers in the scientific community	.370**
H 3	Attitude against NPM	-.114**

Attitude against NPM		
Control variables	Duration at the current university	.081**
	Type of university (1 = university of applied sciences; 0 = research university)	.020
	Discipline (1 = engineering; 0 = all others)	.101**
	Gender (1 = male; 0 = female)	.027
	Payment scheme (1 = pay-for-performance; 0 = old seniority pay)	.046
	N	1838
	adjusted. r^2	.188
	Level of significance 1% (**); 5% (*)	

Hypothesis 1 was mostly rejected. Pay-for-performance and performance-related budgets increased affective commitment, but the impact was small. Affective commitment was reduced only for teaching award winners.

The same was true for hypothesis 2. Commitment to peers had the strongest impact on the dependent variable but in the direction opposite to that assumed. A high commitment to peers increased affective organizational commitment. The first two hypotheses were not confirmed. By contrast, hypothesis 3 was supported; an attitude against NPM reduced affective organizational commitment. There were two interesting results regarding the control variables: duration increased organizational commitment, a relatively straightforward result, and discipline affected organizational commitment. Engineers had higher affective commitment than members of other disciplines.

In summary, the new steering instruments and an attitude toward (not against) NPM increased affective organizational commitment. The shift to managerial governance supported the development toward a complete organization. The new managerial instruments that strengthened the hierarchy supported the university as a complete organization. Simultaneously, recognition from colleagues in the profession increased organizational commitment. We could conclude that, in the perception of German professors, there was no contradiction between profession and organization.

6.3 Empirical Results for Intrinsic Motivation

To measure SDT, we used items from the Work Tasks Motivation Scale for Teachers of Fernet et al. (2008) and the Academic Motivation Scale developed by Vallerand et al. (1992) (for a more detailed description, see Wilkesmann and Schmid 2014). All items were measured on a five-point Likert scale ranging from 1 ‘I totally disagree’ to 5 ‘I totally agree’. We used a principal component analysis (PCA) to test the dimensionality of our translated and modified motivation scale. The PCA with varimax rotation revealed four latent variables (KMO-value .830; explained variance 57%): intrinsic motivation (Cronbach’s α = .79), introjected motivation (Cronbach’s α = .65), extrinsic motivation (Cronbach’s α = .68), and amotivation (Cronbach’s α = .61). The empirical merger of the intrinsic and the identified motivation subscales explained the difficulty of analytically differentiating between these two levels of

internalization for our sample or task of academic teaching. We used only intrinsic motivation as a dependent variable for the OLS regression (see Tab. 2).

The independent variables were:

autonomy: To measure perceived autonomy, we used the item "To work autonomously is a value in itself which cannot be compensated with all the known incentives exclusively provided by private sector companies (e.g., higher income, company car, etc.)".
relatedness: We operationalized perceived relatedness with the following two items: "The dean provides active support for the enhancement of teaching activities" and "My students are eager to actively participate in teaching".
competence: Perceived competence was operationalized with the following item: "My approach to teaching was a central criterion for my [successful] appointment".
crowding-out effect: We used two dummy variables that could be answered with 'yes' (= 1) or 'no' (= 0) "Are you receiving merit pay [bonuses] for teaching?" and "Does your agreement on objectives [with the dean/rectorate] include any statements on the advancement of teaching activities?" In addition, we integrated the index of extrinsic motivation as an independent variable.
awards: We used the dummy-variable "Have you ever won a teaching award?"

Furthermore, we controlled for age, gender, payment scheme, and the duration of employment at the current university.

Table 2 Influences of the three basic needs and crowding-out and awards on intrinsic teaching motivation

		Intrinsic teaching motivation $\alpha = .79$ (beta)
H1 Autonomy	More autonomy in comparison with private companies	.076**
H 2 Relatedness	Support from the dean	.027
	Students actively participate in teaching	.062**
H 3 Competence	Approach to teach was a central criteria for my appointment	.255**
H 4 Crowding-out effect	Receiver of merit pay for teaching (1 = yes; 0 = no)	.011
	Agreement on objectives includes teaching (1 = yes; 0 = no)	-.078*
	Extrinsic teaching motivation	-.299**
H 5 Awards	Teaching award winner (1 = yes; 0 = no)	.054*
Control variables	Gender (1 = male; 0 = female)	-.006
	Age	-.033
	Payment scheme (1 = pay for performance W; 0 = old wage system C))	.059
	Duration of employment at the current university	.037

N	1787
adj. r^2	.193

Note: Level of significance 1% (**); 5% (*)

Hypotheses 1 through 5 were supported. Autonomy and perceived competence increased intrinsic motivation. For relatedness, we only found evidence when the professors perceived support from students. There was no effect of perceived support from the deans. A plausible interpretation of this result is that, in Germany, deans are not known to intervene in teaching activities. For a crowding-out effect, we found some indication that agreement on objectives that included teaching had a negative impact on intrinsic teaching motivation. In addition, extrinsic teaching motivation had a negative impact on the dependent variable. An appropriate empirical validation of this hypothesis would require longitudinal data. Teaching awards appear to increase, not crowd out, intrinsic motivation (Frey and Neckermann 2008). This increase can be attributed to the nature of the awards, which did not qualify as selective incentives because they had no effect on the distribution of monetary and personal funds within universities. Professors perceive teaching awards not as a monitoring but rather as an appreciation tool. None of the control variables had an effect on intrinsic teaching motivation.

In the case of academic teaching, we found empirical evidence for the basic assumption of SDT. Autonomy, relatedness, and competence were relevant for intrinsic motivation. All three factors describe, coincidentally, transformational governance. In addition, we found some indication that extrinsic rewards could crowd out intrinsic motivation. At least in the case of teaching, the different regulatory styles in the SDT model were in conflict with each other. Professors were not simultaneously intrinsically and extrinsically motivated to the same extent.

7 Discussion and Conclusion

Regarding the imaginary contradiction between profession and organization, we found empirical evidence that NPM supports the development of universities toward a complete organization. In the perception of German professors, there is no conflict between organization and profession. Like professional service organizations (PSO), universities must manage more or less deviant members (autonomous working researchers and teachers) to ensure that they were working together toward a common goal, at least in terms of academic teaching.

The empirical evidence for the imaginary contradiction between intrinsic versus extrinsic motivation demonstrates that intrinsic teaching motivation is necessary for innovative academic work. However, intrinsic motivation only occurs when professors perceive an autonomous, supportive environment. NPM launched selective incentives in the university, which can crowd out intrinsic motivation. Our data about academic teaching indicate one exception: teaching awards. Awards are most likely extrinsic rewards that do not crowd out intrinsic motivation at universities (Frey and Neckermann 2008).

In summary, universities need transformational governance as well as some transactional governance. Strengthening the organizational hierarchy with the help of the new steering instruments (performance-related budgets, MbO) increases the

affective commitment of professors to the organization university. Simultaneously, professors need autonomy for intellectual innovation and respectful treatment by the rectorate. The new selective incentives established by the governments mislead academics to "game the system" (van Thiel and Leeuw 2002). National science foundations and politicians must counteract this development. For innovation in teaching as well as scientific development, professors must become 'institutional entrepreneurs' who are creative and who change the organization and their scientific field. These 'institutional entrepreneurs' need 'opportunity structures' that provide opportunities for success. 'Opportunity structures' include autonomy in organizations or the support of individual projects by national research foundations. If professors are guided only by a carrot-and-stick policy, they will not be innovative.

The imaginary contradiction between monitoring and autonomy exists in private industry as well. In PSOs such as consulting companies, the organization structure of a partnership can overcome this contradiction (Greenwood et al. 2007; Greenwood and Empson 2003). In a partnership, all members are principals and agents simultaneously. Partnerships are organizations with a strong collaborative community in which shared values and norms are more important than formal rules (Adler and Heckscher 2006, 2011). Similarly, in partnerships, numbers are helpful for a common reflection about shared and collaborative decisions toward a mutual goal.

These imaginary contradictions describe 'second-level management', that is, rectorate/superiors can only supply opportunities for people to conduct research and teaching. The rectorate cannot directly monitor, reward, or punish the production of research or teaching. Both research and teaching must be managed at a second level. Superiors must treat employees as the most valuable asset the organization offers because transformational governance is a vulnerable factor: it is easier to undermine than build up.

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