Two Worlds of Change
On the Internationalisation of Universities

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Abstract

Institutional change entails balancing multiple competing, inconsistent and often loosely coupled demands and concerns, often simultaneously. This article poses the following question: How are patterns of internationalisation of research among academic staff at universities balancing two worlds of change, that is, governance by the university leadership (H1) as well as initiatives by the faculty members (H2)? This article argues and empirically substantiates that internationalisation of academic staff tend to be a balancing-act between these two worlds of change. Whereas most universities increasingly formulate strategies for internationalisation (H1), the research behaviour of faculty members seems weakly associated with such strategies (H2). Variation in international research collaboration among permanent academic staff at universities is best explained by their positional level (H2). This article also suggests key conditions under which internationalisation of research results from collaboratory strategies between university leadership and faculty members.

Acknowledgements

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Introduction

Institutional change entails balancing multiple competing, inconsistent and often loosely coupled demands and concerns, often simultaneously (Trondal 2010; Wilson 1989: 327). During recent decades European universities have faced demands for urgent and radical institutional change (Olsen and Maasen 2007: 20). This article argues that two complementary dynamics of change are emergent as regards the internationalisation of research at European universities. These dynamics of change confronts one classical dilemma in university life beleaguered on the inherent trade-off between instrumental design and the logic of hierarchy on the one hand and academic autonomy and professional neutrality on the other. This dilemma highlights competing understandings of university life, of institutional change, and of what internationalisation of universities entails. These two worlds of change targets two classical questions of university life: To what extent are universities mainly meritocratic communities of peers established on the basis of the principle of scholarly autonomy, and to what extent are universities becoming political instruments to achieve societal goals? This article poses the following question: How are patterns of internationalisation of research among academic staff at universities governed by the university leadership as well as initiated by the faculty members themselves? This study argues and empirically substantiates that internationalisation of university staff tend to be a balancing-act between these two worlds of change. The ambition of this article is twofold: First, two conceptual models of change are suggested. Secondly, these models are illustrated with fresh survey data on the internationalisation of research among academic staff. This article also suggests some conditions under which internationalisation of research results from collaboratory strategies between university leadership and faculty members: the size of universities, their age and institutionalisation, and the (perceived) scientific excellence of faculty members.

European universities have been internationally oriented since medieval times (e.g. Geuna 1998). By definition, internationalisation among academic staff includes co-operation and mobility across territories. International mobility of students and scientists was one of the generic and quintessential features of the first universities in Europe. After the Second World War, the international mobility of researchers and students has increased substantially, especially within Asia, North America and Western Europe. Despite being an old phenomenon, emerging patterns of internationalisation are arguably driven by new mechanisms and activate new patterns of co-operation and conflict inside universities. Internationalisation represents novel patterns of transformation but these processes are also mediated and modified by existing university institutions, policies and practices. Internationalisation of research is modified...
and patterned by “language barriers, disciplinary self-sufficiency, issue boundaries, the diversity of academic cultures and segmented publication markets” (Kohler-Koch and Larat 2009: xx). This article explores two worlds of change in the internationalisation of research among academic staff that are fostered by two supplementary causal mechanisms: First, emerging patterns of internationalisation are seen as crafted by the university organisation and leadership – hereafter labelled ‘Internationalisation by hierarchy and design’ (H1). Secondly, traditional patterns of internationalisation are fostered by the academic staff themselves and often organised through transnational communities of scholars – hereafter labelled ‘internationalisation by “choice” and discipline’ (H2) (Gornitzka et al. 2003; Jeppesen and Trondal 2007; Stensaker et al. 2008; Trondal 2005). H2 represents a well known pattern of internationalisation of research. International mobility of researchers has occurred as long as European universities have existed (Green 1997; Marginson and Considine 2000). H1, by contrast, suggests new patterns of internationalisation that complement the traditional ones. This type of internationalisation is rooted in an instrumental logic where endogenous organisational legitimacy and survival as well as exogenous societal growth and innovation are assumed positively related to how universities are designed and managed.

Internationalisation of research is operationalised in this study as the de-bordering of research activities and patterns of contacts between academic staff that cross-cut, redefine and obscure territorial borders. Both worlds of internationalisation share some common features. H1 and H2 share some common ground: increased contact, imitation, activity, and networks that cross national borders. In general then, internationalisation implies that the borders of nation-states become less important for the energies, activities, interests and loyalties of researchers, students, and universities. International research contacts and collaboration presupposes faculty motivation as well as attractiveness among colleagues in other countries (Olsen and Svåsand 1971). Research collaboration is the most demanding type of international contact since it presupposes attractiveness, international visibility and often includes significant involvement by the researcher. By contrast, participation in international conferences as well as international research visits should not be considered equally demanding since there are many conferences and venues available to most faculty members at universities. Conference participation may be easier to arrange and involves less work than a study or research visit abroad. International publishing implies individual attractiveness since publications are generally assessed by peers. Since the peer review process is frequently anonymous, it does not, however, presuppose visibility. Guest lectures and evaluation work are more demanding in the sense that these presuppose international visibility as well as attractiveness.
Data and conclusions: Academic staff at Norwegian universities serves as our test-bed. By most standards Norway is a small country. Under such conditions internationalisation of research among academic staff may be more demanding, for example in terms of language barriers, but at the same time also more important for scientific progress and quality than in larger and more central countries (Kyvik and Larsen 1997). Bibliometric studies show, for example, that small countries are more active internationally than larger nations (Luukkonen et al. 1992; Hakala 1998). Small countries often have modest national research markets, few potential partners and facilities, and dependent on a broader international market for publication, conferences, research visits, etc (European Commission 1997: 665). To support the logic of a critical case, we have selected the youngest of the seven Norwegian universities for analysis – University of Agder (UoA). We assume that young universities are likely to use H1 as an instrument to gain short-term organisational legitimacy and long-term survival by proving that they are ‘real’ universities. To obtain reputation and resources, young universities may be particularly apt to adjust to international archetypes of ‘good university governance’. To test this assumption the data from UoA is compared with data from four established Norwegian universities.

Whereas most studies of international academic collaboration are based on bibliometric data and focus on co-authorships (Kyvik and Larsen 1997), this study applies data at the level of individual academic staff and sheds light on different patterns of internationalisation of research. Furthermore, most studies are confined to specific disciplines while the present study compares staff across most university disciplines. This study benefits from two data sources: First, survey data among all permanent faculty members of the rank of assistant professor or higher at Norway’s four old universities. The survey was conducted in 2000, and the number of respondents is 1967 (60 per cent response rate). Secondly, we use survey data among all permanent faculty members – from assistant professors to professors - at UoA. The total number of respondents is 412 (71 percent response rate). In sum, these data bases offer valuable observations on two worlds of internationalisation of research at universities.

The article is sequenced as follows. The next section outlines two supplementary conceptual models of change and suggests empirical predictions on the internationalisation of research among faculty members. The subsequent section presents the empirical data and methodology. The final sections analyse the internationalisation of research among academic staff at Norwegian universities, and suggests three conditions under which internationalisation of research results from collaboratory strategies between university leadership and faculty members: the size of universities, their age...
and institutionalisation, and the (perceived) scientific excellence of faculty members.

**Two worlds of change**

Despite the heritage of internationalisation (H1), emerging patterns of internationalisation have become more important relative to the traditional aspects (H2). The distinction, however, is more a continuum than two clear opposites. It may be difficult to classify particular events as either H1 or H2. Concomitantly, we are expected to see increasingly complex, multifaceted and ambiguous patterns of internationalisation of research among academic staff at universities. Increasing the conceptual complexity, however, does not solve the factual complexity. Our primary goal is to contribute to a conceptual simplification that brings us closer to an understanding of emerging patterns of internationalisation.

**H1: Internationalisation by hierarchy and design**

This model derives from an organisation theory approach by assuming a direct and intimate relationship between the formal organisation of public administration, the decision-making processes being evoked, and ultimately the public policy produced (Egeberg 2003). Changing public policy is the product of changing organisational forms and the product of administrative capacity-building at new executive centres (Skowronek 1982). This is a reform-optimistic perspective assuming that the internationalisation of academic staff at universities is the direct product of wilful political-administrative leaders who have comprehensive insights into and power over administrative reform processes (Christensen and Lægreid 2002: 24). Comprehensive or first-order reforms are crafted by powerful executive institutions with relevant means-end knowledge and considerable political and administrative resources (March and Olsen 1989).

H1 departs from the assumption that formal organisational structures mobilise systematic biases in the behaviour of organisational members because formal organisations provide cognitive and normative shortcuts and categories that simplify and guide decision-makers’ behaviour and role enactment (Schattschneider 1975; Simon 1957). Organisations offer cognitive maps that simplify and categorise complex information, offer procedures for reducing transaction costs, give regulative norms that add cues for appropriate behaviour as well as physical boundaries and temporal rhythms that guide decision-makers’ perceptions of relevance with respect to public policy (Barnett and Finnemore 1999; March and Olsen 1998). Government officials
resemble the ‘administrative man’ faced with computational limitations with respect to the potential mass of problems, solutions and consequences present (Simon 1957). Owing to the bounded rationality of decision-makers, the horizontal specialisation of government organisations - such as universities - systematically reduces the attention of organisational members - such as academic staff - into a limited number of relevant considerations (Gulick 1937). Moreover, by carving the organisation into vertical hierarchies of rank and command the behaviour evoked by organisational members is assumed guided by the political-administrative hierarchy through disciplination and control (Dégreid and Olsen 1978: 31). Internationalisation of academic staff is thus the result of hierarchical imposition and horizontal departmentalisation of university structures where mutually exclusive groups of participants, problems, alternatives and solutions reside (Olsen 2003). This perspective also departs from an instrumental approach that sees political and administrative leaders as instruments which may be utilised to reach desired goals (Egeberg 2003).

What empirical predictions can be derived from this approach? The assumption that the internationalisation of research at universities can be designed and steered has been a key assumption behind recent European university reforms advocating “strong university leadership, the formulation of clear, consistent and stable goals, and the development of long-term-strategies for managing change” (Olsen 2007: 45). In contrast to the classical *laissez-faire* model of *free movers* (H2), organised international contact and collaboration among scholars is likely to increase due to the systematic political and administrative attention that is devoted to it (van der Wende 1997). Whereas the classical internationalisation model conceived contact as a basically individually driven activity (H2), the model of organised mobility has reduced the individual discretion considerably (H1). Research funding from international and supranational organisations often accompanies expectations and obligations of international research visits, conferences, study visits, etc (Gornitzka et al. 2003). Essentially, the internationalisation of university staff is pictured as forged by the university leadership, having organisational capacities, permanent staff, routines, and economic resources to change the behaviour of its faculty members. Internationalisation is controlled and planned (Gornitzka and Langfeldt 2008). Universities are seen as instruments for maximising instrumental and often exogenous goals imposed by hierarchical steering, uniform management structures, external representation in the university boards, exogenous accreditation on the basis of exogenous standards, and a professional administration (Marginson and Considine 2000: 4). Internationalisation of research is not driven by “voluntary” decisions among individual university staff. Rather, the internationalisation of universities has emerged as an independent policy area.
supported by a formal administrative apparatus (Kehm 1999: 373; Teichler 2004: 2). Whereas the first European universities had strong links to the global Catholic Church, present day universities are government agencies in the pursuit of domestic policies for research training and the production of excellent candidates. European universities are increasingly bureaucratised, particularly by an increased proportion of top administration staff with administrative capacities for reform (Gornitzka et al. 2009; Paradeise et al. 2009). In sum, the conception of ‘internationalisation by hierarchy and design’ suggests that the internationalisation of academic staff is crafted by university rules, standards and organisational resources. Internationalisation becomes an embedded bureaucratic routine forged by the university organisation. Most European universities have developed explicit strategies to internationalise research and higher education in the 1990s (Frolich 2008; Teichler 1998; van der Wende 1997). H1 assumes that university strategies and administrative capacities for internationalisation contribute to an internationalisation of members of faculty (Paradeise et al. 2009).

The university apparatus is not a neutral tool available to the university leadership in office, and there is not a neat separation between political and administrative levels inside universities. The internationalisation of academic staff might be crafted by the executive university leadership at different levels through political will and administrative command, and convened within horizontally specialised faculties and departments (Gulick 1937). One would thus expect significant variation in international activities between different faculties because different faculties may have different strategies for internationalisation of research.

This does not, however, substitute mechanisms of internationalisation emanating from the domestic government, international organisations or international non-governmental organisations (Brunsson and Jacobsson 2000; Kohler-Koch 2003; Gornitzka and Langfeldt 2008; Olsen 2003). Since World War II the level of international co-operation in the field of research and higher education has increased substantially. One of the main international institutions has become the European Commission – both due to increased legal competences in the field of research and due to increased administrative capacity inside the Commission DGs and its ‘parallel administration’ of domestic and EU-level agencies. Hence, the action capacity of the European Commission has become noticeable in this field (Gornitzka and Langfeldt 2008; Maasen and Olsen 2007). The focus of this article, however, is on the role of intra-university mechanisms for internationalisation.

The overall rationale for academic life differs between the two conceptual worlds of internationalisation. The Humboldt tradition has put primary emphasis on the importance of academic independence, university autonomy, and the
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cultural rationale of university existence. By contrast, the dogma and doctrine for reforming public sector organisations during the last couple of decades emphasised the instrumental value of such institutions in producing public goods (Christensen and Lægreid 2002). According to the model of ‘internationalisation by hierarchy and design’, the justifications for internationalisation of research are likely to be instrumental (Olsen 2007; Stensaker et al. 2008: 2). Economic rationales have always played an important role in research. For young universities instrumental arguments might also emphasise internationalisation as a strategy safeguarding organisational legitimacy and survival by adapting to what might be perceived as international models of ‘good university governance’. Universities may thus instrumentally adapt by “learning across space” to how universities perform in other countries (Rose 1993).

**H2: Internationalisation by ‘choice’ and discipline**

Universities are traditionally seen as meritocratic communities of fellow peers that enjoy large degrees of scholarly autonomy from state, society and markets. This conception views universities as republics of scholars where scholarly freedom is the *raison d’être*. According to this vision, the internationalisation of research should chiefly be understood as cross-border contact patterns and mobility between individual faculty members. Patterns of cross-border contact and mobility are ultimately *initiated and pursued* by individual researchers. Moreover, the justifications of internationalisation of research will be based on endogenous scientific criteria alone. Internationalisation will be seen as promoting the quality of research for its own sake, and not for instrumental purposes.

For centuries the norms, resources, organisational capacities, routines and personnel of universities were loosely coupled to European government(s). Particularly, the field of research and higher education was loosely coupled to nation-state governance (Weick 1976). Since medieval times one endogenous aspect of research and higher education has been its insensitivity to national borders and national governance (Scott 1998; Teichler 2004). During these periods, students and university teachers were internationally free floaters between the best universities in Europe (Amaral 2001: 124). In the middle ages the Catholic Church, through the international Church administration, the Catholic educational system and the common Latin vocabulary, was an important facilitator of organisational standards of research and higher education throughout Europe. National top civil servants were socialised into European cosmopolitans through the Catholic Church. European universities also contributed to secular learning and socialisation of national civil servants and contributed to shared notions of appropriate policy standards among top
civil servants in Europe (Knudsen 2002). University staff in Europe was subject to transnational diffusion and learning among communities of scholars. There was a lack of domestic organisational capacities, recourses, routines and traditions for instrumentally steering universities and their faculty members. Subsequently, the internationalisation of university staff was loosely coupled to university organisations, strategies and leadership.

The European university organisation is often seen as loosely coupled, particularly between the administrative pillar with the director (or equivalent) at top and the scientific pillar with the principal (or equivalent) at top. In such organisations the executive leadership in the administrative pillar will have difficulties to steer the research activities in the scientific pillar. In addition, it is often assumed that the internal coupling of the scientific pillar is loosely coupled between the principal, the dean and the professor. Decisions made by the dean may only marginally guide the research activities of the professor. Moreover, the research activities at universities are often more loosely coupled to the formal university organisation than the educational activities. For example, most of the administrative capacities at European universities are earmarked for educational purposes. Only a small proportion of the university administration is a research support system. Consequently, the potential for hierarchical steering of the research activity at European universities is modest and the leeway for academic staff to steer their own research portfolio is correspondingly wider.

Loosely coupled organisations increase the explanatory potential of demographic characteristics among organisational members (Selden 1997). We assume that the positional level among faculty members will be of outmost importance to explain the internationalisation of their research activities. One prediction is that scholarly hierarchies inside universities affect degrees of internationalisation of research. Professors will thus be more internationally active than assistant professors. We may also assume that older scholars with doctoral degrees are generally more internationally active than younger scholars without a doctoral degree. In sum, old professors are assumed to be more internationally active than young assistant professors due to their international attractiveness and research networks (Olsen and Svåsand 1971).

Another prediction is that disciplinary differences will accompany different degrees of internationalisation between different university faculties and departments. Different disciplines may have different levels of international contact. More precisely, the so-called “hard” sciences are often assumed to be generally more internationally oriented than the “soft” sciences (Kyvik and Larsen 1997). Conceptualised as a continuum, “hard” and “soft” disciplines are characterised by degrees of paradigmatic status and consensus (Becher
To understand disciplinary differences in international communication patterns the nature of research subjects and audience structure is of particular relevance (Kyvik 1991; Kyvik and Larsen 1997). Some disciplines are global in the sense that research results are not influenced by the country or region where the research is undertaken. Experimental physics is one example of such a discipline. On the other hand some research subjects are situated in a social, cultural, biotopical and geographical context that makes the research results particularly regionally oriented. Such research subjects are more often found in soft than in hard fields. A national and regional lay audience is also more common in the former than the latter field. It is therefore reasonable to assume that internationalisation varies accordingly between hard and the soft fields as well as between individual disciplines.

Internationalisation of research thus results from endogenous processes among individual scholars at the university and faculty level, de-coupled from actions and initiatives from the university leadership. Hence, “[p]rocesses of internationalisation are neither supported nor effectively hindered by government actions...” (Gornitzka et al. 2003: 26). This is the century-old mode of “voluntary” internationalisation where internationalisation is loosely coupled to hierarchical command and organisational design (Engel 2003: 244). Secondly, this conception of ‘internationalisation by “choice” and discipline’ suggests that the internationalisation of academic staff is organised through academic networks, often limited to small groups of scholars that share some basic perceptions of appropriate scholarly standards (Knudsen 2002: 38). Processes of transnational imitation through epistemic networks are less guided by government command than by learning processes among circles of peers. Network models blur the distinction between scientific centres and peripheries, and the mosaic of international contacts among university researchers may be complicated to picture. Still, the network approach assumes that international contacts cluster around fairly stable networks of actors, disciplines, paradigms and research programmes (Smeby and Trondal 2005).

Data and methods

This study benefits from two data sources. The first data base used is a large survey among all permanent faculty members of the rank of assistant professor or higher at Norway’s four old universities (Oslo, Bergen, Trondheim, Tromsø). This survey was completed in 2000, and the number of respondents is 1967 (60 per cent response rate). In itself, this is probably among the most extensive data bases worldwide on the actual behaviour of
academic staff. A more elaborated presentation of these data is presented in Smeby and Trondal (2005). The second data set consists of a recent survey among all academic staff – from assistant professors to professors - at the UoA. The total number of respondents is 412 (71 percent response rate). This survey was conducted as an internet survey (Quest Back) in 2007. This survey was part of the work of a committee set down at the university to formulate a new university strategy on internationalisation. The idea was that university strategies without empirical anchoring would face problems of validity. Whereas policy developments and strategy processes at universities often involve imitation from neighbouring universities and from excellent universities, the idea at UoA was to learn not only across space but also from within its own organisation through a survey.

In sum, these data bases offer valuable observations on two worlds of internationalisation of research at universities. This study presents frequency tables on the distribution of international research collaboration among faculty members, as well as bivariate correlation analyses (Pearson’s r) and OLS regression analyses that reveal factors that may explain patterns of international research collaboration among faculty members. Due to the large N in both surveys, even very weak correlations (i.e. less than .10) may be statistically significant. However, ‘unpatterned’ (single) correlations at this level, even if statistically significant, will not be assigned weight to.

The internationalisation of academic staff

Similar trends of internationalisation of research are demonstrated at the four old Norwegian universities. We see a growth in different types of international contacts over time, such as participation at international conferences, international guest lecturing, international research stays, international peer review work, and international research collaboration (Smeby and Trondal 2005). This international activity has resulted in a corresponding growth of international publishing and co-authorships. In 2004, for example, a majority of scientific articles published by Norwegian scholars were co-authored by international colleagues and a majority was published in English (Gornitzka et al. 2008: 171). We also see a similar increase in international publishing patterns over time at Norwegian universities and research institutes. Despite variation between disciplines, we see a convergence between disciplines with regard to international publishing patterns (Slipersæter and Aksnes 2008).

We also witness a significant increase in international travels during the last 20 years among Norwegian scholars (Smeby and Trondal 2005). However, disciplinary differences still persist with respect to international collaboration...
patterns (Trondal and Smeby 2001). Similarly, disciplinary differences are also observed in the funding patterns of research. Hard sciences – like life sciences - have a higher proportion of research funding from abroad than soft sciences -like social sciences (H2) (Slipersæter and Aksnes 2008: 19). In sum, we observe a corresponding development in international funding, international research collaboration, and international co-authorships during the last 20 years among academic staff at the four old Norwegian universities. Funding patterns, however, are still overly national and regional. A study shows that in 2001 31 percent of the academic staff in Norway received research funding from abroad (Trondal and Smeby 2001). Funding from abroad is far higher among the applied research institutes than among the state universities in Norway (Slipersæter and Aksnes 2008: 17).

The next question is what can explain international contact patterns among permanent academic staff at universities. Our data from the four old Norwegian universities offer the possibility to see to what extent international contact patterns among academic staff are best explained by their sex, age, positional level, or faculty/discipline.

Table 1 Factors that explain the frequency of different types of international professional contacts during the last year, among permanent academic staff at four Norwegian universities (N=2048) (beta)\textsuperscript{a,b}.

<table>
<thead>
<tr>
<th></th>
<th>Conferences</th>
<th>Guest lectures</th>
<th>Study/research stays</th>
<th>Review work</th>
<th>Research collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>.04</td>
<td>-.01</td>
<td>-.01</td>
<td>.03</td>
<td>.01</td>
</tr>
<tr>
<td>Age</td>
<td>.07*</td>
<td>.11*</td>
<td>.06**</td>
<td>.05*</td>
<td>.10**</td>
</tr>
<tr>
<td>Positional level</td>
<td>.22**</td>
<td>.27**</td>
<td>.13*</td>
<td>.27*</td>
<td>.27**</td>
</tr>
<tr>
<td>Dum1: hum. Vs. natural sc.</td>
<td>-.02</td>
<td>-.07**</td>
<td>-.09**</td>
<td>-.01</td>
<td>.06**</td>
</tr>
<tr>
<td>Dum2: social sc. Vs. natural sc.</td>
<td>-.07**</td>
<td>-.09**</td>
<td>.00</td>
<td>-.03</td>
<td>.05</td>
</tr>
<tr>
<td>Dum3: medical sc. vs. natural sc.</td>
<td>-.05*</td>
<td>-.06**</td>
<td>.11**</td>
<td>.02</td>
<td>.06**</td>
</tr>
<tr>
<td>Dum4: Technical sc. vs. natural sc.</td>
<td>-.05*</td>
<td>-.06**</td>
<td>.06**</td>
<td>-.05*</td>
<td>-.02</td>
</tr>
<tr>
<td>R\textsuperscript{2}</td>
<td>.05</td>
<td>.08</td>
<td>.04</td>
<td>.07</td>
<td>.08</td>
</tr>
</tbody>
</table>

\textsuperscript{a} A test of collinearity reveals no tendencies of extreme multicollinearity between the different independent variables in this table. The following independent variables are included in the analysis: Sex and age (continuous variables), positional level (professor, associate professor, assistant professor). In addition, we have added four dummy variables to see the effect of disciplinary belonging, with natural sciences as the reference variable. a) humanists (value 1), natural scientists (value 0), b) social scientists (value 1), natural scientists (value 0), c) medical scientists (value 1), natural scientists (value 0), and d) technical scientists (value 1), natural scientists (value 0).

\textsuperscript{b} All the five dependent variables in the table are dichotomous (participated or not participated on international professional travels).

Table 1 demonstrates that positional level is the most important variable in order to explain patterns of international contacts among academic staff at
universities. This observation corresponds to the traditional model of internationalisation (H2). Older scholars are somewhat more internationally active than their younger colleagues. We also see that the difference between scholars at different positional levels increase as the type of international contact is becoming more demanding (such as international research collaboration). Table 1 shows no effects of sex on internationalisation, and no major difference between different faculties/disciplines. However, we see that natural scientists are generally more internationally active than academic staff in other fields of research (H2). Similar observations are made among PhD students, where those from mathematics and natural sciences have far more international mobility than those from other disciplines (Flottum et al. 2009: 11). Despite most European and US universities develop strategies for internationalisation of research and higher education (Frolich 2008; Taylor 2004), Table 1 shows that patterns of internationalisation at universities are explained by focusing on demographic characteristics among the academic staff themselves (H2).

**Internationalisation at a young and small university**

The model of universities as driven by design and hierarchy (H1) is supported by the fact that universities in Western Europe are predominantly public and that they basically serve as sub-ordinate agencies underneath the ministry (Gornitzka et al. 2007: 191). Most universities have strengthened their ability to strategic planning by building in-house administrative capacities (Paradeise et al. 2009: 206). Subsequently, universities increasingly hammer out strategies for internationalisation of their organisation. At UoA the university strategy for internationalisation (from 2009) aims at striking a balance between seeing the university as an instrument to reach societal growth and innovation (H1) and conceiving the university as a meritocratic community of scholars (H2) (see Knight 2004). Similar balancing acts are seen in white papers from the European Commission and from most European governments. Still, research is increasingly seen as an instrument and “are to be measured in terms of productivity and competitive performance” (H1) (Olsen 2009: 454; Figel 2006: 7). Also the government strategy for internationalising Norwegian research and higher education aims to combine “quality” in research and higher education and seeing “higher education as ... an instrument in Norwegian foreign policy...” (NOU 2008:3: 164). The internationalisation strategy at UoA reflects similar ambitions – to see the university as a regional innovation mechanism and at the same time to be a university of international standards. Similar to most European and US universities, internationalisation is mentioned in the UoA mission statement (see Taylor 2004). In addition to emphasising formalised international agreements, the university strategy is focused on international research funding. At UoA this goal has mainly
accompanied a minor strengthening of the administrative capacity at the helm of the university organisation. We also see corresponding emphasis on international publishing in the UoA strategy. This ambition is increasingly materialised by an ever larger proportion of international publications among full professors and also among associate professors with a PhD (Jeppesen and Trondal 2007: 129). Faculty not holding a PhD does not have a corresponding level of international publications. This observation suggests that the positional level of faculty may explain internationalisation of research (H2).

Most of the formalised agreements between UoA and universities in other countries are directed towards the Nordic countries (45 percent), universities in other European countries (26 percent), universities in North America (8 percent), and universities in other parts of the world (22 percent). Within universities, faculties often tend to develop different strategies for internationalisation (Frolich 2008). However, university strategies sometimes fail to guide the behaviour of faculty members. At UoA the faculty strategies for research seem only marginally to affect the actual international contact patterns among academic staff. Whereas different faculties at UoA have arrived at different research strategies, the general patterns of international research collaboration among academic staff hold for all fields of learning. For example, the Faculty for economics and social sciences has a strategy supporting informal international contacts – thus mirroring H2. By contrast, the faculty for natural sciences officially supports formalised international agreements – as described by H1. Nevertheless, faculty members at both faculties agree that informal international contacts are more important than formalised international agreements (Jeppesen and Trondal 2007: 132). Figure 1 provides a brief overview of the international contacts pursued by permanent academic staff at UoA. Essentially, international contacts among UoA staff are Europeanised. This observation is particularly evident with respect to participation at international conferences, guest lecturing, and research collaboration. International contacts outside Europe are mostly limited to participation at academic conferences.

Research collaboration may be of two basic kinds: formalised through codified agreements between universities and informal networks between colleagues. Recent university reforms have increasingly emphasised formalised research collaboration (in addition to formalised mobility schemes for students and teachers). Table 2 explores these different kinds of research collaboration among UoA academic staff. Similar to the overall picture seen in Table 1, no major differences are observed between faculties/disciplines with respect to participating in international research collaboration. The only outlier is academic staff in fine arts.
Figure 1 Types of international professional contacts, by areas of mobility (Absolute numbers)


Table 2 Percent permanent academic staff engaged in different kinds of international research collaboration, by faculty

<table>
<thead>
<tr>
<th>Faculty for health and sports</th>
<th>Faculty for humanities and pedagogic</th>
<th>Faculty for fine arts</th>
<th>Faculty for technology and natural sciences</th>
<th>Faculty for economics and social sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research collaboration with colleagues in other countries(^1)</td>
<td>67</td>
<td>51</td>
<td>28</td>
<td>54</td>
</tr>
<tr>
<td>Participation in formalised international research networks(^2)</td>
<td>55</td>
<td>49</td>
<td>44</td>
<td>55</td>
</tr>
<tr>
<td>Participation in informal international research networks(^2)</td>
<td>80</td>
<td>73</td>
<td>66</td>
<td>80</td>
</tr>
<tr>
<td>Mean N</td>
<td>79</td>
<td>97</td>
<td>42</td>
<td>99</td>
</tr>
</tbody>
</table>

1) Original question: “Have you collaborated with colleagues in other countries with regards to research during the last five years?” This variable includes value 1 to 3 on the following five-point scale: very often (value 1), fairly often (value 2), sometimes (value 3), rarely (value 4), never (value 5).

2) Original question: “How important would you estimate that formal research networks are for your research?” This variable includes values 1-3 on a six-point scale from very important (value 1) to very unimportant (value 6).

Next, having shown no effect of faculty/discipline with respect to international research collaboration, Table 3 explores the extent to which such
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collaboration is significantly associated with the positional levels of permanent academic staff at UoA. As seen in Table 1, Table 3 also demonstrates that positional level is an important variable in order to explain patterns of international research collaboration among academic staff. This observation corresponds to the traditional model of internationalisation (H2). Research collaboration with colleagues in other countries and participation in informal international research networks is significantly associated with the positional level of the participants. As predicted from the organisational theory approach outlined above, participation in formalised international research networks is not associated with positional levels. The main reason for this is that such participation is ‘programmed’ within network structures.

Table 3 International research collaboration among permanent academic staff, by positional level (percent and Pearson’s r)

<table>
<thead>
<tr>
<th></th>
<th>Professors and Associate Professors (with a PhD)</th>
<th>Assistant Professors, Associate Professors (without a PhD)</th>
<th>Pearson’s r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research collaboration with colleagues in other countries¹</td>
<td>72</td>
<td>35</td>
<td>.42**</td>
</tr>
<tr>
<td>Participation in formalised international research networks²</td>
<td>51</td>
<td>50</td>
<td>-.05</td>
</tr>
<tr>
<td>Participation in informal international research networks²</td>
<td>84</td>
<td>63</td>
<td>.32**</td>
</tr>
<tr>
<td>Mean N</td>
<td>166</td>
<td>156</td>
<td>322</td>
</tr>
</tbody>
</table>

*) p ≤ 0.05     **) p ≤ 0.01

1) Original question: “Have you collaborated with colleagues in other countries with regards to research during the last five years?” This variable includes value 1 to 3 on the following five-point scale: very often (value 1), fairly often (value 2), sometimes (value 3), rarely (value 4), never (value 5).

2) Original question: “How important would you estimate that formal research networks are for your research?” This variable includes values 1-3 on a six-point scale from very important (value 1) to very unimportant (value 6).

The final question is what might explain international research collaboration among permanent academic staff at UoA. Our data permit us to see to what extent international patterns of research among academic staff are best explained by their sex, age, and positional level. In short, this analysis demonstrates a similar picture as presented for the four old Norwegian universities (Table 1). International research collaboration and participation in informal international research networks is positively associated with positional level, and to some extent age. The latter two variables, however, are intercorrelated. Participation in formalised international research networks is also positively associate with age, but negatively associated with sex. In short, internationally active researchers tend to be old male professors. This
observation is also corroborated by the fact that a vast majority (90 percent) of academic staff at UoA consider the international office as unimportant with respect to international research collaboration. Most of these observations support H2.

Table 4 Factors that explain the frequency of international research collaboration among permanent academic staff at UoA (N=412) (standardised beta coefficients)

<table>
<thead>
<tr>
<th></th>
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<th>Participation in formalised international research networks</th>
<th>Participation in informal international research networks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>-.05</td>
<td>-.15*</td>
<td>-.07</td>
</tr>
<tr>
<td>Age</td>
<td>.06</td>
<td>.15*</td>
<td>.17**</td>
</tr>
<tr>
<td>Positional level</td>
<td>.41**</td>
<td>.09</td>
<td>.35**</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>.18</td>
<td>04</td>
<td>13</td>
</tr>
</tbody>
</table>

*) $p \leq 0.05$       **) $p \leq 0.01$
1) This variable has the following five-point scale: very often (value 1), fairly often (value 2), sometimes (value 3), rarely (value 4), never (value 5).
2) This variable has a six-point scale from very important (value 1) to very unimportant (value 6).
3) This variable has the following values: Male (value 1), Female (value 2).
4) This variable is a natural continuum.
5) This variable is dichotomous: Professors and Associate Professors (with a PhD) (value 1), Assistant Professors and Associate Professors (without a PhD) (value 2).

Conclusions

This article argues and empirically substantiates that internationalisation of academic staff tend to be a balancing-act between two worlds of change. Whereas most universities increasingly formulate strategies for internationalisation, the research behaviour of faculty members seem only weakly guided by such strategies. Whereas different faculties at UoA have arrived at different research strategies, the general patterns of international research collaboration among academic staff hold for all fields of learning. Variation in international research collaboration among permanent academic staff at universities is explained by their positional level. Similar observations are made at the four old Norwegian universities. At present no important difference is observed between fields of learning concerning the extent of international travel among faculty members (H2). Furthermore, disciplinary differences in international research collaboration seem to reflect differences in research collaboration in general. Even though there is a general tendency towards homogenisation between fields of learning, disciplinary differences in audience structure have to be recognised. In a “hard” discipline like biotechnology there are regional clusters based on local networks involving multiple participants (Powell et al. 2002).

Funding and programmes on national and supranational levels seem to be successful in terms of stimulating research collaboration in Europe. Research collaboration is the most demanding type of contact between researchers by
presupposing attractiveness, international visibility and often involving significant involvement by the researcher. Funding and programme activities seem partly to affect the behaviour of academic staff – towards a Europeanisation of their international contact patterns (H1). Recent research also shows that the vision of ‘internationalisation by design’ is largely guiding government policy and university strategies in most OECD countries, including Norway (Paradeise et al. 2009). For example, during the late 1990s and the early 2000 the Europeanisation of Norwegian research and higher education policies have moved from being largely occasional, non-routinised, and non-institutionalised processes towards becoming increasingly routinised, rule-driven, and institutionalised (Trondal 2005). Subsequently, research policy and research behaviour among academic staff sometimes coincide.

The present study is based on data on Norwegian faculty members at the four old universities and at one young and small university. We have argued that these data are of significant interest in studies of the internationalisation of research since international contacts are more extensive in small countries. Our conclusions are necessarily preliminary in their findings. The tendencies demonstrated in the Norwegian case may, for example, be different in larger countries. Furthermore, there are significant differences in the level of international involvement among academics in industrialised countries, which may not reflect country size. Also factors like research culture and research facilities influence faculty members’ international collaboration patterns (El-Khawas 2002).

Additionally, variation in internationalisation of university research may be systematically associated with organisational and institutional traits of universities. The following conditions are suggested under which internationalisation of research results from collaboratory strategies between university leadership (H1) and faculty members (H2): the size of universities, their age and institutionalisation, and the (perceived) scientific excellence of faculty members.

First, one might assume that the sheer size of organisations, measured by the number of staff, may condition the likelihood for collaboratory strategies to emerge. Rules are often created when organisations grow and become more heterogeneous (March, Schulz and Zhou 2000: 2). The likelihood of face-to-face encounters among incumbents is generally greater in small organisations than in large organisations. One example is the Graduate School of Administration (GSIA) of the Carnegie Institute of Technology in Pittsburgh in the period 1955 to 1965. This Institute contained a fairly small number of staff and was characterised by “cooperative interdependence of community of scholars” (March 2008: 380). Also the history of Stanford University shows how
organisational growth in size accompanies increased formalisation of rules, increased decentralisation, and less likelihood of face-to-face contacts between university heads and faculty (March, Schulz and Zhou 2000). Face-to-face encounters in small research institutions are one prerequisite for the development of both structural connectedness inside universities as well as the development of informal networks between university leadership and faculty (March 1999: 135). Both types of networks might facilitate trust building and the every-day socialisation of ideas among the university leadership and faculty members (Trondal 2004). Consequently, large-scale universities like the University of Oslo might have less possibility for the co-evolvement of H1 and H2 than small universities like UoA.

Secondly, universities that are old and strongly institutionalised might have weaker potential than young and less institutionalised universities to adapt flexibly to new opportunities and challenges presented by faculty members. Organisation literature assume a positive correlation between the age of organisations, their degrees of institutionalisation, and their flexibility to adapt to exogenous and endogenous possibilities and constraints (March, Schulz and Zhou 2000: 78). Universities that are strongly institutionalised may have well established procedures and logics of how things should be done. By contrast, young and less institutionalised universities might have more leeway for adapting to endogenous possibilities offered by faculty members. Thus, the potential for collaboration between research groups and the leadership and thus for the co-evolvement of H1 and H2 might be greater at young universities.

Finally, the sheer (or even perceived) scientific excellence of faculty members and research groups might increase the potential for collaboration with the leadership. Successful research groups more easily attracts collaborative partners inside as well as outside universities than research groups perceived as failures (March 1999: 141). Research groups that are perceived as ‘winning teams’ within the university organisation might more easily gain positive attention from the university leadership and build mutual trust and networks than research groups without this aura of excellence. The GSIA case mentioned above is one eminent example. Formalised Centres of Excellence within university organisations might have stronger potential for collaboration with the university leadership than faculty members without such formalised centres of excellence. These three conditioning variables represent no exhaustive list, but do suggest some key conditions under which the internationalisation of research results from collaborative efforts within university organisations.
References


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