CAREERS AND ACADEMIC RESEARCH COLLABORATIONS: AN INDUCTIVE PROCESS FRAMEWORK FOR UNDERSTANDING SUCCESSFUL COLLABORATIONS

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We use a two stage process to inductively develop a framework to understand the mechanisms that influence academic research collaborations. First, we draw on the research collaboration experiences of three distinguished careers researchers to develop a process framework. The framework outlines the phases for the project from initiation through to completion highlighting the relevant factors for each phase such as collaborator motivations, nature and scope of the project, roles and activities as well as project outcomes. Two sets of factors emerged as affecting the phases of collaboration: 1) collaborative context and 2) interpersonal collaborative processes. Context refers to the resources, support and climate in which the collaboration occurs, while interpersonal collaborative processes refer to communication, trust, and attraction among collaborators. The second stage of the investigation sought the collaborative experiences from another eight research collaborators. The collaborators were diverse – residing in five different countries and at different stages in their careers. Their descriptions provide some qualitative evidence for the framework. The framework provides concrete suggestions for how to build, and maintain, academic collaborative relationships. Implications and questions for further research into the collaborative process and context are also provided.

Key words: academic collaboration, career success, career stages, career development

Introduction

Research is one of the fundamental activities that academics engage in; however, very little is known about the mechanisms which facilitate successful research collaborations. The purpose of this paper is to elaborate on what makes professoriate research collaborations successful. To this end we hope to stimulate discussion and research in this underdeveloped area.

Hofstede (1993) called into contention the question of whether U.S. theories apply across the globe. Similarly, Rousseau and Fried (2001, p. 1) note that organizational research is becoming more international, “giving rise to
challenges in transporting social science models from one society to another.” Fiscal constraints and changes to research funding (Maslen, 2002; Brew, 2000), increased pressures for publication output (Altbach, 1995; Wilson, 2001), and internationalization (Altbach & Lewis, 1996) have each helped to create an environment where there is potentially a greater push towards collaborative efforts of academics at all career stages. For these reasons it is important to investigate the factors that lead to successful collaborations.

This paper is divided into three sections. In the first section we present an inductive framework based on conversations with three distinguished careers researchers. We relate these observations to the collaboration literature and develop a framework for understanding collaborative research. Second, we interrogate the framework in more depth by interviewing eight academics about their successful research collaborations. Third, we discuss the implications for academic careers and professoriate collaborations more generally. To this end the current paper seeks to shed light on an underdeveloped area of research, by asking the following question - What makes research collaboration successful in academia?

**Framework Overview**

Previous work in this domain has provided interesting and worthwhile insights into the collaboration process (see Frost & Taylor, 1996). This prior work involved an examination of three middle-career narratives and found that academics collaborate for synergistic reasons as well as to motivate and to provide satisfying and enjoyable interactions. However, it is unclear to us whether in fact collaboration is solely a mid career activity and further work is required to investigate the nature of collaboration across all stages of the career. Other researchers who have focused on collaboration within academic contexts have focused specifically on international (Peterson, 2001, Stead & Harrington, 2000), cross-cultural (Easterby-Smith & Malina, 1999), and cross-profession collaborations. Most of these papers have focused on why these types of collaborations are useful.

In a recent empirical piece Amabile, Patterson, Mueller, Wojcik, Obomirok, Marsh and Kramer (2001) provide a case analysis of an academic-practitioner collaboration. The found that determinants of collaborative success include three broad categories: collaborative team characteristics, collaborative environment characteristics, and collaboration processes. Reflecting on their findings, there are commonalities between Amabile et al.’s., (2001) work and our own. However, our paper extends their work by building a process framework and explaining the nature of the relationships between collaboration phases, contextual factors and interpersonal collaborative processes and their effects on career success and career-related outcomes at all stages of the academic career.

In order to assess the effectiveness of collaborations it is important to determine what makes a successful collaboration. Hinings and Greenwood’s (1996, p. 234) account of their collaboration (some 22 years in duration) show that there are two types of outcomes, “first there have to be academic outcomes, publications that not only make some minimal impact on the field, but that we see as stronger than anything we could do individually. Second, there have to be personal outcomes enjoyment in working together. We have experienced both of these.” Our definition is broader than that of Hinings and Greenwood as we attempt to also account for the learning that occurs during the collaborative process. Thus, we define success in collaborations as having three dimensions: (1) objective outcomes (publications, reports and presentations), (2) subjective outcomes (satisfaction with the collaborative experience, enhanced self-efficacy and self-confidence) and (3) learning from the other collaborators. Learning may include broadening of one’s content knowledge and knowledge about the process of research through to the learning of specific skills such as report writing and new data analysis techniques.

While the professoriate is part of an increasingly international profession, and universities worldwide stem from a common European heritage, there are important national variations (Altbach & Lewis, 1996). For this
reason we heed Rousseau and Fried’s (2001) call for contextualization in organizational research, especially given that we examine collaborations both within and across countries. Our efforts to account for context also address Amabile et al.’s (2001) concern that, by and large, researchers have not considered the effects of institutional contexts that surround collaborators. Our framework attempts to capture the contextual forces beyond the collaborative phases and interpersonal processes that influence collaborative efforts. Figure 1 outlines the contextual factors considered relevant to research collaboration, namely, institutional support, resources and climate (both national and institutional). These are discussed in more detail next.

In Frost and Stablein’s (1992, p. 253) book titled “Doing exemplary research” they highlight the fact that there “are many actors involved in a given research venture.” Institutional support may come from faculty members supporting collaborative efforts (e.g., by reviewing and editing work or by introducing colleagues to potential collaborators) as well as information technology staff (e.g., assisting with virtual communication between collaborators, installing software packages that other collaborators use) and from administrative staff (e.g., faxing documents to collaborators at different institutions or word processing manuscripts). Identifying these types of support indicates that collaborations do not occur in isolation from the broader professoriate community. Beyond the collaborative team, other colleagues can play different types of roles: supporters, mentors, critics, and interpreters (of reviewers’ reports) (de Janasz and Sullivan, in press). These support roles are integral to many collaborative efforts being successful.

The major resource affecting collaboration is funding. For example, the type and nature of financial support effects the scope of the project by prescribing, or constraining, the duration one has to collect data and fulfill the granting body’s requirements. It is no surprise then that, Hinings and Greenwood (1996) note that their collaboration was in part due to the availability of a very substantial sum of funding. Other collaborators report that funding can be the bane of the project. For example, Hickson (1988, p. 114) in telling his collaboration story explains that he and his colleague “spent one quarter of their available time and attention not on research but on applying for money.” Moreover, the role that different collaborators engage in, is, in part, determined by who secures the research funding. For example, if funding comes primarily from one’s own university it might require that academic to be the project leader (at least on paper).

The third contextual factor is climate. Climate relates to factors such as national differences in academic career processes and institutional strategies regarding collaborative efforts. These factors can shape the nature of collaborations and also identify the reasons for differences in collaboration across national boundaries and different universities in the same country. Within most countries there are differences across universities based on whether they are research-oriented or teaching-oriented. Haas (1996) comments that in the United States academic research specialists tend to teach fewer and smaller courses and more advanced-level courses, allowing more time and energy to be expended on research. Altbach and Lewis (1996) found considerable support for international research exchange among academics. More than three-quarters of respondents in most countries indicated that contacts with scholars in other countries are important for their professional work. In contrast with other countries United States academics make much less effort to conduct international collaborative research (Haas, 1996). Haas cautiously suggests that this might be, in part, because of institutional and funding pressures but also because U.S. academics have a “we know what is best…come learn from us” mindset. These findings suggest that there are differences in collaboration orientation both within and across different countries.

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Figure 1
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Having accounted for contextual factors we suggest that there are some specific collaborative phases that research collaborations cycle through, that influence the success of the collaboration. The phases...
are (1) initiation of the project which focuses on the motivations for being a part of a collaborative effort, (2) clarification of the nature and type of research project (3) project implementation which emphasizes the specific roles individuals play and (4) project completion which includes an evaluation of the outcomes and the likelihood that collaborators will work together in the future. In addition to these phases, are the interpersonal processes for managing the tasks as well as the social aspects of the working relationship. These factors are consistent with Amabile et al. (2001) notion of collaborative team characteristics and processes. Let’s examine each of these in more depth.

The initiation phase of the project focuses on the motivation or reasons for engaging in collaboration and is central to its success. Our discussion with the careers research experts suggested that their main motivations for collaborating could be distilled into two categories: instrumental and intrinsic. Instrumental rationales included teaming up with another because of complimentary skills, specific knowledge, unique data access opportunities, and to boost their resumes for promotion or tenure decisions. The stake individuals have in the project also acts to propel the project forward and those with a higher stake tend to lead the project. More intrinsically motivated reasons were about the enjoyment of working with another person and building long term relationships or friendships. Both reasons were given for working on the same collaboration, indicating that they are not mutually exclusive.

The second phase, clarifying the project, relates to the nature and type of collaborative project. At this phase the researchers make clear aspects such as the duration of the project, the scope, number of collaborators required and whether there are clear goals associated with the collaboration. It was apparent from the experiences reported for the current paper that the collaboration effort floundered without a clear set of research goals. Our experts observed that in some instances the desire to work with others was so overriding that not enough attention was paid to the substance of the collaboration and as a result the project collapsed or never really commenced.

The third collaboration phase is concerned with the implementation of the project. The emphasis here is on the roles individuals play in the collaboration. For example, a Ph.D. student and a senior faculty member (perhaps their advisor but not necessarily) will collaborate such that the primary relationship is that of mentor and protégé. Alternatively, collaborators of a similar career stage may take a more collegial approach to undertaking research. In the former role set there is a reasonably high level of dependence, while the latter focuses on carrying out research tasks and activities independently and working from a complementary skills base. There is also the case for senior academics brokering collaborations but having only minimal involvement in the actual research process. To this end the senior academic plays a sponsor role in the collaboration. These kinds of roles are consistent with Dalton, Thompson and Price’s (1977) four stages of professional careers: apprentice, colleague, mentor and sponsor. Dalton et al.’s, approach, therefore, provides a useful frame for understanding the different roles individual’s play in the collaborative process as well as the notion of developing a professorial network across one’s career (de Janasz & Sullivan, in press). However, we suggest that, within the research collaboration, individuals may carry out varied roles across their careers that are more fluid than Dalton et al.’s, stage approach.

The final component in Figure 1 relates to the interpersonal processes among collaborators. Interpersonal processes include factors such as communication, trust, and attraction. To provide an example of how interpersonal mechanisms influence the research process the factor of trust will be expanded upon. Conceptually trust can be defined as the willingness of one to be vulnerable to the actions of another based on the expectation that the other will perform a particular action regardless of your ability to control or manage that person (Mayer, Davis & Schoorman, 1995). The extent to which collaborators feel that they can trust each other is important to them being able to give constructive feedback. Trust may be especially important in manuscript preparation.
phase of the collaboration but also plays a role during the initial stages of the project. Cognitive trust or reliability appears important as does emotional trust – the expression of genuine care and concern (McAllister, 1995).

Trust may act both directly and indirectly in leading to successful outcomes. Dirks (1999) argued that interpersonal trust acts to influence team performance indirectly by channeling members’ energy toward the collaborative goal. In the framework we suggest that there are reciprocal relationships among the collaborative phases and interpersonal processes.

**Evidence**

To help further develop our conceptualizations we also sought experiences from eight more academics, who ranged in career stage and resided in Australia, Canada, United States, Denmark and Sweden. We enlisted people we knew who had been involved in successful collaborations. They were contacted by e-mail and asked to describe, in detail, a successful research collaboration experience. The outcomes of their collaborations had significant, yet distinct, effects on the perceptions of their career success as well as their perceptions of the success of their collaboration. The collaborations varied in terms of content, length of time collaborating (ranging from six months to 14 years) as well as the number of co-collaborators (between two and four). A number of consistent themes emerged from their collaboration experiences; however, variations were also evident. In the next section we examine these themes and variations as they relate to the framework described earlier.

**The Significance of Context**

The first striking difference among researchers was the differences across national boundaries. Countries like Sweden, Denmark, and Australia do not have a formal tenure process like that in North America (Canada and the United States). This led to different rationales for undertaking collaboration as well as influencing the institutional climate and support for collaboration. Even though some countries do not have formal tenure processes it became apparent that collaborations (and their outcomes) were seen as important for career progression such as promotion, and permanent faculty positions. For example, “working in a small University in a small country, it’s a must. But even so, in general I believe research benefits from being done in teams/collaborations, given you define clearly and agree on the aims and terms from the start.” “We don’t have the tenure system in my country. But obviously coordinating this project (as well as others) facilitates my chances of getting promotion.” Another notes that in terms of outcomes from her collaboration that “it was one of the things which helped me get promoted.” One of the North American collaborators noted that a tier-one publication is “a plus for tenureship”.

It became apparent that some universities encouraged collaborations while others were indifferent. For example, “We’re encouraged to work internationally and supported in doing so. Also, my institution has a good reputation internationally, which probably plays a role.” “It helps when my faculty does not emphasize single-authorship”. “The collaboration was not explicitly encouraged, but nor was there any discouragement.”

These comments suggest that institutional factors, as well as national differences, in promotion and tenure processes do affect the collaboration process. The issue of research-oriented universities was apparent in some of the collaborators descriptions, for example, “the university was concerned about junior (tenured) faculty becoming successful, established researchers.”

Support mechanisms included computers, graduate assistants, as well as other faculty reading and editing manuscripts. For example, “my statistical analysis required a large computational capacity. Several files are 30 mega bytes large. At that time many of the PCs in the department could not handle the computation. So I sought the permission of other faculty members and Ph.D. students to use their computers at night.” As far as faculty support is concerned only a couple of collaborators reported other faculty (beyond the collaboration) providing feedback on manuscripts. The collaborator’s observations suggest that context is
significant to the process and outcomes of collaborations and that, as researchers, we are not an island unto ourselves.

**Collaboration Phases**

**Project Initiation -- Motivations**

As mentioned earlier, researchers collaborated for similar reasons. These included building on complimentary skills “I’m good at conceiving a project; he’s a more prolific writer.” Another collaborator observed, “I take a very micro perspective whereas she takes a macro perspective. I am very good at research methods and she is very good at theorizing.” It is also noteworthy that some of the respondents had similar skills but because of the size and complexity of the project it could not be completed single handedly. Another common theme was enjoyment, “For the fun of working together”, “we wanted to work together, because we enjoy each others company and respect the work of the other person.” Instrumental reasons also played a role, publications, presentations, tenureship and promotion were all cited by interviewees as reasons for engaging in collaboration.

In terms of variations, one noted that he collaborated because of his previous success working with the same colleague. Another suggested that it was a “mechanism for getting to know colleagues better.” Only two of the eight respondents appeared to have no previous personal relationship with their co-collaborators.

Reflecting on the framework, it appears that both instrumental and intrinsic reasons for engaging in collaborations were evident. For some the stakes were high reporting that they wanted to get a tier one publication, so sought out a collaborator that had been successful in the past and had expert knowledge in the research area. Others seemed less outcome focused (admittedly they were post tenure and promotion) and focused on their interest in the topic and working with each other to solve a particular research problem.

**Clarification -- The nature and type of collaborative project**

The types and nature of the collaborations fell into three categories: 1) same institution and same discipline (three projects), 2) cross-institutional and same discipline (two projects), and 3) cross-institutional and cross-discipline (three projects). On average collaborations appeared to last three years (range = 6 months to 14 years). However, a couple of the researchers had worked intermittently with each other over a period of time. The nature of the project required some of the respondents to have more than one collaborator, especially if it was a comparative study across nations.

**Implementation -- Collaborator Roles**

While the roles of individuals within the project were sometimes clearly articulated at the outset with firm deadlines and work plans, others noted that the roles were more fluid and emergent. Roles, work load structuring, and processes were in part a function of the size, complexity and nature of the project. For example, “we were very systematic in our co-ordination from the very beginning. We brought in a new doctoral student and involved her in the research. We conducted regular meetings – and took minutes! It was one of the most organized research projects I’ve ever been involved with. I think we were driven to be very clear and organized because the project was so big and unwieldy.” “We set firm deadlines and clearly delineated roles and responsibilities with respect to every specific task.” This quote is in contrast to the approach that other collaborators mentioned, for example, “we meet every so often – irregularly, and usually when it’s dawned on us that there’s some deadline looming – to talk it through. In between times we talk by phone and e-mail.”

Interestingly, the descriptions of the collaborators experiences are consistent with Dalton et al.s., (1977) roles across an academic career: apprentice, colleague, mentor and to a lesser extent sponsor. A possible reason why the sponsor role was less evident is that a sponsor tends to orchestrate the research rather than engage in it. It is plausible that the respondents selected to report on successful collaborations in which they had been more active. It is also noteworthy that none of the respondents were near the retirement phase of their career, and as such may not yet be in positions
where they can broker research collaborations and programs.

Further examination of the collaborative tasks and activities suggest that time was an important factor in who did what and when. Those who had large, complex projects seemed to be much more structured in their project activities and deadlines.

Completion – Evaluation of Success

There was considerable evidence for how our collaborators rated the success of their projects. Most noted that their projects had been successful in enhancing career success either directly or indirectly. For example, “we have four joint authored papers that emerged from this project. And it helped me move away from an experimental paradigm into more field work.” We got “a tier one journal publication.” “In terms of my own career success it played an extremely big role. It made my Ph.D. project better and expanded my methodological range and competencies.” “This project has helped to develop a research stream and enhanced my academic reputation, and that of my institution.” However, the narratives were not all positive. “It was a qualified success. We got the data we sought, we won a best paper prize at a conference, we got some ok publications but we missed out on cracking a top tier journal after two rewrites.” The comments suggest that, for most, they achieved the goals that were originally set out in the project.

For other researchers, promotion (or tenure) did not seem to play a role, primarily because they were already tenured. “both X and I were already tenured, so we were at a career stage where we were willing to take risks….One of the things that X brought to the project was a set of local contacts – she knew who to approach in the university for various types of support (financial and otherwise). For me, the project was a good opportunity to learn about my local environment and get to know my colleagues.” These comments provide evidence for the different types of collaborative outcomes – objective, subjective and learning. The comments also suggest that outcomes may be judged differently at different stages across the academic career.

Interpersonal Processes in Collaboration

Managing the interpersonal processes with one’s collaborators is quite challenging (Amabile et al., 2001). A dominant theme that emerged from the collaborators experiences reported by our eight academics was the level of interpersonal attraction and liking for each other. In addition to this was the mutual respect for each others abilities and skills. Interpersonal attraction is an interesting finding because it is consistent with Byrne’s (1971) similarity-attraction paradigm. Based on the descriptions, most of the collaborators had complimentary skills sets. But we knew little about their values, attitudes and experiences, which may account for why the researchers were attracted to each other.

Interpersonal trust was also an important factor. Trust that the co-collaborator would execute their part of the project in a competent and timely manner was highlighted. As one collaborator notes “we wouldn’t have entered this project had we not trusted each other’s competence and willingness to contribute.” Trust and previous experience also played a role in the feedback process. “We had a very open-minded group of experienced people, who were able to distinguish professional from personal critique.” “I don’t think any negative feedback was involved until we actually got into the writing stage. I think initially we were reluctant to criticize each others writing – but once norms were established, and we saw that the criticism was making the paper better, it became easier to offer negative feedback.” By and large collaborators didn’t necessarily view interpersonal trust as a direct mechanism in fact it appeared to play more of an intervening role.

Conclusions

This note has outlined a preliminary framework for understanding the collaborative process among professoriate researchers. The framework is consistent with Amabile et al., (2001) conceptualizations about academic-practitioner collaborations. However, we concentrate on academic-academic collaborations and, therefore, examine more specific interrelationships that occur between context, collaborative phases and interpersonal process-
es. Moreover, we extend Frost and Taylor’s (1996) work by examining the collaborative process across all careers stages in academia.

Our evidence suggests that in understating the collaborative process one must account for the context in which the collaboration occurs, the motivation of the collaborators, the scope and nature of the project, the roles and activities undertaken, and interpersonal processes such as attraction, respect and trust. Researchers’ motivations for engaging in collaboration were both instrumental and intrinsic. Nonetheless, some collaborators were very focused on specific outcomes that aligned with objective career success indicators such as top tier publications. Others collaborated because of previous successes and the preference to work with others on complex projects.

Without a doubt there are several uncharted territories in this underdeveloped field of inquiry. We would like to leave the reader with a series of questions that are worthy of further investigation. To what extent is collaboration occurring? Is it primarily within university, within country or across countries? How does a teaching verses research orientation at universities influence collaborative arrangements? To what extent do personal relationships affect the collaboration process and is it simply a matter of interpersonal attraction that brings collaborators together? How do communication technologies assist collaborations? How do tenure and promotion clocks contribute to collaboration and how do they affect the types of projects academics undertake?

References


