I Never Promised You a Rose Garden:

when research questions ought to change

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Abstract

This chapter addresses a topic which is rarely discussed but is a common feature of field-based action research, namely whether and when research questions can legitimately change during the conduct of a study. We explore three common strategies for developing research questions before problematizing the assumption which these strategies share, namely that research questions are fixed at the outset and remain stable. We note that change can, does and indeed should occur in response to changes in the context within which the research is being conducted. Using an illustrative example of a longitudinal project, we identify refinement and reframing as two distinct types of research question development that might occur. Our conclusions suggest that greater transparency over when, in what circumstances and why researchers elect to change their research questions would be a healthy development for the field.

Introduction

Can research questions sometimes legitimately change over time during the conduct of field-based, longitudinal action research? If the answer to this question is yes, how and why might such change happen?

Management researchers have shown considerable interest in the generation of research questions (e.g. Alvesson & Sandberg, 2013), yet there has been almost no attention on how research questions might legitimately evolve over time. Indeed, in our view such evolution[1] frequently does happen but goes unreported.

In this chapter, we consider the case of an action research project that was addressing significant societal issues, to show how and why research questions might evolve. In this project the research questions changed multiple times for reasons beyond the control of the investigators. Through our review of this illustrative example, we open for discussion concerns which are often present beneath the surface of many research projects using this and other methodological approaches but which are rarely discussed in scholarly writing. We provide a foundation for our exploration below.

There can be little doubt that the field of organization and management research is experiencing a period of rapid change. Global growth in business schools has resulted in more scholars submitting to peer reviewed journals, and the established top-tier journals have experienced a "disproportional increase in the[ir] rejection rate" (Alvesson & Sandberg, 2013a: 127). For scholars adopting a qualitative approach to their research, Pratt argues that the "lack of consensus

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[1] Throughout this chapter, research questions are described as evolving in the sense that they are subject to a process of gradual development. This is distinct from the connotation of variation, selection and retention associated with evolution through, for example, natural selection.

around the evaluation criteria used for [qualitative] research means that it is difficult to publish" (2008: 482). Action research is even more difficult to publish in top-tier management journals; indicatively, only one formal action research paper (Lüscher & Lewis, 2008) has been published in such journals in recent years.

Amis and Silk contend that an assessment of research quality is "inseparable from the ontological and epistemological foundations of the research project" (2008: 457). In that spirit, this paper considers the case of action research. Using a specific action research project as an example, we examine processes through which researchers might (need to) develop and refine research questions in studies that are both field based (Czarniawska, 2014) and inductive (O'Gorman and MacIntosh, 2015). In doing so, we pay particular attention to the temporal dimensions of research questions and challenge some of the dominant orthodoxy relating to when, where and how research questions are established. Further, we also reflect upon the wider implications of an evolutionary perspective on research questions for research taking a different epistemological, ontological and methodological approach. This reflection has implications for the quality of action research and other types of field-based research projects.

The chapter is organized as follows. We first review contemporary ideas on the ways in which researchers identify and specify research questions in order to develop publishable research. We then present some historical foundations for why it has been considered so important to elaborate research questions completely before a study starts.

Following this, we focus on the development of research questions in the context of action research. In that context, we offer an illustration of a longitudinal

action research project aimed at delivering bilingual education in an elementary school. This case features key transitions where the empirical context shifted during the research process, thus requiring some evolution of the original research questions. Whilst such transitions may be exactly what one might expect when studying organizational change, they nonetheless introduce significant challenges in accomplishing publishable research.

Identifying and specifying appropriate research questions

For aspiring researchers, the ability to publish rests on overcoming what Ketokivi and Mantere describe as the challenge of "drawing theoretical conclusions from empirical data in a manner that is credible" (2010: 315). Research questions offer one narrative device linking theory and data and they are commonplace in written accounts of research. To meet the criteria for publication in top-tier journals, researchers must demonstrate that they are advancing knowledge by delivering a novel and worthwhile contribution. One approach for doing so is to pose a significant or "big" research question (Peng, 2004; Tsui, Zhao & Abrahamson, 2007). Implicitly, if not explicitly, such a question is posed at the outset of a study.

According to the extant literature, initial research questions are most often formulated by means of gap spotting (Alvesson and Sandberg, 2011) and somewhat less often by systematic literature reviews (Denyer and Tranfield, 2009). A third strategy for research question formulation entails counterfactual reasoning (Cornelissen & Durand, 2012) where researchers are encouraged to rethink base assumptions and reframe explanations by challenging orthodox ideas. This approach is considered most likely to lead to "big" questions. We summarize these strategies below and move on to problematize their underlying

assumptions.

Gap Spotting

In order to build a contribution, Alvesson and Sandberg argue that most scholars engage in gap-spotting, since this allows them to make the argument that they are contributing by "filling an important gap in the literature" (2011: 250; 2013b). (They note that even if assumption challenging underpinned the development of guiding research questions, the questions themselves are often presented as based on gap-spotting (Alvesson & Sandberg, 2013) thus introducing the notion of temporality.) Alvesson and Sandberg (2011: 249) acknowledge that gap-spotting rarely involves "a simple identification of obvious gaps in a given body of literature;" instead it is often a "complex" and "constructive" process. Nevertheless, they view gap-spotting as inherently narrow in what it may accomplish.

Systematic literature reviews

Systematic literature reviews are relatively common in fields like medicine and engineering, where core concepts can be clearly and consistently defined in ways which facilitate cross-study learning (Tranfield et al., 2003). In recent years, management scholars have embraced more structured approaches to reviewing the literature since such reviews help them to both locate their own work and identify points of difference from extant work (Rousseau & Gunia, 2015). Indeed, it would be unusual now for a published literature review in a journal such as the *International Journal of Management Reviews* to omit a description of the stages and processes by which papers were identified, categorized and either included or excluded.

Counterfactual reasoning

Some scholars develop research questions by moving beyond the extension or corroboration of existing theories to question the very foundation of existing explanatory frameworks. By pursuing alternative explanations that may challenge or even break existing concepts, constructs, assumptions and relationships, researchers extend theoretical understanding in new ways (Durand and Vaara, 2009; Folger and Turillo, 1999). The imaginative use of 'what if' questions (Cornelissen & Durand, 2014) might lead researchers to understand the phenomena under examination anew.

Notably, each of these three strategies – gap spotting, systematic literature reviews, and counterfactual reasoning - implicitly, if not explicitly - posits that research questions are established and fixed at the outset. Indeed, Alvesson and Sandberg (2013) suggest that the best approach to generating high quality research questions is to "deliberately and systematically identify and challenge the assumptions underlying the existing literature". This is done through "(1) identifying a domain of literature; (2) identifying and articulating the assumptions underlying this domain; (3) evaluating these; (4) developing an alternative assumption ground; (5) considering it in relation to its audience; and (6) evaluating the alternative assumption ground" (op cit: 56). There is no mention of the possibility or legitimacy of research question evolution. The focus is still on a fairly rational, linear and logical trajectory which starts with the literature, moves to the articulation of a research question and ends with the elaboration of a contribution that flows from answering the research question.

The importance of developing and changing research questions

But there is much more to the development of research questions, even initially, than is typically acknowledged in the literature, in part because gap spotting is so common and so accepted as a basis for research questions. Since the idea that research questions are "a beginning point for their research" (Agee, 2009: 431) is a taken-for-granted assumption (Alvesson & Sandberg, 2013), the evolution of research questions is rarely considered in depth. Scholarly articles typically spend very little time discussing research questions beyond the somewhat literature-led rhetorical strategy that questions flow from gaps, challenge assumptions, and/or build on systematic reviews.

This standard approach ignores the fact that the generation of appropriate research question(s) for particular phenomena, especially in field settings, is difficult. For instance, Leung and Lapum (2005: 3) described "the struggle to an apt research question (as) an arduous journey". Glick, Miller and Cardinal (2007: 818) added that in a field such as organizational behavior, "with weak paradigm development, individuals face tremendous uncertainty in choosing research questions and methods that will allow contributions in the published literature." This is the case regardless of whether the approach taken is based on gap-spotting, systematic review, or counterfactual reasoning. Further, there has typically been an expectation that research questions, once formally developed, must stay as they are. Not to do so is to raise ethical quandaries.

Approaches to social science research based on the scientific method typically follow Karl Popper's (1972; 2002) positivist philosophy. Popper argued that the first step in scientific research is generating a hypothesis, or, more precisely, a null hypothesis that can be tested and (hopefully) falsified. He believed

that, from a scientific perspective, at least, there is really no such thing as pure observation (Bannerjee et al., 2009). Further, it is not possible to "prove" a particular hypothesis. However, it is possible to show the likelihood of the null hypothesis being falsified.

Historically, the scientific method and especially the importance of testing and (possibly) falsifying a priori hypotheses have served as the foundation for most scholarly research in social science. It has also served as the foundation for ethical standards in social science research (e.g. Bakker et al., 2012; Sterba, 2006). The ethical standards built up around the scientific method have fostered the importance of determining a research question at the beginning of a research project and not changing this later.

Accordingly, it is deemed inappropriate to collect (primarily quantitative) data, run a number of statistical tests, see which hypotheses are supported by the data, and then describe the hypotheses as if they were formulated *before* data collection. This is sometimes referred to as a fishing expedition or as HARKing (hypothesizing after the results are known; Wasserman, 2013) and represents a clear ethical violation for many. This is the case for good reason. Running a large number of statistical tests (especially if these are exploratory rather than confirmatory; Wasserman, 2013) increases the likelihood of type I error rates (Simmons et al., 2011; Bakker et al., 2012). The American Statistical Association states that "Running multiple tests on the same data set at the same stage of an analysis increases the chances of obtaining at least one invalid result. Selecting the one 'significant' result from a multiplicity of parallel tests poses a grave risk of reaching incorrect conclusions. Failure to disclose the full extent of tests and their results in such a case would be highly misleading" (Committee on Professional

Ethics, 1999, p. A-8). Consistent with this approach, Institutional Review Boards typically ask for a specification of hypotheses at the time of the initial proposal.

Perhaps because of the many ways this pattern is reinforced, establishing a research question and hypotheses prior to data collection, and then leaving these largely untouched thereafter, has become an engrained expectation for many scholars. As Stephens, Barton and Haslett (2009, p. 466) suggested, the steps of positivist approaches, "observation, hypothesis, experimentation and generalization (have become) indoctrinated into all particular methods of science."

If the assertion of indoctrination is accurate, it is perhaps unsurprising that there is little discussion of the processes through which research questions are initially constructed, there is even less discussion of the processes through which such questions may (legitimately and ethically) evolve once research has begun. There are many possible motivations for this. Agee (2009), for example, argues that researchers often develop initial, fixed, research questions for no other reason than that funders or potential collaborators expect to see them. In our experience doctoral committees often expect this, and many journal editors and reviewers share this expectation. Even Alvesson and Sandberg (2013b: 43), whose entire book is devoted to constructing research questions, say very little about how such questions might evolve, with the exception of recognizing that sometimes "there is no clear initial research question or ... there are gradually or abruptly changing research objectives that perhaps last for several years ". The lack of recognition of change in research questions remains true even in volumes that speak formally about qualitative, field-based research (cf. Given, 2008) which flows from very different epistemological and ontological origins.

The positive consequences of allowing room for research questions to evolve

In our view, the lack of explicit consideration of evolution of research question significantly limits possibilities for learning from research projects, especially those that are field based. This is so because the very word research carries subtle but significant connotations.

First, research is defined as the systematic study of a topic to enable the researcher to establish new conclusions (from the Oxford English Dictionary). In everyday usage, this emphasis on *newness* relates to our own academic sense of the demand placed by doctoral committees and journal editors alike for novel theoretical contributions. Hence, a research question may be held as the framing of some, as yet unknown, aspect of a situation, data set or body of theory.

In addition, empirical researchers working in the field of management and organization are familiar with a second and co-existing connotation of research. This occurs whenever we familiarize ourselves with a new empirical context. As researchers entering the field, we face the challenge of grappling with things which are at once "strange, irregular and inexplicit" (Geertz, 1973: 10). As we establish how organizational processes, incentive structures, reporting lines, decision-making processes and the like operate, or at least appear to operate, or as we study the processes enacted by those who do these things, we are researching (Evered & Louis, 1981). The subtle connotation of research here is the enmeshed sense of finding out about, orienting ourselves within, or becoming acculturated to a new setting. This implies the possibility, and indeed the likelihood, that as scholars become acculturated in a new setting they may learn

that research questions formulated without respect to this understanding may no longer be suited for use in situ.

Mezias and Starbuck (2003) describe an example of such discovery in a study exploring managerial perceptions of variables that academics claim are important. Through a study that lasted over two decades, the researchers showed how they learned over time that the research questions had to keep changing so as to accomplish their initial purpose. To elaborate, as the study progressed and the researchers learned more and more about the settings in which they were working, the research questions themselves evolved. The initial research questions focused on variables found in academic prescriptions, e.g. about organization design and strategic planning, and were very quantitatively oriented. However, the researchers found that some variables discussed in the management literature were very salient to the managers while other variables made no sense to them. Hence they had to reformulate the research questions in ways that did make sense. In other words, their study describes an odyssey of discovering which research questions (and data gathering approaches based on them) were meaningful for their population at particular points in time, recognizing that these may, very appropriately, require change over time.

Action Research and the Development of Research Questions

There is also growing recognition that research questions may be particularly likely to evolve during field-based action research projects, especially when some of those involved, including actors in the setting, have a personal stake in the projects (e.g. Bartunek, 2008) and the settings themselves are volatile (Kacen & Chaitin, 2006). While the traditional, theory-led approaches to research

see research questions "set and solved in a context governed by the, largely academic, interests of a specific community" (Gibbons et al., 1994: 3), engaged forms of research (Van de Ven, 2007) such as action research involve a considerable level of dialogue between those in a particular field-based situation and those hoping to study that situation in a way that contributes to improving the situation as much as it focuses on making a conceptual contribution. Such situations are typically very complex; as such, it is difficult to conduct what scholars operating from a positivist epistemology consider truly rigorous, well controlled research. Further, in action research, as with other forms of field-based research, neither researchers nor research participants may have complete control over events that affect the research. This likely affects the formulation and possible reformulation of research questions.

However, even in action research and similar forms of engaged research, consistent with the approach followed by positivistic research, the default position regarding the timing of research question development appears to favour fixing the question early. For instance, Bartunek and Louis (1996) describe the framing of the research question as one of the earliest stages in insider/outsider collaborative research. Similarly, Carney, Dundon & Léime (2012) argue that research questions should be rigorously determined in advance, even in community-based action research projects, in part to enable replicability. Further, Van de Ven states that "Priorities need to be established by formulating a specific question that will be addressed in a research project … The research question not only narrows the focus of a study to manageable dimensions, it also establishes a pragmatic criterion for evaluating the relevance and quality of a research project" (2007: 88).

In contrast, we believe that it is reasonable to assume that research questions may, and perhaps should, evolve over time in field-based settings such as those in which action research is typically carried out. Cordner and Brown (2013) argue, for example, that field-based research in situations where there are environmental health threats evokes "moments" of scientific uncertainty (p. 470), including in the choice of research questions, and that this in turn affects ethical concerns. They note (p. 478) that "this moment of uncertainty leads to ethical tensions which can be unresolved if formal ethical guidelines lag behind the development of novel methods or do not adequately prepare researchers or practitioners to deal with the relevance of findings for nonscientific purposes." In other words, they are indicating that ethical guidelines have not evolved in ways that match necessitated changes in the development of research questions in such settings. Guidelines designed for hypothesis testing research are inadequate for field-based action research studies.

Likewise, Sasco et al. (2010: 7), discussing the challenge of AIDS-Related malignancies in sub-Saharan Africa, stated that "By collecting and harmonizing data from many HIV/AIDS cohorts from Western and Southern countries, this initiative will address unique and evolving research questions in HIV/AIDS such as its association with malignancies currently unanswerable by single cohorts." Further, Moschitz and Home (2014: 400), in a study of the challenges of innovation for sustainable agriculture and rural development, critiqued academic researchers who had "defined the research questions at the time of proposal writing instead of jointly developing relevant questions at the local level". They observed that social realities change and project priorities shift throughout field-based studies like this.

The argument for the evolution of research questions has also been made in qualitative field research. For instance, Marshall and Rossman (1999: 23) argued that "In qualitative inquiry, the proposal should reserve some flexibility in research questions and design because these are likely to change during the research process". Similarly, Paulsen (2009: 510) noted that with regard to ethnography, a research method that like action research focuses on addressing the experiences of participants in their own settings, "rigid adherence to research questions predicated on advance knowledge can easily prohibit investigation of what we later find to be most interesting. In some instances, emphases change entirely as new and interesting dimensions of a scene reveal themselves".   Also, Van den Hoonaard and van den Hoonard (2008, p. 186) hint at the importance of delay in setting the research question when using grounded theory methodologies, noting that in such methodologies it is not unusual and sometimes more appropriate for a research question not to be settled on until after at least some data gathering. Weinberg's ethnographic study that began with the straightforward query: "Why are the nurses crying", evolved into a book-length study of money-driven hospitals (2003).

Evolution of research questions and the quality of action research

While some of the extant scholarship that we have described recognizes that research questions can change, what is not clear is how and why such changes occur. For instance, studies like those of Sasco et al. (2010) and Moschitz and Home (2014) focus on the fact that the questions do shift, rather than an exploration of the factors that lead to such shifts, or what the implications of the shifts may be for the ability to carry out the research in some volatile settings. For

instance, it may be that for accomplishing high quality action research, especially collaborative action research, research questions should be flexible by necessity.

To elaborate, while what quality means in action research is not as clearly specified as in approaches to positivist research, it has been recognized that high quality action research requires flexibility and evolution. Reason (2006: 197) claimed, for example, that

> Good action research emerges over time in an evolutionary and developmental process, as individuals learn skills of inquiry, as communities of inquiry develop, as understanding of the issues deepens, and as practice grows and shifts changes over time. Emergence means that the questions may change, the relationships may change, the purposes may change, and what is important may change.

In a similar vein, Coghlan (2011: 71) argued, based on Shani and Pasmore (1985) that

> [G]ood action research may be judged in terms of … four factors: how the context is assessed; the quality of collaborative relationships between researchers and members of the system; the quality of the action research process itself as cycles of action and reflection are enacted and that the dual outcomes reflect some level of sustainability (human, social, economic, and ecological); and the development of self-help and competencies out of the action and the creation of new knowledge from the inquiry.

Coghlan and Shani (2014: 534) build on the discussion of these four factors and add that "Leading an action research project in the present tense requires simultaneous attention throughout the project to all four factors. For example, capturing a change in the action research project course due to an unexpected change in the company strategy due to a new innovation or a strategic opportunity and how it is impacting the emphasis and/or level of engagement in the inquiry process and/or its direction generates critical insights of relevance to both the system and scientific community."

In other words, in action research settings, while an initial focus may be on developing research questions through challenging assumptions, gap-spotting or a systematic review, the process of collaborating with others (typically actors within the setting) in a specific field situation requires an openness to how the setting itself, as well as collaboration with others there, may require some reformulations of research questions in response to ways in which the situation changes. This openness to the evolution of research questions is very different from "HARKing". High quality action research needs to pay attention to possible shifts in settings, as these may affect the appropriateness of initially formulated research questions. High quality action research also needs to foster relationships between outside researchers and insider members of a setting, relationships of "trust, concern for other, equality of influence", among other characteristics (Coghlan and Shani, 2014: 525). Such relationships may also require a capacity to adapt the focus of particular studies, especially as insider members of the setting have knowledge external researchers do not..

While we have made this point abstractly, it is important to explore how such evolution might take place in a specific field-based action research setting.

Fleshing this out will add to the understanding of what shifts in research questions might mean in practice in field studies jointly conducted by academics and practitioners. To that end, we present a case that conveys well what may happen to research questions in action research projects in a setting which is itself volatile.

Bi-Lingual Education in the Lomond School

The research study that we describe here is a part of a larger study of a Joint Partnership Program (JPP) between a School of Education (SOE) in a major university in United States and the public schools (PS) in the neighborhoods near the SOE. Two of the authors of this paper, Jean and Mamta, conducted an assessment of this program.

Ten years prior to this assessment, the then Dean of the SOE had received a substantial gift from an anonymous donor to establish a JPP that would support faculty and students from the education faculty to partner with teaching staff from local public schools in action research projects that lasted up to three years. At the time of the assessment was conducted, 16 such projects had been implemented. They had addressed topics as diverse as anti-racism training in urban schools, improving urban children's self-esteem and self-confidence, implementation and evaluation of a comprehensive health curriculum in a school-community collaborative, and engaging, motivating, and increasing elementary school students' interest in science and engineering while improving conceptual understanding of science and their ability to write and communicate with others.

The particular action research project we describe here aimed to foster bilingual education in Portuguese and English at the Lomond School (a school enrolling students from kindergarten through grade 6). The materials we present below are based on the data collected for the assessment. These included the

initial proposal for the project, interim project reports submitted during and after the project's first, second and third years, publications generated from the project, and, finally interviews we conducted with three participants after the project was completed.   The interviewees were the principal investigator, Professor Walters, one of the Lomond School (LS) bilingual teachers, and an SOE associate, a doctoral student who was working with Professor Walters. Table 1 summarizes key information related to the project.

Insert Table 1 about here

Context of the study. Within the state in which this particular action research project took place, there was a law at the time that wherever there were: *"20 or more enrolled children of the same language group who cannot do ordinary class work in English and whose native language is not English and whose parents do not speak English…schools must teach all required courses in both English and the child's native language."*

There had been Portuguese-speaking students at the Lomond School for several years, but that year, there was a sudden increase in the number of these students. This increase triggered a need for the school to implement bilingual education – in Portuguese and English - much more fully.

Formulation of the initial goal. The principal of the Lomond School (Ms. Wachter) approached Professor Walters, of the SOE, with a request for help with the bilingual program. Professor Walters was known for her expertise in bilingual education; she had engaged in this work for decades and had written multiple articles and books on creating quality bilingual education. In response to the

request from Ms. Wachter, Professor Walters applied for, and received, a three year JPP grant to guide program development in bilingual education at the Lomond School.

Ultimately, the project team included Professor Walters other SOE faculty specializing in bilingual education, doctoral students (referred to here as SOE associates), Lomond School teachers, para-professionals, and Ms. Wachter, the principal. Professor Walters was the Principal Investigator (PI) and led the project; her recent work on bilingual education was used as "study material" for the teachers and others involved in the project.

Initial research question(s) and purpose. The research team's initial goal was to develop and study the development of a new Portuguese Bilingual Education program. As stated in the proposal that Professor Walters submitted to the SOE for a JPP grant, the initial research objectives of the project focused on the following:

1) *to develop "portfolios documenting the characteristics of the bilingual education program as well as the school and community context;"*
2) *to investigate the effects of the creation of these program portfolios on the quality of the bilingual program with respect to school goals, relation to community, curriculum, instruction, and student monitoring*
3) *to produce an entry for the national data base - Bilingual Education: Portraits of Success - for programs that qualify school, curriculum, instructional and assessment practices.*

Though framed as research objectives rather than questions, the clear implication was that the study was asking: "***what are the characteristics of effective bi-lingual education?"*** Professor Walters and the project team initially proposed to focus on the Portuguese Bilingual Education program at the Lomond School in the first year and include other public schools in years 2 and 3 of the grant. Further, as they stated in the initial proposal submitted to the SOE, they

planned "to engage in ongoing inquiry with respect to what the program has as well as what further work is needed" for effective bilingual education.

In terms of the typical methods for developing research questions, the research question described here included components of both gap-spotting and a systematic literature review.   It was certainly aimed at determining characteristics of effective bilingual education in a new setting, thus filling in a particular gap in the literature. In addition, it was based on a systematic development of a literature on this topic that went back over multiple decades and to which Professor Walters had contributed significantly. To elaborate, the SOE had collaborated with other universities and the National Association for Bilingual Education on a national "Portraits of Success" project that entailed studying successful bilingual programs. This action research project was expected to build on, and add to, this systematic body of literature – Portraits of success - by presenting new illustrations of what effective bilingual education entails.

How the project team worked to achieve the goals. To address these goals, Professor Walters met with the principal and the Lomond School teachers to understand the teachers' perspectives and needs. She also had formal meetings with the SOE associates every two weeks. The purpose of these meetings was to identify immediate goals and to plan. The SOE associates then visited the Lomond School and worked on the plan during the next week. Professor Walters also met with the Public School teachers on a regular basis. She, along with the SOE associates, prepared the agenda for each meeting; however, it was fluid and changed during the meetings depending upon the concerns raised by teachers. Teachers were also asked to complete selected readings from Professor Walters' book on bilingual education and to "bring in data from their classrooms (e.g.

samples of student work, instructional materials, daily schedules and self-observations) in order to enhance discussion" (Source: End of Year 1 report submitted to the SOE).

The SOE associates, along with Professor Walters, worked hand in hand with the Lomond School teachers. They visited the school regularly to observe the classes and then talked to the teachers about what they did and teaching strategies they could adopt in the classroom. In addition, Professor Walters and the SOE associates conducted professional development activities for the Lomond School teachers. As an SOE associate indicated in her interview, "One of the main issues of the bilingual program was that teachers were not trained to be bilingual teachers. Most of them ... learned how to teach in … Brazil…. They needed some training in terms of how to apply the skills learned in Brazil."

Additional activities undertaken in the first year. During the first year, all of those involved in the action research project (Lomond School teachers, paraprofessionals and students, Professor Walters and SOE associates) focused on the first two components of their goals, especially the gathering of information in the service of developing portfolios. Specifically, they focused on gathering information on what already existed in the bilingual program at the Lomond School. This included assessing the potential strengths of each teacher and paraprofessional at the school and collating relevant background information such as the language and country of origin of the students and families. They engaged school personnel in data gathering as well. For instance, a math teacher arranged for her students to survey the language and country of origin of the students at the Lomond School; the analysis of the information not only provided an input for the Portfolio but also raised the awareness of linguistic diversity

amongst mainstream teachers who taught only in English and who tended to be less in favor of bilingual education than those who taught in the bilingual program.

Similarly, the project team met on a regular basis, to discuss what they were learning about their students and families and what this implied about their language and instructional needs. For instance, they learned that the parents agreed with the teachers that the students should become both bilingual and bi-literate. Further, the team found that there was "a significant discrepancy in the amount of English and Portuguese used at each grade levels" (Source: End of Year 1 report submitted to the SOE). Given this parental preference, the team agreed to the specific goal of having a balanced amount of instruction in both languages with strong literacy development in the heritage language. The Lomond School teachers and their SOE collaborators then worked together to develop a comprehensive program of instruction for each grade level, creating and revising alternate models until "the team arrived at schedules that contained adequate instruction in each subject area and included an appropriate amount of instruction in both English and Portuguese" (source: End-year 1 report).

Note that this key focus was arrived at in collaboration with the Lomond School personnel *after* the SOE research team entered the field. Yet, it (appropriately) had an effect on what could and should be studied. An additional focus emerged in a similar way: "As the teachers reworked their instructional schedules, they became increasingly aware of how they could work and teach together to best take advantage of each other's strengths, both in terms of language and instruction" (source: End-year 1 report).

Finally, there was a parents night near the end of the school year in which the parents "enjoyed a performance of music and plays in Portuguese and English

organized by the bilingual and music teachers" Ms. Wachter, Professor Walters, and other teachers responded to the parents' questions about bilingual education. All in all, it was a busy first year, one in which a great deal of information was uncovered about bilingual education needs and in which plans were made to foster bilingual education.

Revising the research question(s) in the second year: Minor changes

In their JPP report at the end of the second year, the research team listed a somewhat revised research question: "*Does completing the information required in the nomination form of the Portraits of Success Project help a new program in making decisions about curriculum, instructional and assessment practices? Does it help program development?*" This question was clearly based on the learnings from the first year. These learnings had led to new activities the second year, and to at least one additional change in the original research question.

Minor changes and their impact on the project. As noted above, the original plan was to move to expand the scope of the project by incorporating a second school in the second year of the action research project. However, by the end of the first year, the team concluded that there was still "much to be done at the Lomond School" (Source: End of Year 1 report submitted to the SOE) and decided to focus only there.

There were developments in the project, some of which were based on changes happening in other parts of the school. For instance, as Professor Walters stated in her interview, the principal had to "reduce one of the mainstream classes." This freed up one of the teachers who joined the action research team as the literacy teacher; she "became an extraordinary force and brought the bridge

between the bilingual and the mainstream program" (Source: Interview with Professor Walters, Project PI).   In addition, the teachers' collaboration with each other increased.   The Lomond School teacher we interviewed commented "I believe it was the second year, when … we had combined classes but we used to switch. I would just go and teach English to this group and the other teacher would come and teach Portuguese for all subjects, especially literacy."

Further, the team made additional adjustments to the objectives of their research when it became apparent that "there was not a systematic approach from the school or the district to look at assessments of English and that was a very difficult issue for teachers" (Source: Interview with a doctoral student from SOE). As Professor Walters also stated in her interview, when the research team started asking questions about assessment, they "didn't seem to get any straight answers and the teachers didn't seem to know what the assessment policies were" (Source: Interview with Professor Walters, Project PI). Thus, whilst the focus in Year I had been mostly on learning about school and program characteristics, goals, personnel, curriculum, and choice of language for instruction, in Year II, the emphasis shifted to instruction and assessment, specifically concerning literacy, learning techniques and assessment strategies that would work well in a bilingual setting. Consequently, the team's research question was also adjusted to ascertain "**what role does assessment play in the effective delivery of bi-lingual education?"**

Further, the team recommended activities to determine the language and country of origin of the students at the school in each new academic year, something that had not been done in the past. Additionally, the team compiled a list of all the Portuguese books owned by the school and the age group(s) for which

they were appropriate. This led to the realization that these materials were inadequate, with notable omissions such as dictionaries. In the true spirit of action research, the JPP grant paid for some books to be purchased, and some SOE personnel sourced donations of textbooks currently used in Brazil. Native Portuguese speakers studying at the University where SOE was located volunteered as teaching aides (source: Mid-year two report).

Meantime, the population of Portuguese speakers in Lomond School's catchment area decreased during the second year, because the price of housing had risen in the geographic area served by the school.   The smaller number of students could potentially threaten the need for the bilingual program.

Revising the research question(s) in the third year: major changes

By the third year of the project the original intention was to focus primarily on assessment and the institutionalization of insights generated from the first two years of the study. This was an emergent focus, one that had arisen from discovery of the importance and complexity of assessment. In particular, the emphasis would be on working with the existing assessment tools, along with public school standards, to identify the best means of determining how well students in bilingual education in the Lomond School were doing. To accomplish this objective, the team also decided to create an informational brochure about the program for parents and a teacher's manual outlining basic decisions about teaching, scheduling, and assessment that could be given to all new staff. These began to be implemented.

Major change in the third year. During November of the third school year of the project, a ballot initiative was passed in the state that mandated instruction in English for all bilingual students with limited English ability. There would be

discontinuation of all bilingual education. Instead, the new law required *"public schools to educate …children who cannot do ordinary class work in English and who either do not speak English or whose native language is not English… through a sheltered English immersion program, normally not lasting more than one year. … Once a student was able to do regular schoolwork in English, the student would be transferred to an English language mainstream classroom"*

Impact of the new law on the action research project. This new legislation had a major impact on the research project, as well as bilingual education more broadly. The team was forced to abandon the objectives of developing and assessing the bilingual program altogether. As opposed to the work that had been planned for the third year of the project (i.e., assessment and the creation of mechanisms to institutionalize the program), the research team had little choice but change the focus of their study to reflect the new context in which they were working.

As result of the new law, the teachers who had been in the bilingual program could not teach in Portuguese anymore. This was distressing for the Lomond School teachers; As Professor Walters mentioned in her interview, "the teachers were crying half of the time because of the uncertainty and what was happening to them and to the children" (Source: Interview with Professor Walters, Project PI), Their distress motivated one of the PhD students from the SOE to do her dissertation on the impact of the legislation on teachers: "[My dissertation) started because…I could see the teachers struggling" (Source: Interview with SOE associate).

Following the legislative change, the focus of the project evolved from "improving a bilingual program characteristics to providing teachers with the

tools to teach bilingual students in a monolingual setting" and "what would teachers need the following year in order to still provide quality instruction to bilingual students" (Source: Interview with a an SOE associate). Professor Walters conducted workshops on "how they would have to switch their approach" and, along with her team, focused on preparing bilingual teachers to use Sheltered English strategies and to pursue English as a Second Language (ESL) certification (Source: Interview with Professor Walters, Project PI). In addition, they interviewed Lomond School teachers to investigate the information available to them in connection with these drastic curricular changes and to learn about the changes. Further, they developed a course where 13 bilingual teachers from two Boston Public schools (Lomond School and a second school) were trained on how to teach bilingual students using English as the only language of instruction.

The change in goals was evident from the publications coming out of the project. The presentations and papers focused not only on the process of development of bilingual program and assessment of bilingual program (i.e., papers based on work done in the first two years of the project), but also on topics such as the impact of the new law on Bilingual teachers.

While the team did not formally reframe the research question in their third year report, it was evident that the new legislation had a strong bearing on the activities carried out in conjunction with the project. These were very different than had been anticipated, and seemed to deal in particular with questions such as "*how do teachers involved in bilingual education respond to legislative changes regarding such education?*", as well as what kinds of supports might be available to help them.

To summarize, the action research project at the Lomond school involved a number of events in the course of its three years that resulted in the evolution of research questions and emphases. These did not evolve because findings supported other hypotheses better, but rather because circumstances made it impossible to continue asking the originally posed questions. We discuss the meanings and implications of this below.

Discussion

Our purpose of reviewing the bi-lingual education case study was to explore the evolution of research questions in the context of a longitudinal, highly engaged research relationship in a volatile field setting. As was evident, environmental events over which the external researchers had no control, as well as discoveries of actual circumstances at the Lomond School itself required changes in the research questions addressed. As an authoring team with experience of many such longitudinal research projects, the four of us believe that several of the characteristics of the bilingual education case recur across many such projects. In this section, we will discuss some observations about the processual dimensions of research questions which might otherwise remain hidden from view.

Extant explanations of research question formulation emphasize the importance of gap-spotting, systematic literature reviews and counterfactual reasoning. All three of these imply that the genesis of research questions lies in careful, prior examination of the literature in a way that is largely devoid of interactions with people involved in a setting or external conditions of that setting, especially if they might be changing.

Whilst we obviously appreciate the importance of theoretical framing, we believe that in action research the drive to contribute "to the practical concerns of people in an immediate problematic situation" (Rapoport, 1970:499). Action research has been found wanting when assessed against the criteria of positivist science where theoretical developments can only flow from "data that can be directly experienced and verified between independent observers" (Susman and Evered, 1978: 583). The low likelihood of action research generating theory based on data that meet these criteria led MacIntosh and Bonnet to speculate that whilst qualitative research more generally is often treated as the methodological "poor cousin," action research represents "the poor cousin's downtrodden neighbor" (2007: 321). Absent directly experience and independently verifiable data, action research places greater importance on the ways research questions are formed and reformed. For instance, in the bi-lingual education study, like most action research, the data to be gathered were integrally linked with addressing problems experienced by those in the Lomond School, about which there was genuine concern and an "intention to take action on the basis of the intervention" (Eden and Huxham, 1996). This case illustrates the need to locate theoretically informed questions in the context of particular empirical circumstances that are meaningful to both outside researchers and members of a setting in which the research takes place.

March (2000: 56) implies that this imperative for focusing on the setting and its members when developing research questions may run counter to the principles of good research, since "the primary usefulness of management research lies in the development of fundamental ideas that might shape managerial thinking, not in the solution of immediate management problems".

However, as we have demonstrated, it is not unusual in longitudinal organizational research that the initial circumstances of the study undergo a change in such a way that the original research questions are not the best way to explore the settings (cf. Mezias & Starbuck, 2003). For instance, companies, or parts of companies, get acquired or divested; informants get promoted, move, and/or are made redundant. This is particularly true when studying organizational change. As illustrated in the case of the bilingual education study, researchers entered the setting and gathered more information and a better understanding of the requirements (e.g., about the desire for both bi-lingual and bi-literate outcomes, and a need for better assessment strategies) than had been previously available. Similarly, the setting was characterized by challenges (e.g., lack of instructional material) and changes (e.g., changing house prices in the region; the change of law which occurred in year 3 of the project) that had not been expected. Individually and collectively, these changes had a bearing upon how the initial research question evolved.

We suggest that, especially in action research projects and as depicted in Figure 1, the (ongoing) development of research question(s) involves the interplay of three different dynamics: 1) the conceptual basis for the questions, 2) the context and 3) a reflexive engagement with the interests of the researchers and other actors in the setting member who help to compose a research team (Bartunek & Louis, 1996). In other words, our first observation would be that researchers are involved in a co-constitutive dialogic (Beech et al., 2010), or dialectical encounter, between the extant literature, their own interests, and the empirical setting. Further, characteristics of the setting may well change in small or large ways that may be far beyond the capability of the researchers or the

setting itself to affect, but thinking of the research questions as affected by the setting makes it possible for the dialectic involving them to shift.

Our second observation is that, on entering the empirical setting, the dialectical encounter of initially established research questions with the setting and with researcher interests reflexively determined, may result in three potential outcomes as shown in Figure 1. It could be that the setting is as expected and remains stable enough during the conduct of the research and the original research design can be executed unproblematically; i.e. there is ***no change*** in the initial research question(s).

In contrast, it could be that through a process of familiarizing themselves with and reflecting on the research setting, researchers may realize that the situation is not as originally expected. In the bi-lingual education case, the researchers learned the nuanced difference of bi-lingual and bi-literate outcomes as well as realizing the relative importance of assessment. Given the complex and multifaceted nature of organizations, such nuances may be difficult to articulate before entering the field. Initial data gathering may reveal subtleties, misapprehensions and new insights that would have been difficult to glean before entering the setting without a sensitizing research question. For instance, in the second year of the bi-lingual education project, the researchers reassessed the original plan to expand the study and include other schools, because the characteristics they encountered the first year proved to be more difficult to deal with than they had expected; something that became clear in their reflection on the setting. Further, there could be changes in some aspects of the organizations and their larger contexts (e.g., the change in the law as in the bilingual education case) which may have a bearing upon the framing of research questions. Hence,

the researcher may often gain further nuance and understanding once in situ. As illustrated in the bilingual education case and depicted in Figure 1, such changes may result in two distinct types of evolutionary processes in research questions. We call these evolutionary processes refinement and reframing respectively.

Refinement involves adjustment to the particular focus of a research question following engagement with the research setting in a way that leaves the original intention of the research intact. The refined research question(s) results from minor changes in the initial question(s); they are essentially more fine-tuned questions which may be more focused, more relevant and more feasible since they take into account the challenges and constraints imposed by the setting and researchers' understanding of them *after* entering the field. In the bi-lingual education case for example, this refinement led to an increased focus on the role of assessment in the effective delivery of learning outcomes. The trigger for this evolutionary step was the gathering of more detailed knowledge of the research setting once in situ. Of course, a refined research question could still be linked to the process of systematically reviewing the literature whilst such contextual refinement occurs. For instance, in the bi-lingual education case presented here, it is clear that the researchers could respond dialogically to their setting by adjusting the search terms used in their review of the literature, perhaps incorporating other studies with a stronger focus on assessment methods.

Reframing, on the other hand, involves a substantive and potentially discontinuous shift in the focus or nature of the research question. Reframing is likely to occur when, either on entering the research setting, or at some point during the study, the original research design is rendered unworkable. In these circumstances, researchers can either choose to abandon the study or reframe

their original research question. In the particular case of the bi-lingual education study described earlier, the dynamics of the housing market led to decreased demand for bi-lingual education (in year 2) before a legislative change outlawed the very phenomenon that the researchers had committed to explore (in year 3). Such substantive shifts in the context may mean that research questions move from a specific instance to the general case, e.g. from the study of bi-lingual education to a study of the impact of changes in education policy on teachers, children and parents. Equally, a substantive shift may be achieved by changing the unit of analysis or the focus of the research, e.g. from within school educational practices to local government/school relationships. For instance, in the case we described above, the researchers shifted their focus from studying the development and assessment of the bilingual program to developing insights on the ways in which bilingual teachers could work within the framework of a new law. Such reframing may be a way to foster a counterfactual reasoning form of research question generation, since the disruption of the empirical setting may provoke the researcher to question more fundamentally the underlying assumptions and constructs with which they are operating.

As we have suggested above, our experience in multiple such studies is that research questions often do evolve, but that the process of their evolution is rarely acknowledged in the final written account of the research. Figure 1 sets out a process through which research questions might evolve. Initial research questions, at least as presented by academic researchers, are typically generated by gap spotting, although systematic reviews and counterfactual reasoning may also take place. But these questions encounter both a particular research setting and the members of that setting. Thereafter, in field-based studies such as the

action research project reported here, the appropriateness of research questions may be influenced by both contextual and reflexive triggers. The subsequent evolution of research questions can occur incrementally through refinement (which may involve further iteration of a systematic literature review) or radically through reframing (which may involve counterfactual reasoning).

We have experienced doctoral students beginning a dissertation on one topic in a field setting, for which the originally promised data become unavailable. A different dynamic occurs when researchers enter the field with one set of expectations only to discover that these do not reflect either the most important or the most interesting features of the setting. Action researchers and other scholars of organizational change may start to study and/or work with a particular change effort only to find that it is indefinitely postponed. And so on. Rather than pretending that such events do not occur, it is essential to recognize them as important in revealing key features of the setting and potentially signaling the possibility of other questions.

When describing hidden practices of qualitative research, Sutton described the uncertainty that flows from not knowing "when and how others have done it" (1997: 99). We suggest that researchers, and particularly those new to the practice of research, would benefit from greater knowledge and clarity about the possible evolution of research questions when they encounter a field setting and, especially, ways in which such evolution is both acceptable and meaningful in field research. One simple solution would be to incorporate, perhaps within the methods section, an account of whether the research question was (a) stable with no change, (b) the subject of some refinement or (c) reframed during the conduct of the study and why. Our suspicion is that many field research projects would fit

into categories (b) or (c) and that a more honest, transparent and reflexive account of the journey towards a crystalized and stable research question would greatly enrich our field.   At the very least, it would give much more information about the context in which the work is being done than do virtually all studies now.

Concluding Commentary

Through illustration of the bi-lingual education study, we have shed light on how and why research questions may evolve once external researchers enter the field. We have also highlighted the fact that both contextual and reflexive triggers may have a bearing on this development. Finally, we have noted two types of evolutionary development, namely refinement and reframing. To conclude, we reflect upon why researchers often refrain from discussing refinement or reframing of research question, despite the likelihood that such evolution of research questions is a reality in many action research projects – as well as other kinds of field research.

We have attributed the expectation of fixed hypotheses (and/or questions) to the widespread influence of the scientific method and Popper's notion of "falsificationism". In his book *Objective Knowledge* (1972) Popper made it clear that he was talking about scientific knowledge which is independent of the observer, or acts of observation, i.e. not "subjectivist" in his terms. For us, there is a danger that social science research loses sight of Popper's qualifying statement. Given the popularity of the scientific method and the fact that many scholars of business and organization studies originally trained in other disciplines (e.g. our authoring team features an engineer, a physicist, an experimental social psychologist and a science graduate), it is understandable for researchers to

operate with an expectation that research questions should be impervious to the effects of the myriad vagaries of human interaction, i.e. from the processes of observation, reflection and other forms of data collection that constitute the research itself. Within the scientific and rational mindset, the data and the processes of collecting the data should not distort the original research design. The bi-lingual education case challenges this straightforward chronology by suggesting that it is a somewhat mechanistic, linear and unnecessarily narrow interpretation of what constitutes robust research practice.

A Popperian view of immutable research questions serves rather well while researching the dynamics of planets or chemicals. But what happens when the focal points of enquiry are the very (inter-subjective) processes of human interaction, which objective enquiry, as outlined above, explicitly regards as barriers to scientific research? In a fascinating essay on ideology and methodology in the social sciences, philosopher Alasdair MacIntyre (1998) accounts for the dominant, positivistic orthodoxies of enquiry as not simply a perhaps strained, but otherwise, innocent application of the scientific method, which he regards as an ideologically structured process of bureaucratic control. Consider first his observation:

> *Methodology then functions so as to communicate one very particular vision of the social world and one that obscures from view the fundamental levels of conceptualization, conflict, contestability, and unpredictability as they constitute and operate in that world. It thus has one of the two centrally important effects of ideology (op cit, .p65).*

He goes on to explain some of the "centrally important effects of ideology", namely that the particular view alluded to above operates in the interests of control on the part of a particular group. Of course, such control offers the benefits

of relative stability, predictability and, in an era of escalating concerns for sound governance, clear lines of accountability. What is interesting here is that in sharing roots with the ideology of bureaucracy, it is an abiding view of the human as a rational actor (MacLean et al., 2015) that underpins conventional research methods.

By rational, what we mean here is the idea that action is conceptualised in terms of ends, means and conditions. One enters into a situation or conditions (in our case, a researcher enters the context), with an end in mind (in our case, a research question) and uses the available means (in our case, research protocols and methods) to secure the end (answer the question). This is all done in a relatively straightforward way since both the situation and the means are considered to be open to manipulation by an intellectually driven process unimpeded by human experiences. If the process is rational, the root metaphor is the mechanism. And thus we end up back, so to speak, where we started, with the combination of Cartesian behaviour and Newtonian mechanics that underpins to the modern scientific era (MacLean and MacIntosh 2012).

Yet, the unwanted "friction" in this Newtonian phenomenon, or the obscured levels – alluded to by MacIntyre above as "*conceptualization, conflict, contestability, and unpredictability*" - we would argue are the very essence, or hallmark, of good action research in particular, and field research in general. If we develop MacIntyre's argument, the underpinning ideology of conventional research obscures the very things that we as researchers are seeking to illuminate. For instance, in the case of our bi-lingual education study, the research team faced a stark choice. Either they must recognise that the social setting in which they were gathering data was changing around them in real time, or they must abandon

the research since it was not conforming to original expectations. When studying change, there is inevitability about such experiences which will likely resonate with established field researchers. As Susman and Evered (1978) argued, it is simply not appropriate to assess the scientific merits of action research from within a frame of reference which is exclusively scientific and rational. Part of the way to avoid this is to operate out of an ideology with different assumptions about human experience and action that go well beyond counterfactual reasoning.

Conveniently, much work has already been done on this front. Specifically, and in relation to the scientific method, complexity theory (Prigogine and Stengers, 1984) has posed a serious and sustained challenge to the centrality, or even possibility, of prediction in complex systems involving many interacting elements. Instead of a concern with control, and a design-driven process of predictable execution with defined outcomes, complexity points to a world that is essentially dynamic, unpredictable and governed by emergence rather than mechanical execution. Hence, one way forward is to engage seriously with a new root metaphor for research – as a complex process or system rather than a mechanism. Elsewhere, two of the authors have used a complexity perspective to conceptualise research as a dynamic which we cannot know in advance and out of which meaningful questions will emerge and evolve as the system adapts and transforms (MacLean and MacIntosh, 2003).

Having adopted a complexity perspective on the "research" in action research, the other obvious step would be the adoption of a consistent view of human action to complete a reframed view of "action research". This involves introducing an alternative to human beings and their settings as purely objective, utility-maximising rational automatons.

We are not proposing the idea that humans and their actions are "irrational" (though, of course, both often are). Instead, we simply suggest the need for a more rounded view of humans and human interaction that incorporates our "non-rational" faculties such as intuition, emotion, and imagination. Notably, these quintessentially human characteristics which serve us so well in other aspects of our lives are placed firmly "in the closet" (Sutton, 1997) when we read sanitized accounts of a linear, logical, rational research process, especially if it is carried out in a field setting.

Another case in point is the work of social theorist Hans Joas (1996) towards promoting a view of creative action which he claims is much better suited to the times we in which we live, and which we see as much more able to deal with MacIntyre's "obscured levels" of contestability, emergence, unpredictability, etc. Joas draws on American pragmatist philosophy to depict a view of action which, as an alternative to the ends-means-conditions framework of rationalism, is organised around situated social interaction, embodied expression, and, critically for the subject of this paper, emergent intention. Instead of a fixed and prior intention, Joas argues that intention itself emerges in the situation, in interaction with others, and influenced by a plethora of embodied "non-rational" urges such as desires, chance ideas, mood, social affinities and intuitions.

In this chapter, we have argued that the wider research community would benefit from acknowledging that research questions can, and in many circumstances, should evolve. What Joas points toward is a much more radical stance within which a conception of intention itself as emergent utterly changes the status and nature of the research question. Rather than a fixed entity, it becomes the evolving expression of a collective intent to understand, as embodied

researchers, the situation in which we find ourselves. In doing so, we create with others in that situation a sense of who we are, what we are doing together, and what this means. Emerging and evolving intention is the lifeblood of a research process peopled by fully rounded, emotional, intuitive and radically social individuals. From this perspective, a closed and fixed research question becomes a straightjacket which reduces a living collective to an impoverished mechanical interpretation of that same collective.

In this more radical perspective then, our argument is simple. Research questions should evolve as researchers reflexively interact with the situation(s) being studied. We have suggested ways this interaction takes place and identified two distinct processes by which such evolution can occur (refinement and reframing). We encourage fellow scholars to be more explicit about how their research methods enable the most revealing aspects of the settings they are studying.

Refining and Reframing in "creative" action research

Research, conceptualised as creative action, fully acknowledges researchers as creative human beings who are always in the social process of "becoming" (Ingold, 2013). Turning the focus away from answering a pre-set question perhaps to "requestioning" what we are enquiring into, in the light of what we are experiencing in the actual conduct of the research, creative action research pushes us to question the extent to which we are abusing the original Popperian view of scientific method when we apply it to social settings. A constant openness to change requires an "acute empirical sensitivity" (Chia 2014), not only to an ever-

evolving context or situation, but to also to each other in our interactions and interpretations.

The increasingly familiar term "emergence" perhaps best sums up what we are saying about research questions and research practice in general. In this paper, we are drawing attention to a complex emergent dynamic, whose very nature or direction cannot be known in advance in detail, and which is uncomfortably resistant to rational mechanical control. We are calling for a first step in a longer process. By acknowledging when and for what reasons our research questions evolve we will offer more transparent access to our research findings. Beyond this transparency, there may be a need to more fundamentally rethink the philosophical basis on which we ground our definition of research.
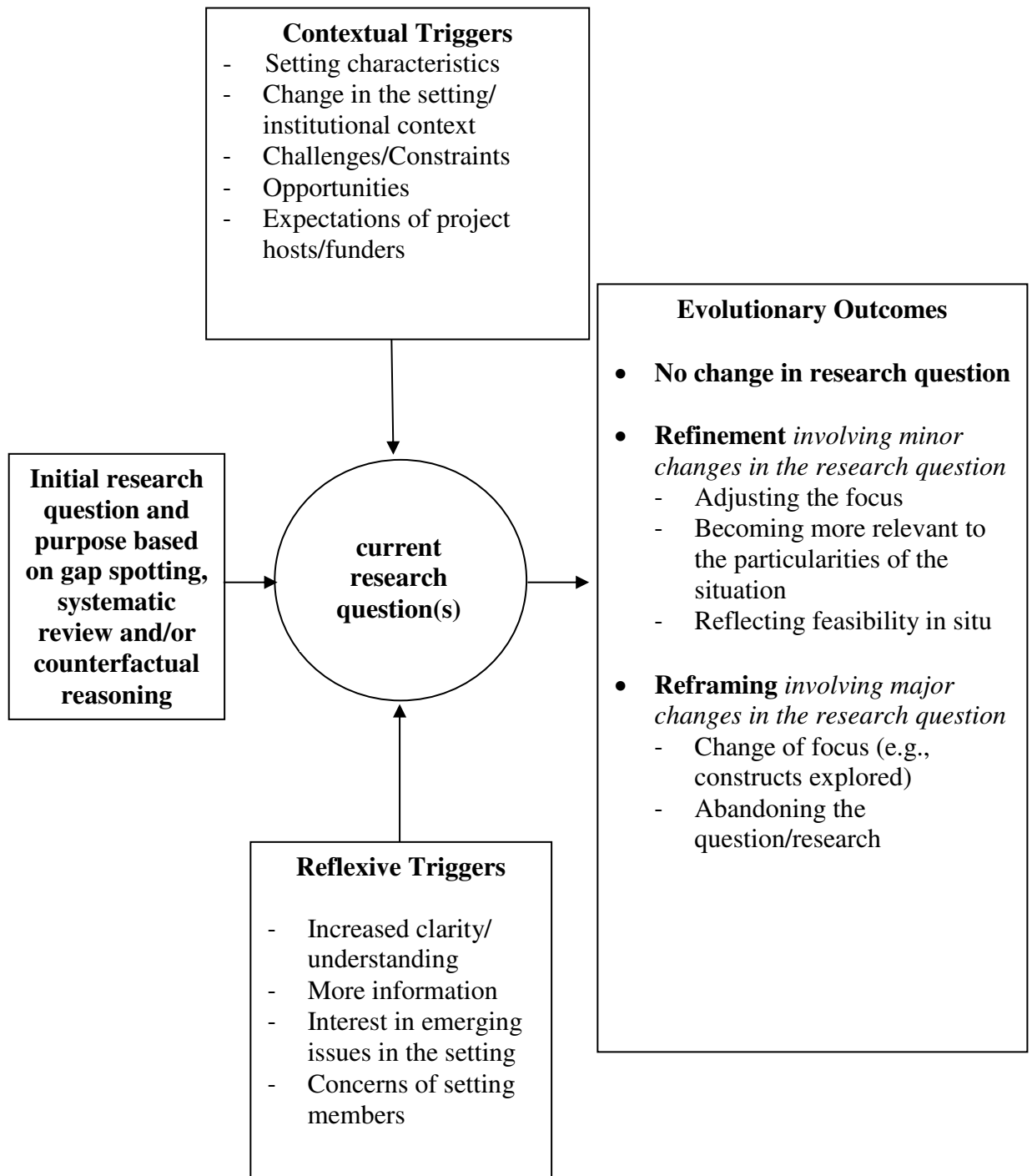
In closing then, we suggest a metaphor that may bring some of our more academic argumentation to life. Often the focus of scholarly research, at least the type that is formally accepted by scholars, is on individual rose petals, chosen in advance as discrete, varying objects whose intricacies may be explored according to pre-set questions. Such focus enables considerable control. What this mindset ignores, of course, is that rose petals are only alive and truly beautiful when they are part of the roses from which they draw life. These roses are in constant development and change during their lifetimes. An individual research question, formulated in advance, may be a beautiful rose petal. Ignoring the ever-changing context of that question, the flower which hosts it, may nurture it, and will eventually change it, is to do a disservice to the temporality of what is being observed. The rose gives life to the rose petal. Ignorance of this key fact, whether deliberate or inadvertent, eventually leads in turn to a lack of appreciation of the even more marvellous gift humans are given, a complete rose garden.

TABLE 1

The Case of Bilingual Education: A Summary	
Study phases	- Year 1 - Year 2 - Year 3
Key actors involved	- Professor Walters from SOE (Principal Investigator and leader of the project) - SOE associates (primarily doctoral students working with the project) - Ms. Wachter, Principal of Lomond School - Lomond School (LS) teachers
Initial Impetus for the study	Increase in Portuguese speaking students in a Public School located in a state that had a law mandating bilingual education if there were 20 or more enrolled students from the same language group
The research question(s)	- Year 1: What are the characteristics of effective bi-lingual education? - Year 2: What role does assessment play in the effective delivery of bi-lingual education? - Year 3: How can teachers involved in bilingual education respond to legislative changes regarding such education?
Day to day activities of participants	- Bimonthly meetings – Professor Walters with LS personnel and with SOE associates - Sharing of information among the LS personnel - Regular visits to the LS on the part of Professor Walters and SOE associates - Observations of classes at the LS - Discussions and feedback sessions - Professional development workshops for LS teachers
Key milestones of the study	- Compilation of background information (language and country of origin) of students and families - Creation of a summary of goals of a bilingual program - Balanced amount of instruction in both Portuguese and English - Increased collaboration between Portuguese and English speaking teachers - Parents' night with Ms. Wachter and Professor Walters - Compilation of list of Portuguese books - Purchase of Portuguese books for the LS - Creation of informational brochure about the bilingual program - Creation of teacher's manual - Ongoing development of assessment tools - Training bilingual teachers to teach in English
Reflexive and contextual triggers for the evolution of	- Minor Change(s) o Increased understanding of the context (e.g., about lack of assessment tools, parental preference that students should be bilingual and

research questions	bi-literate, inadequate number of Portuguese books) - Change in project participants from the Lomond School - Identification of discrepancy in the amount of English and Portuguese teaching at various grade levels - Major change - Change in legislation leading to discontinuation of bilingual education in the state
Implication of *refinement* of action research project objectives	- Decision to focus only on one school (not moving to another school as initially planned) - Decision to focus on assessment practices and tools - Engaging in activities like buying Portuguese books
Implication of *reframing* of action research project objectives	- Change in focus to help teachers prepare for teaching bilingual students in English

Figure 1
How research questions evolve in qualitative research

Contextual Triggers
- Setting characteristics
- Change in the setting/ institutional context
- Challenges/Constraints
- Opportunities
- Expectations of project hosts/funders

Initial research question and purpose based on gap spotting, systematic review and/or counterfactual reasoning

current research question(s)

Evolutionary Outcomes

- **No change in research question**

- **Refinement** *involving minor changes in the research question*
  - Adjusting the focus
  - Becoming more relevant to the particularities of the situation
  - Reflecting feasibility in situ

- **Reframing** *involving major changes in the research question*
  - Change of focus (e.g., constructs explored)
  - Abandoning the question/research

Reflexive Triggers

- Increased clarity/ understanding
- More information
- Interest in emerging issues in the setting
- Concerns of setting members

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