

Perspectives on reflection and intuition in management research - Towards developing a framework of reflective-intuition knowing

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“When managers act, their thinking occurs concurrently with action. Thinking is not sandwiched between activities; rather, it exists in the form of circumspection present when activities are executed” (Weick 1984, p. 223)

“I am not suggesting that good teachers act without thought. But we have not really examined what the nature is of this “thought” (van Manen 2008, p. 11).

Introduction and problem

The terms reflection and intuition are conspicuously prominent and dominant in management research. In a variety of ways these concepts crops up in everything from management research on decision making processes (March and Simon, 1966), sense-making (Weick 1979), information-processing (Simon 1979), learning cycle (Kolb 1984), reflective practitioner (Schon 1983), mindfulness (Weick and Sutcliffe 2001), experiential learning (Korthagen 2005), expert intuition management (Dreyfus & Dreyfus 1986), strategizing (Mintzberg et. al 1998), pedagogical tact (van Manen 1995) etc. More concrete, ‘reflection’ and ‘intuition’ are ambiguous terms and the relationship between them, critical to both ‘strategic management’ and ‘knowledge management’, is unclear. If ‘intuition’ is inherently non-verbalizable in expert decisions (Dreyfus & Dreyfus 1986) and strategizing (Mintzberg et.al 1998) and if ‘reflection’ is almost impossible (Kroksmark & Johansen 2003) or very difficult to achieve in instant practice (van Manen 1995), there seem to be little space left for other perspectives which may link intuition and reflection in a more dialogical way.

One of the dominant ways of dealing with ambiguous phenomena of management knowledge/knowing is undertaken by separation and differentiation. For example, the personal, context-bound and dynamic definition of knowledge is often allocated to categories labeled ‘implicit’, ‘tacit and ‘intuitive’ whereas the impersonal, context-free and static side is allocated to a categories labeled ‘explicit’, ‘analytical’ and ‘reflective’ (see Tsoukas 2003,

Stacey 2001, Nonaka & Takeuchi 1995). It may be argued that this differentiation is supportive as long as results (theoretical and empirical) are not presented in an additive manner. A way to address such a dualistic and dichotomized view is to think in terms of contradictory meanings simultaneously. This is what Bakhtin (1986) terms 'loopholes'. As an attitude, this always already (unsolvable) solution is attractive, and it may serve to justify the motivation behind this paper. This motivation challenges the tacit/intuitive-explicit/reflective knowledge dichotomies which tend to leave out all the shades of grey in between.

It is possible that this kind of dichotomised logic, like a colonising impulse, exercises an excessive influence on our view of what 'good management' ought to be. This dichotomised logic may be supported by the fact that our society places considerable emphasis on rationality and efficiency, which means that analytical assessments and (detached) reflection often receives more attention than personal commitment and embodied intuitive skills (Dreyfus & Dreyfus, 1986, MacIntyre 1985, Toulmin 2001). In my view, there is reason to believe that this colonizing impulse derives some of its legitimacy from a dichotomised view of reflection and intuition. If this suggestion is correct, there are grounds to show the significance of one alternative framework which may stem from the shades of grey and loopholes.

From the shades of grey a conceptual framework of 'reflective-intuition-knowing' (R-I-K) as a knowing-making process is presented, which links the distinct reflective and intuitive forms of knowledge. This proposes a (radical) challenge with regard to a new (R-I-K) conceptualization of 'here and now' management practice partly based on two forms of knowledge which traditionally has been dichotomized. In short, either when an (unexpected) problem occurs in the managerial 'here and now' situation or that a situation demands an answer, (expert) managers may deploy a reflective-intuition (R-I) by means of an intuitive grasp/awareness and *simultaneous* reflection during the course of the situation which guide further action, or reframing the problem and modifying ongoing practice in such a way that managerial knowing and good decisions still take place. R-I reflects the *on-the-spot* way of 'thinking' more profoundly or in other ways, ways that open the world and guide managers in it.

Illustrative examples for this R-I-K framework is reviewed and its trustworthiness tentatively established. Examples of 'reflective-intuition-knowing' intend to show how reflective and intuitive-process are interwoven 'here and now', and it is proposed that the transmutation of 'reflection' and 'intuition' 'knowledge' into R-I-K involves three specific,

interwoven and dialogical modes (abductive, deductive and inductive) of management practice. Such a transmutation and synthesis could begin amongst teachers themselves, and the examples in this paper pertain to the practice of teachers. Moreover, viewing the teacher as a manager of strategic decision, knowledge and interpretation allows the R-I-K to be viewed as viable for the practice of teaching and for teacher training.

In this paper I draw on recent progress in the perspectives of knowledge- and strategic management and decision-making to frame and develop a framework of R-I managerial knowing. In addition to tying together elements of the theory of these areas, this analysis casts new light on and has implications for a variety of issues in the management literature including the definition of the (tacit-explicit) knowledge concept, the managerial decision making process (rational-intuitive), the importance of unsecure and open-ended 'here and now' situations and the dialogical character of management practice. I believe such a perspective will contribute to a better theoretical understanding of the complex knowledge/knowing involved in management. This is one step of enhancing our theoretical sensitivity towards how the interwoven aspects of R-I can improve managerial practice and knowing. A greater understanding of the actionable and diverse aspects of R-I knowledge opens up the potential for improved research on the use of knowledge in management. Seeing R-I knowing as a intertwined and complex phenomenon has the potential to more fully reveal it's manageability. It can also be helpful to managers as a tool to manage and run their everyday work and projects more efficiently. First, this paper presents the rationale and features behind the 'theory of reflective-intuitive knowing'. Second, a literature review is presented in order to shed light on and frame the phenomenon of R-I-K. Thereafter illustrations of how R-I-K modes such as abductive, deductive and inductive inferences works are given. Finally, theoretical and practical implications for re-searching R-I-K management are described.

Theoretical framework

Based on aspects from different philosophical texts of Heidegger, Polanyi and Peirce the theoretical framework of R-I-K are presented. More specifically drawing upon Heidegger's texts (1962, 1977, 1993) *Being and Time*, *The question concerning Technology* and *What is Metaphysics?* it's possible to show some aspects of how R-I-K can be a condition for knowing and existence in scientific management approaches such as strategy- and knowledge management . Moreover, due to this negligence of the meaning of Being, man (the 'who' of

everyday Dasein is Das Man or man) has lost almost all his connections with Being and lives now in a technical and artificial world (Heidegger 1962, 1977, 1993). That is to say, man has lost his *ground* and is not-at-home anymore. By taking the question of Being as the clue, Heidegger (1962) is concerned about the Being behind all beings or entities, which can be grasped by the self-understanding of *Dasein* (human being). The human being (Dasein) is always already (being-in-the-world) in a process of opening entities into our world involvement. In this way we categorically perceive entities *as* entities either as themselves or as something they are not, but always for-the-sake of some circumspective activity (Heidegger 1977). It is being-in-the-world (In-der-Welt-Sein) and this perception ‘for-the-sake’ of which also may constitute R-I or the experience of R-I.

The question that needs to be explored much further is “precisely how do these R-I become available to us?” The explanation proposed is largely as a result of a reading of Heidegger (1927), especially his notion of a horizon of understanding, or significance, which constitutes a pre-cognitive capacity that efficiently, and without conscious effort, is able to generate a context for our being-in-the-world. The interesting point is that Heidegger characterizes this as a *circumspection*, by which he means a casting around for interpretations and meaning. It may be that R-I are one of the most advanced examples of this at work, that is to say we are thrown into the future. In other words, R-I may exemplify that we are always already ahead of ourselves. This may also be a fruitful contribution to Polanyi’s (1966 p. 4) words that we know more than we can tellⁱ.

When this notion of R-I circumspection is taken up together with Polanyi’s (1962) idea of *tacit knowing* then perhaps a much clearer picture starts to emerge. The central idea in Polanyi’s philosophy is what he has called the *tacit dimension* (Polanyi, 1962, 1966). His basic proposal is that *all* knowledge involves personal knowing, and that knowledge is either tacit or is rooted in the tacit (Polanyi, 1969). He characterizes human knowing as “*participation through indwelling*” (Polanyi and Prosch, 1975, p. 44), and that “*since all understanding is tacit knowing, all understanding is achieved by indwelling*” (Polanyi, 1969, p.160). The point is that the understanding of managers R-I circumspections may be sharper focusing on not only on what is known explicitly, but also on what is known tacitly, i.e. at a pre-cognitive and subsidiary awareness level, sometimes outside of our focal awareness. As Polanyi (1962) says; “*The structure of tacit knowing is then the structure of this integrative process, and knowing is tacit to the extent to which it has such a structure. ... tacit knowing cannot be strictly opposed to focal knowing*” (p. 602). To be more precise, it is the relation between the tacit underpinning (subsidiary awareness) and the explicit focus (focal

awareness) of knowing that is important. So, it's this integration or relational character of knowing which is the tacit dimension.

Moreover, what crucially underpins the R-I knowing-making process is a participatory (being-in-the-world) and relational knowing (subsidiary and focal awareness). Furthermore, I propose the use of R-I in this respect, as involving a process of abductive, deductive and inductive inferences, described by Peirce (1958).

Peirce (1958) wish to show how it is possible to make new discoveries and knowledge in a methodologically and logically way. Translated into management practice abduction (firstness) plays the role of generating new ideas or hypotheses; deduction (secondness) functions as evaluating the hypotheses; and induction (thirdness) is justifying of the hypothesis with empirical data.

Abduction, as the first core concept, constitutes, according to Peirce (1958), the first stage of any scientific investigation, and of all interpretative processes (paragraph 6. 469). The very basis for abduction is our examination of a certain number of facts. We attempt to sort out the facts in order to attain an idea of what we find before us. The phase of abduction consists of unexplained or surprising phenomena. According to Peirce (1958, p. 315), the person at stake or the manager/teacher can reach this abductive hypothesis by genuine doubt. For Peirce (1958), doubt takes rise from surprise or as he says: "*genuine doubt always has an external origin, usually from surprise*". In other words, finding an answer to managerial problems requires a certain amount of creativity: "*it is the idea of putting together what we had never before dreamed of putting together which flashes the new suggestion before our contemplation*" (Peirce, 1958, paragraph 5. 181). The possible abductive explanatory hypotheses reveal a path from facts to ideas and theory, or expressed differently: the abductive hypotheses seek theory and deduction.

After the abductive steps have brought us to selected theories that may be fitted to explain the facts, we find ourselves, according to Peirce (1958), on the deductive level. The second core concept, deduction, or the deductive mode, is based on theory and the theory's hypotheses. Deduction involves drawing logical consequences from premises. An inference is endorsed as deductively valid when the truth of all premises guarantees the truth of conclusion. This may correspond to when the manager is introduced to a rule or a theory which aims at gaining understanding of a surprising fact. In this way, deduction, like abduction, contributes to a conceptual understanding of the phenomenon of empirical facts.

Deduction cannot produce new hypotheses or assumptions, because it is fundamentally self-referring. It is important to bear in mind that this kind of reasoning cannot lead to the discovery of knowledge that is not already embedded in the premise (Peirce, 1958). However, Peirce (1958) in line with the inventor of deductive syllogisms, Aristotle, did not isolate formal logic from external reality and they repeatedly admitted the importance of induction. This 'only exclusive deduction' thinking is not endorsed by the Peircean philosophical system, which emphasizes the search for a deeper insight of a surprising fact by the help of the interconnected terms of abduction, deduction and induction.

Inductive logic is often based upon the notion that probability is the relative frequency in long run and a general law can be concluded based on numerous cases. Peirce (1958) uses the example of an investigator who starts from a hypothesis and tries to test it, elaborating some conditional predictions out of it. To assess the hypothesis, the investigator must judge and estimate the combined value of the evidence. Accordingly, the teacher must handle classroom situations and judge if they are reasonable compared to facts such as grades. Induction may shed light on important interpretations, interpretations that in some way reflect what is actually going on in the management and classroom practice. Clearly, a strategy that is faithful to the everyday realities, where surprisingly facts are carefully induced from empiri, can ensure that theory (deduction) is closely related to the daily significant opportunities which may be discovered.

It may seem hasty and unjustified to combine such different thinkers as Heidegger, Polanyi and Peirce under an umbrella called R-I-K. Even though there's not enough space here to elaborate on the issue, some remarks can be made. For example, aspects of abduction may appear more commonsensical when seen in connection with Polanyi's account of tacit knowing with its emphasis upon indwelling and two forms of awareness (see Mullins 2002). In sum, to further explore the connection between Heidegger's being-in-the-world, Peirce's abduction and Polanyi's tacit knowing may not only suggest some new ways to appreciate the resonant depths of these thinkers, but it may also contribute to a more profound understanding of R-I as a phenomenon.

A tentative framework of R-I circumspection may rest on a (embodied) precognitive capacity by which managers may generate abductive-deductive-inductive plausible 'here and now' accounts of their experience. R-I therefore can be seen to be the crucial means by which managers simultaneously use reflection and intuition in a three-fold way. These concepts may

describe new bearing internal patterns both on a theoretical level as well as in the reality of management practice. The purpose is not to build ontologically models, but to understand real-life practice, i.e. how knowing are abducted or created and inductively or deductively discovered in a variety of *here and now* situations and for different reasons. Within academic literature it is possible to further frame the R-I-K perspective.

Literature review

Since the literature on management research is extensive, I will choose research and theoretical perspectives which may frame the need for a more profound understanding and more studies on reflective-intuition-knowing in managerial practice. Literature within different areas such as strategic management, knowledge management and decision making (psychology) are considered.

Strategy and knowledge management

The strategy management literature is characterized by dichotomies such as content-process, formulation-implementation, thinking-acting, intended-emergent, foresight-uncertainty (Jarzabkowski 2005). These theoretical dichotomies may have more or less relevance for in situ practice. Mintzberg (1998), in his study of the nature of managerial work, show that in many instances managers do not appear to use a rational systematic, a priori step-by-step approach to decision making. Moreover, Mintzberg (1994: 321) as a forerunner for the strategy-as-practice approach argue strongly that, *“Indeed, the whole nature of strategy making - dynamic, irregular, discontinuous, calling for groping, interactive processes with an emphasis on learning and synthesis - compels managers to favor intuition. This is probably why all those analytical techniques of planning felt so wrong. ... Ultimately, the term “strategic planning” has proved to be an oxymoron.”* It seems like Mintzberg favourise intuition perhaps on the expense of analytical reflection and ‘here and now’ reflection. In Mintzberg’s (1994) view reflection and intuition are not simultaneously aspects of managerial knowing. Here, the R-I practice/examples under investigation is narrowed and focused on strategizing as emergent action ‘on-the-spot’ that incorporates both thinking/reflection and intuitive awareness. However, while sharing Mintzbergs turn to studying strategy less as a means to an end and more as a (emergent) phenomenon in itself, this is not just the preserve of Mintzberg. The turn seems to be gathering momentum under the label of strategy-as-practice (Whittington, 1996; Hendry, 2000; Jarzabkowski, 2003). The strategy-as-practice perspective highlight the need to understand practitioners and the resources they draw on to perform their work (Balogun et al, 2007; Jarzakowski et al, 2007; Jarzabkowski, 2004;

Johnson et al, 2003; Whittington, 2006). In line with this approach I agree that research needs to focus more on what it is managers actually *do*, or to be more precise; i.e. to focus on what is the nature of ‘thought’ in the midst of action (as van Manen 1998 highlights in the opening lines). Maybe no research has as yet taken this argument seriously enough to explore the relationships between managers strategic action, their R-I tacit knowing or their ability to develop context sensitive interpretations and actions. Moreover, the strategic perspective holds that managers engage in sense making in order to make strategic judgements about change.

In concordance with much research on sense making which stress the unexpected cycles of interpretation and action (Weick 1995), R-I major concern also is the unforeseen (problem based) reflective processes and interpretative cycles. For example Mangham & Pye (1991) refer to these cycles of “reading context” to decide what to do, and “acting to have impact” as “sense reading” and “sense writing”. The framework of R-I-K follows this main (hermeneutical) message, but take a closer look at R-I-K situated in ‘here and now’ action-demanding situations. Much research on sense making has focused on the context of sense making, with a primary concern for organizational processes of sense making (for example, Gioia & Longenecker, 1994; Maitlis, 2005; Maitlis & Lawrence, 2007). As a result perhaps less is known about how managers as individuals perform their sense making roles, or what I would call R-I-K, and it is this gap this research starts to address. The focus on individual performance shows how managers reciprocally act within and shape their sense making context through their practical knowledge. This also enables the findings of R-I examples and theory to contribute to the sense-making and strategy-as-practice research agenda since it’s possible to unpick some linkages between strategic practice, R-I knowing and performance.

With regard to the knowledge management as well as the strategic literature one of the most commonly used distinction is between knowledge that has been made explicit, and the knowledge that remains tacit (Tsoukas 2003; Gourlay 2006). We seem to owe it to the initial (misinterpreted) influence of Polanyis’ epistemological project (1958) and, following more recently, to the influence of Japanese authors such as Nonaka and Takeuchi (1995). This paper is concerned with extending what we know about how teachers manage their strategic practice from a tacit knowing perspective through viewing the teacher *partly* in terms of what Orlikowski (2002) calls “knowledgeable performance”, or “effective action” and partly in terms of what Dreyfus and Dreyfus (1986) names “situational responses” and “intuitive judgment”. In addition I try to show that the argument “*tacit and explicit knowledge are mutually constituted ... inseparable*” (Tsoukas, 1996: 14), may be justified or shown in an R-

I-K framework. The R-I concept suggests that all our knowledge (tacit/intuition and explicit/reflection) can be exercised in practice. Hence, R-I aims at questioning the dominant and dichotomy (tacit-explicit) view of knowledge in management literature. This can be done by looking at how the different aspects (abductive, deductive, inductive) of knowing are (not) used by the teacher. Thus here the term “tacit knowing” may be used to capture the notion of R-I knowing as something intimately linked to and wrapped up in doing and actionable ‘here and now’ knowledge. This may help to emphasise the nature of the tacit knowing seen in managers R-I interpretative actions and castings, but rarely examined in detail.

Decision making

Historically, reflection and intuition in management has been discussed in light of two different models which I choose to call the systematic-analytical model and the intuitive-skill model. There are many variants of theories and very different projects within these two models, but the difference between them represents dualities between theory/reflection and practice/intuition. The roots of these dualities in the western world stem in a variety of ways from i.e. Socrates, Plato, Aristotle and not at least Descartes’ philosophy.

Maybe one approach dominate in management research within the systematic-analytical stance, namely an decision making theory often underpinned by information-processing theory. Analytical decision making theory assumes that rational analytical thinking precedes action. The analysis is a systematic step-by-step procedure with the use of logical rules that can be followed until a decision is made. The information-processing model is a psychological theory much used in research in medical decision making and characterized by a scientific approach to making decisions. It is also termed the hypothetico-deductive approach. Hamers et. al. (1994) described four major stages of this process in nursing as, gathering preliminary clinical information about the patient, generating tentative hypotheses about the patients’ condition, interpreting the initially registered cues in light of the tentative hypotheses, and weighing the decision alternatives before choosing the one that fits best in light of the evidence collected. Earlier knowledge acquired about the situation at hand is included in this process.

In the last two decades research on intuition became significantly more popular in the management literature (e.g. Akinci and Sadler-Smith 2012). A major contribution of this interest which more generally reflects an increasingly interest in the academic diciplines is represented by Dreyfus and Dreyfus (1986). The intuitive-skill model is probably best known in (expert) management through Dreyfus’s work (for a more comprehensive and profound

categorization of intuition in management research see Dörfler and Ackermann 2012). Intuition has been defined in several ways, for example “*understanding without a rationale*” (Benner and Tanner 1987, p. 23) or “*a perception of possibilities, meanings and relationships by way of insight*” (Gerrity, 1987, p. 64). According to Dreyfus and Dreyfus (1986), expert intuition is rooted in the ability to recognize patterns of cues. For example, this is an ability that develops with experience in managing patients in the nursing field. According to Thompson (1999), the basic idea of the intuitive-skill model is that “*intuitive judgment distinguishes the expert from the novice, with the expert no longer relying on analytical principles to connect their understanding of the situation to appropriate action*” (p.1224).

While reviewing the literature on intuition two recurring themes have been prominent when discussing the benefits of intuitive decision making (Dane & Pratt, 2004; Isenberg, 1984; Gladwell, 2005; Myers, 2002; Kahneman, 2002; Miller & Ireland, 2005): 1) Its speed compared to logical decision making; 2) Its usefulness in novel or unfamiliar settings. R-I may share the benefits of intuitive decision making with regard to speed and its usefulness in novel or more open-ended (interpretative) situations. However, R-I may collapse under the same “speed and novel” conditions, and perhaps the mode of R-I in a certain degree depends on how time and the novel are subjectively perceived.

The analytical and intuitive decision making models have ardent followers and have often been viewed as two distinct types of cognitive activity sharply separated. However, since the late 1990s, a third approach to decision making has been discussed in the management literature, decision making based on the cognitive continuum theory (CCT) by Hammond (1996).

According to Cognitive Continuum Theory, there are multiple modes of cognition that lie on a continuum between intuition and analysis. Cognition often falls between the end points and thereby includes properties of both analysis and intuition, referred to as quasi-rational cognition. Quasi rationality is the prevalent mode of cognition, meaning that many judgment tasks present cues that induce an oscillation between analytical and intuitive cognition. A major tenet of the theory is that “*judgment is a joint function of task properties and cognitive properties*” (p. 83), that is, different judgment tasks should be solved through different cognitive processes. This theory describes differences among judgment tasks and locates them in relation to cognitive properties along the cognitive continuum. A judgment task that involves uncertainty is difficult to break down into distinct components and may benefit from a more intuitive approach than a judgment task that is well structured with few and recognizable cues. The latter judgment task would favor a more analytical approach.

Using Cognitive Continuum Theory, it's possible to recognize when quasi rationality may outperform analysis and intuition. Even though in different ways, R-I-K theory and quasi rationality may shed light on the need for a more refined theoretical framework than dichotomized views of analysis and intuition.

Example of R-I-K in teacher practice

The case: The teacher needs to check out the results of poor grades for her class which stem from external evaluations and censorship. In this case the teacher is faced with evaluations which contradicts her sense of that the teaching where successful. The successful experience are due to the teachers purpose 'to see' every student both literally and figuratively. She tries as best she can to give recognition in the classroom to every student; not only recognition for an accomplishment, but recognition of who the student is, even who he can become. She keeps her eye on students and the challenges they has set for themselves. In addition to her own experience, she has also received many positive feedbacks from both students and colleagues with regard to her attentive teaching style. Here there's confusing data at an inductive (empirical) level. The reality perceived by the teacher does not correspond to the poor evaluation. On the background of these contradicting inductive 'evidence' the teacher seeks a tentative explanation. When the teacher is situated in the classroom again she brings these questions into play. While conducting her teaching she ask herself; "is this working out? Do the students really understand my teaching? What is the best way of dealing with this right now?"

A syllogism for the above-mentioned classroom teacher would look as follows:
Premise: A phenomenon consisting of apparently multiple, positive and promising learning and teaching activities in the classroom has been observed (from the teachers perspective). In contrast poor grades are presented by external reviewers (x1).

Premise: Among the various explanatory hypotheses are: (a) The teacher experience that her activity makes visible demands, and challenges the students through dialogue and questions, but maybe what you see (teaching) is not necessarily what's happening (learning); (b) the students' own effort or individual work does not create a decisive basis for learning activities; (c) the pupils' dialogue among each other is not sufficient to develop positive learning activities. For the teacher, (a) is the hypothesis that can best explain x1.

Conclusion: There is thus reason to pursue (a).

The syllogism example demonstrates the teachers creative organisation of the empirical facts. According to Peirce (1960, p. 315), the teacher can reach this self-evident hypothesis by the presence of genuine doubt. For Peirce (1960), doubt takes rise from surprise or as he says: “*genuine doubt always has an external origin, usually from surprise*” (Paragraph 5. 443). Genuine doubt occurred in light of the paradoxical ‘results’ of teacher practice, and now the teacher is trying to look at what is going on in front of her, trying to use R-I in the midst of action to make decisions that would allow them to foster as much success as possible out of what is going on.

Deductive-hypothetical conceptualisation in the classroom is necessary (but not sufficient) to deduce systematic, experiential consequences or theoretical working hypotheses. For example the teacher wasn’t sure about this girl. She is often is looking elsewhere, and doing other things (D), but the teacher assumed she gets things anyway (E). This must be checked out. And this guy who is back there is very, very bright and often physically elsewhere also (F), but doesn’t miss a trick the teacher assumed (E) . This must be tested. In a syllogism, this can be articulated as follows:

Premise: In theory, all cases of D are interwoven with E.

Premise: In theory, F situations are interwoven with E cases.

Conclusion: In theory, F and D are therefore interwoven cases.

The classroom teacher is here carrying out a deductive operation that, based on the premises, draws the logical conclusions. It is important to recall that this does not involve any new applicable knowledge, because the conclusions, that is, being able to apply the concepts together, are implicit in the premises. In other words, the general hypotheses; *What you see is not necessarily what’s happening*, is being (theoretically) tested. These hypotheses and consequences are now integrated in the circumspective activity in ‘here and now’ situations in the classroom. Thereafter the teacher carries out a systematically testing, relatively long-term and theoretical analysis of the classroom’s empirical facts. For instance:

Premise: D1, D2, D3 ... D100 is E.

Premise: D1, D2, D3 ... D100 is F.

Conclusion: E is therefore also F.

This syllogism shows that the teacher has applied a deductive term in order to categorise the empirical facts. With sufficient field observation time, the classroom teacher has thus classified the frequency of 30 (deductively assumed) cases and found a concordance between the deductive theoretical and inductive empirical world. This may indicate that the R-I in some way reflect what is actually going on in the classroom. An R-I mode that is faithful to the everyday realities, where substantive learning areas are carefully induced from empiri, can ensure that the teachers perceived 'teaching reality' (theory) is closely related to (the lack of) students daily significant learning realities. So, the teacher are perhaps not mistaken concerning that the students learning (based on two cases) are not so poor as the extern evaluation might indicate. Clearly, just two inductive occurrences are not sufficient to reject the extern evaluation with poor grades, but the teacher may be more tentative confident that major 'error' is not her own style of attentive teaching.

Summarized the case starts with the teachers' intuitive awareness when hard data (poor grades by external censorship) does not feel quite right (inductive mode). 'Here and now' R-I allows the teacher too doubt (abductive mode), elaborate working hypotheses (deductive mode) and seek more information or look at what data we do have in a different angle in the midst of action (inductive mode). During the short period of classroom teaching she has undergone in the following order inductive, abductive, deductive and inductive processes on the spot while conducting teaching. This can be conceptualised as R-I shown as a dialogical I-A-D-I mode.

For Peirce (1958), abduction, deduction and induction do not constitute a static order, but follow in a transformative and dialogical order during the interpretative process. Introduction of the concepts into an interpretative R-I process acts to raise awareness in the teacher practice. More specifically, the use of theory (teacher's perception of her own teaching) can, subsequent to the analysis of inductive empirical facts, be corrected by abductive processes. Abduction can thus not only directly influence the selection of (theory) deductive consequences, but also ensure that the theoretical world (the teacher's hypotheses of her own teaching) is developed further in

accordance with the empirical one (the students learning).

Hypothetically, at this point, the teacher is faced with three choices. She: (a) pass over and ignore this type of abductive process and allow the external evaluation to emerge as the dominant constructive factor; (b) reject her theory because of possible biased focus; or (c) she can modify the theory such that both the external evaluation and her teaching can direct the analysis of the students learning process. In this case, the classroom teacher selects the latter alternative, (c).

One important premise of the framework of R-I-K emphasises the teachers' spatial 'here and now' location. On the basis of the example, the teacher must rely on periodical and systematic observations of learning activities in the classroom. In accordance with the issue to be examined, the classroom is the physical point of departure for an interpretative activity. The quality of the abductive, deductive and inductive hypotheses is in other words based on the teachers' physical presence and observation in the classroom. This physical presence enables the teachers' horizon of understanding or a circumspective activity involving casting around for interpretations and meaning.

Theoretical and practical implications

Theoretical remarks

There are both theoretical insights and practical or managerial implications which can be drawn from the R-I-K framework. It is important to stress that "*only reflective intuitions, in other words, intuitions that are informed in situ by a cautious examination of the reflective significance of intuitive aspects, are to be taken into consideration*" (Åsvoll 2012, p. 13). Although many teachers and managers can become reflective-intuitive, some do not. This might be due to many factors, ie. barriers concerning local culture not encouraging reflection (Russel 1993) and experienced lack of (reflection) time in action demanding situations (van Manen 1995) etc. There seem to be more factors contra reflection and especially R-I than pro. And it's important to note that such reflection is not an aim in itself. Molander (2008) shed light on this saying that;

"because reflection is as fallible as other ways of gaining knowledge, it is not at all certain that a reflective or reflected practice is better than a non-reflective one. It depends on how

well the reflection processes have managed to improve the overall knowledge (in action) of the agent(s) in question” (p. 20).

Translated to R-I, that is to say, R-I is not an aim in itself. R-I is not self-validating or self-justifying. As stated by Molander (2008) *“no type of reflection can claim infallibility”* (p. 21). In my view R-I must sometimes rest on an unpredictable and ‘not-at-home’ way of being-in-the-world. However, management practice that do not allow time for R-I could end up as non learning practices. My thesis is that management practice needs managers who can be R-I at the right time, and at best, only at the right time. This thesis stress the need for further research within the perspective of R-I tacit knowing. There are different ways of pursuing such a research further. One way of pursuing this research (which I personally would prefer) is by a phenomenological approach. I think a phenomenology of reflective intuition must proceed essentially by examples. Is there anything that may be called “phenomenological reflective intuition”? Yes, I think. Maybe a precondition for an R-I phenomenology is that there should be a necessity of immediate action based on an interwoven reflective (abduction, deduction and induction) intuition (subsidiary awareness). Even though what is immediate or not depends very much on the practice in question, and there is never only one true description, R-I may be relevant to show some of the varieties and complexities of management/teacher practice.

One theoretical concern I would like to address is; do R-I differ qualitatively from the famous terms from Schön’s reflection-in-action? If the answer is yes, exactly how can these differences be explained and shown? Apparently it seems like Schön’s term action is just substituted with intuition. So what may be gained by replacing action with intuition? More concretely; what may be gained by introducing abductive, deductive and inductive reflections into intuitive awareness? Maybe one answer is to be found in the subtle distinction between reflection- and knowing-in-action. For example a skilled performer adjusts his responses to variations in phenomena. The performer responds to variation rather than surprise because the changes in context and response never cross the boundaries of the familiar (Schön, 1987). However, when the boundaries of the familiar is crossed it is time for experimentation and a reframing—in action—of what we are doing, says Schön. This is what Schön calls reflection-in-action; characterised by the fact that it reshapes our thinking and our action while we are acting. It seems like reflection-in-action in some ways is fundamental different than knowing-in-action distinguished by *“on-line anticipation and adjustment”* and *“continuous detection and correction of error”* (Schön, 1987, p.26). Even though Schön says that R-I-A is not

excluded from K-I-A, it seems unclear how they may interact or intertwine. In my view this may be a too strong (and unclear) distinction (both theoretically and empirically), because the dynamic and concurrent appearance of these phenomena are not sufficiently valued.

In other words: when a situation tells us something we did not know before, we have been doing some sort of reflection; in Schön's view either by R-I-A or K-I-A. In the extension of Schön's concepts, I think the framework of R-I (with abductive, deductive and inductive aspects) may serve to elaborate and illuminate this 'some sort of reflection' and how R-I-A and K-I-A may interact. In short, abductive R-I may correspond to reflection-in-action (doubt, surprise) and deductive-inductive R-I may be in accordance with knowing-in-action (testing, adjustment).

Reflection-in-action captures the moments following and preceding a classroom decision made by a teacher. In a sense, R-I also takes place in real classroom time as shown by the example. However, it is qualitatively different from the uninterrupted flow of knowing-in-action and reflection-in-action. Unlike, for example, Schön's (1987) expert reflective practitioners, RI teachers not only have a capacity for thinking creatively through reflection, but at the same time they also maintain an intense intuitive awareness of potentially-important aspects of the situation.

Practical implications

What may be gained by emphasizing reflective intuition in management practice? Although this paper does not touch deeply upon management and teacher practice, it does seek to offer another conceptual system by which to consider management and research (some of the implications are first described in Åsvoll 2012). Moreover, it seems that the tacit/explicit dichotomy puts too much weight on the process of externalisation or codification although more attention should be paid on the question concerning what kind of knowledge is valuable in the first place. The teacher's dialogical and 'unsecure' use of abductive, deductive and inductive R-I modes may help in order to decide what kind of knowledge which may be considered tentatively trustworthy (i.e. objective evaluative or personal phenomenological knowledge) in the first place.

Obviously, when the teacher expose her actions based on R-I mode she can put herself at risk. An awareness that the risk element in RI involves different aspects of knowledge better equips a teacher to identify and measure the risks inherent in the situation and to explain the

grounds and the RI aspects on the basis of which decisions were taken. A sharper awareness of the role that RI plays in evaluating ‘here-and-now’ actions and decisions can contribute to an improved understanding of the limitations of both reflective/explicit and intuitive/implicit aspects of knowledge. One practical implication is that RI can be used to remedy shortcomings in such teaching plans based on a priori reflection and explicit knowledge alone, and it can help to create and resolve unpredictable issues. An implication of this is that the execution of actions based on RI is often not predictable in advance.

Such reflective intuition is a fairly short-term feature, which can be viewed as an approach to enable teachers to feel some degree of ‘controlled uncontrollability’ over their classes – an aspect often lacked by novice teachers. This ‘controlled uncontrollability’ as an expression of a sharper awareness of the importance of RI may help teachers and managers to take responsibility for their actions, as there may be no explicit knowledge or a priori reflections to support ‘here-and-now’ decisions.

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ⁱ Shotter (2006), who relates Polanyi's idea of subsidiary awareness to time, suggests that subsidiary awareness can provide an 'anticipatory sense' of what is to come next in an ongoing process.