

UNDERSTANDING EXPERTISE

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**Submitted to OLKC 2006 Conference
at the University of Warwick, Coventry on 20th - 22nd March 2006**

1. INTRODUCTION

This paper aims to continue along a line of research (Bou and Sauquet, 2005) focusing on how professionals develop and use knowledge in practice. It is aligned with a stream of research that understands that knowledge and practice have a rich, complex and productive relationship.

In this paper we take a closer look at the issue of expertise as part of the exploration of knowledge and practice. This is a central issue for professionals as they claim to have a special degree of expertise. However, expertise is a problematic issue. Philosophers have accurately questioned the possibility of developing expert judgement (Wittgenstein, 1953) on the basis of the problems involved in developing *expert* judgement and its complex relationship with rules, experience and learning. Indeed, this last statement comprises many of the central issues encountered in this research.

Early on, interest in expertise was acknowledged and developed mostly within cognitive parameters (Simon, 1991). The dominant claim is that expertise would be the natural result of the process of mastering specified bodies of knowledge. Empirical studies on domains such as chess (Chase and Simon, 1973), physics (Larkin, McDermott, Simon and Simon, 1980), programming (Adelson, 1981) seem to have lent support to this claim. Professions are thus, perceived as being bounded to specific sets of rules. Despite the dominance of the approach there have been some attempts to frame expertise in a manner that assigns the expert a more active role (e.g. Schon, 1983) or which problematise practice (e.g. Lave, 1988). It is our interest to explore expertise in these kinds of projects.

This paper is the report on research conducted to explore and document the meanings of expertise in different organisations. Data was gathered longitudinally in two organisations and collected by means of participant observation and in-depth interviews.

The paper is divided into three main parts. First, we will analyse the different approaches used to study the differences between experts and novices. We will not

attempt a comprehensive literature review. Rather, we will focus on the mainstreams under which relevant studies of expertise have been conducted and clarify the basic assumptions and goals prevalent to each stream. Second, the empirical study will be documented. The fieldwork entailed an ethnographic study of experts and novices in two service companies. After presenting the empirical results we outlined the scheme of a new general theory of expertise which may be complementary to other viewpoints previously mentioned. Finally, conclusions and further implications will be presented.

2. THE DOMINANT VIEWPOINTS OF EXPERTISE

Although interest in expertise runs parallel to the awareness on knowledge, expertise and experts came as a breakthrough in the late sixties with De Groot's (1965) works on master chess players. Current interest in knowledge and knowledge management within the organisation has renewed the importance of reaching a good answer to the question of what makes an expert and the process involved in becoming one.

For years, the most common approach for the study of expertise has been the cognitivist school. This trend leads away from focusing on observable behaviour towards the study of the mental processes. Despite this common framework, the way different authors have approached the phenomenon differs.

For the purpose of clarification we classify the contribution of different authors introducing a flow perspective which refers to the specific *inputs* of the mental processes, to the characteristics or steps of the *process* or if they focus on the *outputs* of such a process (see Table 1). We assume that this flow perspective is coherent with the main trends of cognitivism (Sauquet, 2004).

If we pay attention to authors who tackle the specific characteristics of *inputs*, we find that some of them highlight the relationship between expertise and the accumulation of knowledge (e.g. Bédard, 1989; Black, Carlile and Repenning, 2004): the expert is the one who has accumulated more knowledge. For this group of authors, knowledge is a stockpiled commodity and it should be ready to be applied in practice. Expertise is

therefore, a matter of accumulation. Two processes are then perceived as crucial: storage and recalling. For instance, Chase and Simon (1973) state that retaining in meaningful ways is the relevant aspect. That is why experts organised their knowledge in *chunks* which are stored in memory. Chunking means encoding information in a meaningful way. This means that experts structure their different experiences in categories of information instead of individual elements. As a consequence, the more expert a professional is, the more complex and the larger their chunks. In sum, as accumulation and storage are crucial, good storage structures are what make the difference.

Second to storage, accessing to the available stocks of knowledge is equally important. Thus recalling is the central process of authors who underscore the outstanding role of *memory* (e.g. De Groot, 1966; Ericsson and Chase, 1982; Posner, 1988; Ericsson and Polson, 1988). For these authors, the attributes of this superior memory is not innate. It is based on repetition (e.g. Ericsson and Chase, 1982) or deliberate practice (Ericsson et al., 1993).

Although this is the general view held on expertise it is not the only one. Gardner (1983) defends the idea of expertise as an innate capacity; though his main contribution is the identification of different competencies and the importance of a good matching between competencies needed and competencies actually possessed by an individual. In fact, he states that exceptional performance results from a close match between the individual's intelligence profile and the demands of the particular domain. Therefore, expertise – or the possibility of becoming an expert – is understood within the singularity of each individual, offering a quite contingent approach to expertise.

A related but different approach stresses the differences between experts and novices when they are running the mental *processes* (see Table 1). Differences in the way those processes are run seem to be crucial to understanding differences among both experts and novices (e.g. Simon and Simon, 1978; Chi, Feltovich and Glaser, 1981). For instance, quality of problem representations and the way problems are categorised marks a difference between experts and novices (e.g. Chi et al., 1981; Day and Lord, 1992; Larkin et. al., 1980; Silver, 1981).

In turn, differences in problem-solving strategies between experts and novices have been widely documented (e.g. Larkin et al., 1980; Jeffries et al., 1981; Chi, Glaser and Farr, 1988; Johnson, 1988; Patel and Groen, 1991; Mackay and Elam, 1992; Konradt, 1992). The general understanding is that experts engage in forward reasoning to solve problems. Therefore, experts tend to solve problems from the givens. On the contrary, novices focus on goals and tend to work backwards from these goals.

Inputs		Expert as the one who....
<ul style="list-style-type: none"> ▪ Possession of knowledge or/and skill (or both) 	Anderson (1982) Frensch and Sternberg (1989) Prietula and Simon (1989) Bédard (1989); Shanteau (1992) Black, Carlile and Repenning (2004)	Experts know more
<ul style="list-style-type: none"> ▪ Retaining in meaningful or especial ways 	Chase and Simon (1973) Prietula and Simon (1989)	Experts structure information in complex units (bigger chunks)
<ul style="list-style-type: none"> ▪ Developing Memory 	De Groot (1966); Ericsson and Chase (1982); Posner (1988); Ericsson and Polson (1988)	Experts have superior memory
<ul style="list-style-type: none"> ▪ Innate capacity 	Gardner (1983)	Expertise as optimal matching between individual inherited competencies and job characteristics
Process		
<ul style="list-style-type: none"> ▪ Quality of problem representations (e.g. problem identification and representation; problem understanding) 	Simon and Simon (1978); Larkin et al., (1980); Chi, Feltovich and Glaser (1981); Silver (1981); Chi et al., (1982) Day and Lord (1992)	Experts categorise the problem and define it in a different way to novices, they go to the basis of the problem
<ul style="list-style-type: none"> ▪ Strategies for problem-solving (e.g. top-down or bottom-up strategies or forward vs. backward strategies; inductive vs. deductive strategies)) 	Simon and Simon (1978) Larkin et al (1980); Johnson (1988) Chi, Feltovich and Glaser (1981) Jeffries, Turner, Polson and Atwood (1981); Chi, Glaser and Farr (1988) Patel and Groen (1991); Mackay and Elam (1992); Knoradt (1992); Schenk, Vitalari and Davis (1998)	Experts use forward strategies to solve problems
Outcomes		
<ul style="list-style-type: none"> ▪ Differences in performance 	Chase and Simon (1973) Bereiter and Scardamalia (1986); Davis and Solomon (1989); Schaper and Sonntag (1998); Ericsson and Smith (1991); Ericsson and Charness (1994); Bédard and Chi (1993); Shanteau (1992); Abdolmohammadi, Searfoss and Shanteau (2004)	Experts perform faster, better and so on

Table 1 - Traditional Terms of Comparison between Experts and Novices

Finally, some authors also focus on the *outputs* of these processes to study the differences between expert and novices. One common assumption of the authors who develop their theories under the cognitivist approach is that they all state the experts' superior performance over novices. In vein with this idea, they based their study of expertise on analysing "top performance" and on appointing those individual attributes or conditions to achieve it. Especially relevant within this group is the work done by Chase and Simon (1973); Bereiter and Scardamalia (1986); Davis and Solomon (1989); Ericsson and Smith (1991) and Shaper and Sonntag (1998). For these authors, top performance is the evidence of the existence of special cognitive abilities (e.g. the capacity to structure information in meaningful and special ways) or cognitive processes (e.g. problem-solving strategies). Table 1 summarises the traditional terms of comparison.

Despite this, studies on expertise differ in terms of their focus; they do however share some common features. First, these studies have been conducted in experimental settings. This makes the experimenter determine the ex-ante definition of the problem, and he also works on the premise of a best-way to solve the problem. Some exceptions to this are Shaper and Sonntag (1998) who based their study on observing maintenance technicians while diagnosing. As a consequence, most of the studies have appointed individual attributes or conditions in the comparison between experts and novices, paying little or no attention to contextual aspects or idiosyncratic elements of the tasks. In reference to this last aspect, Shanteau (1992), Brucks (1985), and Punj and Stewarts (1983) consider the influence of task characteristics in the development of expertise.

Second, the need to study the underlying cognitive processes of actors makes many researchers resort to verbal protocols. This means that the actor should think aloud when he is solving the problem. De Groot (1965) established the basis of this methodology with chess players and it later became widely used (e.g. Ericsson and Simon, 1980, 1984; Bouwmann, 1984; Mackay and Elan, 1992, Shenk et al., 1998). As many authors focus on study performance differences between experts and novices, this obliges researchers to compare a) well-defined tasks in which b) performance measures are easily gathered.

Ultimately, these studies assume – whether they state it or not – an implicit “cognitive ideal” both in the framing of the problem as well as in the solving process which have been determined a priori by the researcher.

After the analysis of the dominant ideas within the field of expertise, main differences and common features, it is important to underline some assumptions under which these studies are conducted. First, as previously mentioned, most authors consider knowledge as an external object. It is present in the world, in the cultural milieu and ready to be obtained through specific means. It is an available resource and stock. Thus, the main challenge is how to store knowledge and keep it available in memory.

Second, these studies assume that there are differences between experts and novices and that there is an evolution towards expertise. Depending on the meaning of expertise, this transition will consist on accumulating more knowledge or developing specific abilities or memory.

Finally, beneath this cognitivist approach there is an implicit knowledge theory. For these authors, whatever the problem, it is *per se* defined, objective and stable and, hence, it is waiting to be understood and solved. This stable problem is faced by the individual who has to train and prepare himself to approach and solve the problem. In a way, it echoes Plato’s approach to knowledge and truth. As a consequence, the way to frame a problem and solve it should not differ from individual to individual. There are only different types of problems. These ideas comprise a correspondence theory of knowledge.

3. ALTERNATIVE STANDPOINTS OF EXPERTISE

Although dominant, the cognitivist perspective is not the only one used to approach the study of expertise. This is partly due to the unsolved problems stemming from within this stream of thought.

On the one hand some studies do not show the presumed efficiency of experts over novices (e.g. Mehle, 1982; Voss and Post, 1988; Biedermann and Shiffer, 1987; Lesgold and Lajoie, 1991; Fuller and Unwin, 2004; and Summer et al., 2004).

Second, from a methodological point of view, verbal protocols although widely used, present limitations in the identification of heuristics (Schenk et al., 1998, pp. 32-33). Authors state that “heuristic use is often informal and occurs without awareness on the part of the problem solver. Thus, it is feasible that heuristic behaviour did indeed occur ..., but because the subjects were not aware of this behaviour, they did not verbalise the heuristics”. In the same vein, Schaper and Sonntag (1998) state that though they use verbal protocols, the validity of their results may be validated in real contexts.

This last consideration points to a second group of limitations which states that experimental situations offer a weak representation of processes that take place in real contexts. In actual workplace settings, the level of uncertainty is higher, the tasks are complex and they are not divided into micro-operations and, finally, it is extremely difficult to define or quantify successful performance.

Third, most of the studies concerning expertise are framed within problem-solving or decision-making situations. However, although our daily work includes these types of situations, it is not restricted to them. Indeed, practitioners are rarely conscious of solving problems. Moreover, in such a tradition it is the researcher who defines whether a problem exists or not. The assumption is then that problems are there waiting to be solved. While this explains a number of situations, it does not consider that in complex situations it is the practitioner who may turn a fact into a problem. It should be a “problem” for him.

Fourth, the concept of expert has been associated to a number of years of ‘practice’ which just involves repetition of tasks. This definition is quite controversial. For instance, Hatano and Inagaki (1986) distinguish between “routine expertise” which is focused on solving familiar and standard problems and “adaptive expertise” which develops *ad hoc* strategies for solving unfamiliar problems. So, not all experts are the same, and neither is all accumulated experience. In the same vein, Bereiter and Scardandia (1993) state that expertise is not only experience, considering the latter as

amount of work performed. They stress the role of an individuals' attitude and the existence of experienced non-expert and experienced experts. Considering the lack of a unified definition for an expert, some authors advocate claiming the notion of "expert" as a relative concept (Shanteau, 1992; Fuller and Unwin, 2004) and accepting that it will have different meanings in different contexts.

Fifth, most of the studies that focus on the concept of expertise as accumulation of knowledge rest on the idea that previous knowledge is an antecedent that guides action. This rationalist view is quite controversial and confronting perspectives have revealed its shortcomings. For instance, Gilbert Ryle (1949) states that in order to perform a sensible action we do not have to think first and then act. Ryle stresses the idea that people do not think via a set of rules or procedures and then act, but in practice that it all happens at the same time.

Finally, as most of these studies have focused on individual conditions, it has prevented researchers from considering contextual, cultural or professional-related aspects in the traditional study of expertise.

Leading away from this pure cognitivist level of analysis, there are some alternative views on expertise. Schon's seminal works (1983) describe an expert who does not conform to being a user of technical rationality. According to him, professional practice would not be the result of the application of pre-specified bodies of knowledge and on the contrary, his expert reflects in action, gathering awareness of what is happening and introducing his own elements and even values in the problem-solving process. For instance, in his famous example of the senior and junior architects, the expert helps the novice to reframe the problem through a reflective conversation with the situation. Unlike the novice, he is not interested in making the shape of the building fit into the slope of the terrain. He focuses on his idea of a good building in which to educate children. He anticipates implications. His expert shapes reality through goals and values.

In turn, Lave (1988) tackles the problem of knowledge transfer to stress that practice develops in specific places and therefore, contexts are not mere recipients of predetermined sets of activities but are to be analysed with care as they actively shape

the unfolding of the activity. Her expert does not merely transfer knowledge, but shapes the reality considering both material and social context.

In this vein, there is substantial research that questions the rationalist claim, according to which canonical knowledge is distributed and applied within organisations (Orr, 1990; Brown and Duguid, 1991) and the reports which stress the importance of the social milieu and the relevance of the positions individuals occupy (Lave and Wenger, 1991).

Traditional viewpoints of expertise have pointed out that expertise is the natural outcome of practice, though other inspiring studies have highlighted that experts' ability is not merely linked to hours of performance. For instance, some works stress that experts differ from novices in their ability to break official rules (Scribner, 1986; Dreyfus and Dreyfus, 1988 and Laufer and Glick, 1998) or in their ability to organise action (Lewin and Rupp, 1928) or to intuit (Sadle-Smith et al., 2004; Leonard and Swap, 2005) or in the tacit dimensions of their knowledge (Leonard and Swap, 2005). Therefore, these authors add new terms of comparison between experts and novices: their relationship with the context and the kind of knowledge.

Finally, some authors offer a perspective of expertise linked to social aspects. For instance, Burdenson (2003) coins the term "perceived expertise" to point out the importance of being legitimised as an expert within the group. This viewpoint is implicit in Lave and Wenger's (1991) emphasis on participation where the possibility of the interaction between the novices and the group leads to becoming a full member of the group and thus achieving expertise. As Bruner aptly pointed out, learning is nothing more than becoming.

Stressing this social aspect, Engeström (2004: 145) shifts away from a concept of expertise linked to individual aspects. According to him "there is a new generation of expertise, not based on supreme and supposedly stable individual knowledge and ability but on the capacity of working communities to cross boundaries, negotiate and improvise 'knots' of collaboration in meeting constantly-changing challenges, reshaping their own activities...". Analysing this idea we find similarities with Brown and Duguid's (2000a) concept of 'ecologies of learning' in which overlapping communities

of practice organise themselves in order to learn from each other and constantly evolve. Indeed, within the CoP approach (e.g. Lave and Wenger, 1991; Brown and Duguid, 1991 and Wenger, 2000), authors pay especial attention to the relationships between experts and novices. However, one of the most interesting aspects of this discourse is that expertise depends on the existence of a community. For instance, Wenger (2000: 234) states that “deep expertise depends on a convergence between experience and competence”. And it is precisely the community which defines what it takes to act and to be recognised as a competent member.

Taking all these contributions into account we aim to shed light on the field through the study of experts and novices in two different companies. Company A (J.O.B.) is a public employment service company devoted to job placement. Company B (AKUA¹) is an international management consultancy firm. It delivers industry-focus assurance, and legal and advisory services. Not only do they belong to different sectors, but their organisational structures are also different. Whilst the former is a simple structure, the latter is a professional bureaucracy. It is an exploratory study and data was gathered longitudinally. Before examining the empirical data, the following section explains the details of how the research was designed.

4. THE EMPIRICAL RESEARCH DESIGN

Company A, J.O.B., is a public employment service company devoted to job placement. It delivers a range of services to local companies and the unemployed in order to help them either to find a job candidate or a job. The structure of the company is quite flat. There are only four hierarchical levels and few possibilities for vertical promotion.

Each department offers a different service and has a certain degree of autonomy. Despite this independence, the organisation has formalised all of its processes as part of its quality system implementation based on ISO standards. According to Schemenner’s (1986) service classification, J.O.B. provides a mass service and therefore, it has a high degree of labour intensity but a low degree of customisation.

¹ J.O.B and AKUA are pseudonyms of the participating organisations.

Company B, AKUA, is an international management consultancy firm. It delivers industry-focused assurance, legal and advisory services. AKUA is quite hierarchical. The system entails a vertical ladder and it is expected that a successful consultant will focus on climbing the ladder as high as possible. Its structure meets the requirements of a typical professional bureaucracy and its service is a professional service (Schemenner, 1986). This means that the service has a high degree of labour intensity and a high degree of interaction with the client in addition to customisation.

Qualitative methodology was employed in the study. Table 2 offers a summary of the data collection methods used.

Data Collection Methods	
- Documentation	✓
- Participant Observation	<ul style="list-style-type: none"> • Daily activities; informal situations; meetings; moving to different locations; + four workshops • 35 practitioners • 58 recorded hours of daily work → 584 transcribed pages • Field notes: 544 pages • Photographs
- In-depth Interviews	26 (aprox. 42 hours)

Table 2 - Data Collection Methods

One important characteristic of this study is that we accompany experts and novices during their daily work – shadowing. Moreover, the object of analysis has not been special problem-solving situations or business crisis but we focus on studying the actual practice of practitioners

5. COMPARING THE PRACTICE OF EXPERTS AND NOVICES IN TWO DIFFERENT COMPANIES

5.1. The Job Placement Practitioners in J.O.B.

According to J.O.B., expert and novice practitioners may be identified taking into account a) time: number of years of experience and b) outputs as results in the job placement process. Hence, our experts were those who had been in the department the longest and who had a better score in placing unemployed job-seekers in employment. This company definition coincides with previous approaches in the literature linking expertise to accumulation of knowledge through time and to superior performance.

After the analysis of our empirical data we can highlight certain findings. First, the kind of knowledge used by experts and novices coincides but only to an extent. In fact, in J.O.B. both, expert and novice follow the same standard procedures. However, a closer look offers a picture in which compliance with the procedures has a different function in the relevancies assigned by expert and novice (Bou and Sauquet, 2004a). It was evident in the analysis that our novices focused on canonical practice, being much more concerned with following the rules and procedures of the organisation and mainly resorted to explicit individual knowledge. On the contrary, the expert was more oriented toward practice, learning more on hunches, intuitions, feelings and soft skills.

For instance, during the interview with job-seekers, repeating the information aloud while the fields are entered into the database is apparently a common habit for expert and novice, although the latter only does it if and when he remembers to do so. The novice resorts to his academic knowledge and reminds us that it is a technique. The expert's arguments are different:

R: And why do you do that? (speaking out loud)

E: So as not to have that awkward silence when you're writing down a candidate's personal details. I try to put myself in the other person's shoes and try not to lose sight of the fact that I'm interviewing "you", that I'm communicating with "you". Right now I'm taking down your details but I'm

talking to you at the same time... I mean, we have each other's attention the whole time (...) I manage to get the other person to listen to me (...)

R: So how did you come up with this?

E: Well, in the first interviews I ever did, I noticed how people would sort of tune out. They were just small observations: things like the interviewee leaning back in his chair. I mean I noticed how at that point the interviewee was saying: "Great, he's writing, so I can switch off". The other person had seen that I was writing and this made him feel uncomfortable and nervous. I mean, I tried to do other things like shuffling through papers, or... I realised it was one of those times when writing was not really appropriate, because the other person didn't feel at ease. Neither did I, actually. Because I was writing while the other person sat there watching me and they could see that I was uncomfortable as well. So, I started to repeat what I was writing – out loud. Not during everything we did, just for some of the questions (...) and when I discovered that they were answering... not that they were answering per se, but that they had just given me the information and (...) in the database, it would quite often be the case that, as they could see what I was typing in, they would look down at the telephone number and say, "No, it's not 4-5" and I would say, "Oh, sorry". And it even had its plus side for me.

For the expert, speaking out loud is more than a technique. He avoids an uncomfortable situation for him and for the other person. Moreover, he uses it in order to complete all the information needed as the job-seeker is the one who finishes the sentences. He also uses the technique in order to avoid possible mistakes due to the fact that he allows interviewees to see what he is writing. The use of this approach has nothing to do with remembering a theory but is incidental. Hence, in the daily routine while he was interacting with an interviewee, he found himself repeating the information out loud and afterwards, he could see that this technique worked.

According to the standard procedure, entering general data in the database should be done once the previous candidate's professional experience has been gathered. The novice follows this course of action because, as he says: *"We agreed with it (...) we thought it was much better to leave this information till the end as it is very "cold" and*

structured. (...) It is in the procedure (...)”. By contrast, the expert enters this data first. In his opinion, he changes the order because this information goes into the database first and because he thinks there is not much difference.

Therefore, the role that individual explicit knowledge plays is different. For the novice it is crucial whilst the expert relies more on individual tacit expressions of knowledge. For the latter, intuition, feelings and perceptions take on more importance. For instance, due to the scarcity of resources and in order to give a good service to the employer’s company, one of the main requisites in order to be considered a good candidate is to be motivated: to be willing to work. The expert relies on his feelings in order to perceive if the interviewed person is willing to work or not. It is not rational. It is a hunch. On the contrary, although novices also use their intuition to consider this willingness, they try to confirm their suspicions by developing some “tests” which give them more objective proof as to the motivation of the candidate.

Second, not only do experts and novices differ on the type of knowledge they resort to, but their actions also differ. Hence, although some observable acts apparently seem to be the same, they constitute two different actions with different knowledge bundles and at the same time with different scales of relevance.

For example, when practitioners are interviewing job-seekers in order to find out the professional profile of the candidate, they ask for and make a photocopy of their identity card, which is a practice that is not in the procedure. Nevertheless, the novice does it because he observed some of the technicians also doing it when he first started in the job. This is an example of vicarious learning (Bandura, 1977) quite frequently used by novices.

The novice understands that this documentation is required in order to have proof that the person actually came to the company and as a tool in order to correct possible data entry mistakes. For him, this is an informal requirement of the procedure. However, the reason the expert provides for making a copy of the identity card is a different one. Indeed, as remembering the candidates is important, experts resort to the photograph on the identity card in order to a) avoid mistakes and b) help them remember. It is a tool or a memory aid.

Moreover, data reveals that experts and novices were not performing the same practice. Indeed, a novice's job consists of gathering factual data during the interview, entering as much data as possible into the database and at the same time trying to avoid the use of subjective expressions which may lead to misunderstanding in the event of another practitioner reading the report. He fills in the scheme trying to maintain accuracy and technical aspects. At the same time he is required to do the job in forty-five minutes. Once the candidate has been interviewed and the data entered into the database, practitioners should select candidates according to the job offers and pass this information on to the salesman. This practitioner is in charge of going to the company to present possible candidates. At this final stage the novice focuses on giving objective and technical data to the salesman and therefore, mainly reads from the database (see Table 3).

Process Phase	Novice	Expert
Interviewing the Candidate	<ul style="list-style-type: none"> ▪ Focus on: procedure, accuracy, technical aspect ▪ “Doing the job in 45 min” ▪ Technical knowledge ▪ Questions to verify feeling ▪ Remembering data 	<ul style="list-style-type: none"> ▪ Focus on: candidate’s story ▪ Understanding ▪ Feelings, hunches ▪ Intuition ▪ “Getting a picture” ▪ Visualising ▪ Remembering the person and his story <p>+ Innovation + Omits formalised questions</p>
Selecting Candidates and their “Selling”	<ul style="list-style-type: none"> • No collaboration • Giving objective data • Reading from the database 	<ul style="list-style-type: none"> • Collective Activity • Creating a story • Story telling <p>Helping to remember Wining salesman’s trust</p>

Table 3 - Differences between Job Placement Practitioners

In contrast, the expert's goal consists of a process in which winning the interviewee's trust through attitude and personal aspects plays a central role. His aim is to “get a picture”, visualising the interviewee and remembering him – the person and his story.

Hence, the expert emphasises data that evokes the person, the story and the interview. In the final phase of the job placement process, proposing candidates is more a collective than an individual activity. Using his own and other technicians' information on the candidate, the expert is able to tell the salesman a story full of details. "Telling the candidate's story" is how the expert provides data, wins the salesman's trust and helps him to remember. The expert designs a story taking into account what he remembers from the interview (relying on the information from the database) and the input of other technicians who also met the candidate. The use of a story livened up with anecdotes and quotes related to the candidate helps the salesman to "remember" and feel confident about a candidate that he has never met. For the expert, helping the salesman to remember and winning his trust are crucial aspects so that the salesman can successfully propose the candidate to the company. Table 3 summarises these findings.

Therefore, although apparently both do the same job, data seems to point to different actual practices. Whilst the novice fills in forms, obtains data, analyses it and resorts to objectivity to support decisions, the expert is focused on the process of creating a story: he constructs a coherent plot and he tells the story in such a way that he is able to convince and make others "visualise" the candidate and his situation.

Expertise in J.O.B. is related to the ability to perform within a system (the organisation), complying with rules and procedures, but in a way in which these are taken advantage of and used for another purpose, but one that in the end helps the organisation as a whole. Experts in J.O.B. seem to reframe (Schon, 1983) but in a different way from Schon's practitioner. Schon's expert reframes problems whilst our expert reframes his job as a whole, reconciling at the same time the demands and needs of different stakeholders. In essence, he is a reframer.

5.2. Management Consultants in AKUA

AKUA defines an expert consultant as one who has accumulated a lot of general (e.g. technical knowledge) and specific (e.g. industrial knowledge) knowledge. This definition is coherent with Simon's description of an expert as one who had acquired a substantial amount of domain-specific knowledge, accumulated over time (on average

he refers to a minimum period of ten years). It is also coherent with expectations that the professional bureaucracy sustains the development of individual-explicit knowledge (Lam, 2000). As a consequence, we could assume that the role of explicit knowledge – both individual and collective – should be more relevant than other types. However, our data does not seem to point in that direction.

Research on expert and novice consultants (Bou and Sauquet, 2005) shows evidence that the combination of different types of knowledge used in practice (bundle of knowledge) by the consultants evolves in a different direction from that predicted by the literature. According to knowledge literature, experts would display steady increments in their individual explicit knowledge base. However, at different rungs on the hierarchical ladder, the prevailing knowledge that practitioners resort to in practice changes.

For instance, on the lower rungs of the hierarchical ladder (novices), practitioners quite often resort to explicit knowledge (individual and collective) and to implicit collective rules. However, when practitioners reach higher positions in the hierarchy, explicit-individual knowledge (e.g. technical knowledge) turns out to be less crucial and becomes subsidiary. On the contrary, ‘know-who’ and collective tacit knowledge are especially relevant in order to interact with superiors and to understand underlying corporate messages. ‘Know-who’ knowledge comprises not only knowing who is who within the organisation, but it also implies detailed and subtle components. For instance, consultants resort to this type of knowledge in order to know which member they should approach and how; to understand a partner’s body language; or to understand the implicit messages of his words. This definition of ‘know-who’ knowledge differs from that used by other authors. For instance, Leonard and Swap (2005) called know-who the knowledge of the network that enables us to fill knowledge gaps. For these authors, it is a type of knowledge linked to social capital.

These results do not meet Lam’s ideas or the company official definition of an expert. Although it is supposed that the professional bureaucracy would foster individual explicit knowledge, this is not the prevailing knowledge when acting. Furthermore, according to practitioners this type of knowledge has some limitations at the moment of

acting and as a consequence they should resort to other types of knowledge. The following excerpt illustrates this point of view:

“... [they] could give me the theory of this subject, but I thought it was going to be more valuable to get others’ experience... it was going to be more useful than the theory”.

Hence, individual explicit knowledge is not the prevailing knowledge. Results show that know-who or social knowledge is gaining more and more importance for experts. To understand why this is the case we have to look elsewhere and assess the role HR policies play. Actually, the hierarchical ladder is the one which rules the existence of the practitioner. It means that in order to survive in this organisation you have to accept the informal premise “up or out”.

Hence, although consultants focus their attention on how the consulting process is run, which resources to use and how to handle client encounters, the higher they are in the hierarchical ladder the more important their internal selling becomes. At this stage the consultants are neither concerned with becoming more knowledgeable, nor with achieving client satisfaction. Their efforts are focused within the company: towards its internal market. They have to read between the lines of the organisation’s messages and discover who the key players are; how best to approach them; identify the organisation’s strongest divisions and, therefore, who has greater possibilities of becoming a new partner. To know a partner implies more than getting to know superficial information about a person’s likes or dislikes, for instance. It implies being able to understand the implied messages expressed by their words, gestures and/or body language.

However, the need for and the importance of this social knowledge is not formalised or recognised by company policies (e.g. Human resources) which, on the contrary, stick with the idea of the official expert. The comments of a senior manager illustrate this situation:

***Senior Manager:** In that case it means that there is a formal and an informal structure. The formal structure is designed for performing the job, the day-to-day work. And the informal structure for developing as a*

person (...) you might have tools (...) but no tools can tell you how to behave. And this is an organisation that is not hierarchical, in theory. Although, even if it were very hierarchical, hierarchy doesn't come in little boxes. I mean, hierarchy comes from informality, because in theory a consultant can deal with a partner. That is, there is no chain of command as there might well be in other organisations. But nobody would dream of going to speak with a partner directly, not even if you were a consultant. Isn't that right?

(...) We were just commenting on that over lunch – here you sign a normal contract, your professional contract, and then you sign an emotional contract that says: "If you make a real effort, someday you'll be made a partner". But you won't see that written down anywhere (...) And people work with that point of view towards the future (...) And starting off from there, in that case, we can see the informality of the organisation, because it's built on the basis of an un-written commitment.

(...) I have two things to add: one, I really like having my own view on things, but then I try to triangulate. I mean, to look and see if other people think more or less the same way, or to look for situational behaviour where everybody goes to the same office and you say: "I think I've got it all wrong". (...) You see that there's an office door with cobwebs all around it, if you're always getting into that office, man, when you come out (you'll regret it)'.

In Company B experience and hierarchy seem to develop along the same path. Therefore, the job of a novice/junior consultant is quite different to job of senior/expert consultants. The more expert one is acknowledged as being, the more complex the tasks and the more variables are considered by the practitioner. The distribution of tasks and positions are predefined by the organisation and therefore, job boundaries are clearly established. For instance, the director has the responsibility of negotiating proposals with the client, whilst the junior consultant who effectively writes down the report or any other client delivery may never actually meet the client.

Experts (Senior Managers)	Novices (Managers)
<ul style="list-style-type: none"> • Practice is more complex. It takes more variables into account • Anticipate, foresee some situations • Improvisation (although they feel awkward to admit it) • Prioritise between aspects and as a consequence speed up practice • Technical knowledge is subsidiary, it is instilled in them. This makes them self-confident and they pay attention to other aspects • Usually resort to tacit-individual knowledge (to interact with clients) and to tacit-collective knowledge (to interact with partners) • Know-who more complex and subtle, tacit components prevail • Give “orders” in a subtle way • Storytelling to subordinates is frequent 	<ul style="list-style-type: none"> • Limited number of variables are considered • None, or scarce anticipation • If possible, everything prepared in advance (avoid improvisation) • Technical knowledge is critically important in their daily practice • Feeling insecure when handling client’s demands • Usually resort to formal training • Know-who • Sometimes storytelling to subordinates • Making themselves visible is more crucial for them
<ul style="list-style-type: none"> • Winning superiors’ trust in order to “free” them • Assess/evaluate subordinates • Reading “between the lines”: organisational events and messages 	

Table 4 - Differences and Commonalties between Experts and Novices

After comparing experts and novice consultants, we realise that some findings fit in with the ones obtained in the case of job placement practitioners (see Table 4). The experts consider more variables and prioritise certain aspects of the task and, as a consequence, speed up practice. They also anticipate future events or client reactions and improvise when unforeseen events occur. The novice considers fewer variables, rarely anticipates and, if possible, avoids improvisation. These findings are coherent with previous studies on expert and novices (e.g. Dreyfus and Dreyfus, 1988; Leonard Barton and Swap, 2005). However, one relevant aspect is that although experts provide

instances of their improvisation and intuition to perform their daily work they feel reluctant to admit it.

The fact of feeling uncomfortable with admitting the role of improvisation and intuition is quite similar to that described by Schon (1983) between traditional legitimised experts and the reflective practitioner. In this situation, our expert also struggles with the idea of the canonical expert and, in actual fact, what he does. If he keeps in mind the idea of the canonical expert, he is presumed to be knowledgeable, and must claim to be so, regardless of his level of uncertainty. He should maintain distance from the client and stick to his role as 'expert'. He is neither expected to doubt, nor to improvise nor test. On the contrary, if the consultant plays his role as a reflective practitioner he discards this possibility. He is willing to learn with his client about the situation he faces through reflective conversations with him. There is no need for maintaining a professional, superior façade. Both consultant and client work, and reflect together, towards establishing a relationship.

It is interesting to note that although expert consultants actually play the role of a reflective practitioner they try to overlook this fact. The following excerpt from a working meeting at the early stage of a consulting project illustrates the dilemma. The practitioners are discussing which future actions are going to be taken with the clients.

Senior Manager (expert): *The thing is that although we don't need it till next month, we're going to make a list with all the information we need in order not to give the impression that we are improvising: "Listen, we need this and that and... But we don't need it till next month, so we're giving you time to prepare it".*

Senior Consultant: *But we are improvising.*

Senior Manager: *Well, yes. But we're the only ones who know that.*

In the above excerpt, the expert consultant (senior manager) is aware that they are improvising. It is a customised project and there is no standard reference. As a consequence, he and his team are improvising courses of action – on the hoof. However,

he does not want to give this impression to the clients. The expert consultant presumes that improvising is something that should be covered up.

After considering these findings we can return to our starting point. Officially, AKUA identifies the expert consultant as the one who possesses a huge amount of explicit individual knowledge. Hence, these experts could be identified in the official databases of the company. However, after considering our findings we must redefine the concept of expert.

On the one hand, data shows that the evolution from novice to expert rests on different knowledge combinations or bundles of knowledge used in practice and different scales of relevance that makes the prevailing knowledge vary according to the level of expertise. In this evolution the know-who or social knowledge seems to gain importance at the top of the hierarchical ladder. This fact relates to HRM practices, both at the formal and informal level.

However, differences between experts and novices go beyond being merely related to knowledge type matters. In this consultancy firm, the expert consultant is the one who focuses on his internal market and is able to construct his own ecosystem with its key players, supporters, enemies, opportunities and threats. He discriminates between who is relevant and who is not. Once again, the expert is a reframer but unlike the job placement practitioners, our expert consultant does not reframe his job but does reframe the system. Discussing this issue will be the objective of the next section.

6. DISCUSSION

Based on the previously mentioned knowledge, expert and novice literature, we could assume that the results of this research should point at some facts. For instance, based on previous works, (1) we assumed that if knowledge is stable and outside in the world ready to be possessed, the expert will be the one who has acquired and uses more individual explicit knowledge. (2) We assumed that if expertise is based on accumulating knowledge, knowledge repositories or alternative systems which provide

accessible individual explicit knowledge will bear some relation to individual's excellence performance. Taking into account that an expert is the one who possesses more factual explicit knowledge and superior performance is evidence of this, (3) we could assume that moving up and down the organisational structure would be based on formal evaluations which would measure to what extent practitioners excel.

After analysing the empirical data, our results do not confirm the assumption that the expert will be the one who has acquired and uses more individual explicit knowledge. Indeed, neither of our experts differs from novices through having more individual explicit knowledge. Intuition and the predominance of other expressions of what is commonly termed 'tacit knowledge' is usually a distinctive feature of high levels of expertise (e.g. Dreyfus and Dreyfus, 1980; Leonard and Swap, 2005). More precisely, our job placement expert resorts to a myriad of individual tacit expressions of knowledge to perform his job, whilst our expert consultant employs more collective tacit knowledge and the so called "know-who".

These results have further consequences on organisational terms. We assumed that if expertise is based on accumulating knowledge, knowledge repositories or alternative systems which provide accessible individual explicit knowledge will bear some relation to individual's excellence performance. Our results do not confirm this assumption. In fact, both companies resort to tangible repositories to store and keep knowledge and these are used canonically by practitioners. However, as we have seen, they are not used in actual practice. Practitioners consider that they are of little use as they do not comprise the complexity of actual practice or the different situations they face. They also ascribe lack of time as a reason for not using them. Finally, they mention that the critical aspects of practice are not down on paper, which is why resorting to colleagues' experience is a better alternative (see Table 4).

Based on traditional viewpoints of expertise, an expert is the one who possesses more factual explicit knowledge and superior performance is evidence of this, therefore we could assume that moving up and down the organisational structure would be based on formal evaluations. Our data seems not to point in that direction. For our consultants, being more knowledgeable doesn't mean succeeding in their professional careers. By contrast, possessing a certain social image among the influential members of the

organisation becomes more valuable in terms of professional advancement. That is why “internal selling” becomes crucial. In a certain way, these results are coherent with the idea of “perceived” expertise as explained by Bunderson (2003).

These findings indicate that, in contrast to previous works, our experts not only employ different types of knowledge from that used by novices, but they reframe their whole job. In J.O.B., our expert job placement technician has turned into a storyteller who is able to develop a plot which wins others’ trust in order to achieve his objective: placing his candidates. In AKUA, our expert consultant is not the “wisest” or the one who manages clients the best. He is the one who has been able to sell himself internally. It is an internal market and he should be able to handle it. His focus is internal instead of external. At the same time, being able to manage this internal market means identifying its main actors, how to approach them and how to behave. It is an ecosystem with its own players and rules within the formalised organisation.

These findings also fit in with previous works (e.g. Brown and Duguid, 1991) which state how experts shift from the canonical practice to non-canonical practice, very subtly breaking the formalised rules. Indeed, although their acts may seem similar, experts and novices carry out different practices with different scales of relevance. Hence, their priorities differ.

In sum, the difference of experts and novices goes beyond mere differences on knowledge types or carrying out different single tasks. According to our findings the essence of expertise is the expert’s ability to reframe his practice according to his new scale of relevance. Hence, although experts and novices may seem to perform the same practice, their actions are different. These results echo previous research conducted by Laufer and Glick (1998) who show the importance of the interplay between organisation rules and new meanings and motives as they are introduced by experts. At the same time, they are also coherent with the idea of the individual ability for reflection-in-action and the ability to reframe problems (Schon, 1983) as shown by the introduction of different scales of relevance. Research results suggest that experts reconstruct their practice in a similar way to the terms pointed out by Potter and Wetherell (1987: 54) as they stated that “[the] object can be constituted [...] and the person’s [...] is directed towards these specific formulations rather than some abstract and idealised object”. The

constitution of the object is the result of the interplay between individual's, the organisation's and colleagues' interpretations. Expertise would not only be an individual achievement but the result of a collective and contextual definition.

Finally, previous works on experts and novices has placed little relevance on organisational aspects and context, and that is why we did not expect to find any difference between experts from different companies with the exception of the knowledge domain to which practitioners resort. For traditional viewpoints of expertise, context is a mere container with no role to play. However, our results do not seem to point in that direction. Contextual variables play an active role and they exert influence on (a) the prevailing types of knowledge employed by the experts and (b) the reframed object, or what is the same, the aspects reframed by the expert practitioner.

For instance, in J.O.B., the organisational structure is simple and does not exert a major influence upon individuals. It is a flat organisation where promotion does not play a prominent role. In this setting, individual aspects gain more importance. Furthermore, the relationship between the practitioner (individual) and the activity is very close. The practitioner performs most of the delivery process on his own. The division of labour is low and he participates in the whole process from the beginning. As a consequence, the level of discretionality is considerable. Moreover, this close relationship with the task activities determines the identity of the practitioners. They are "professionals devoted to job-seeker placement". In addition, the characteristics of the job mean that standard corporate procedures are of limited use as they have to adapt to the specific problems of specific job-seekers.

These are some of the main aspects that influence the fact that the prevailing knowledge expressions are tacit and individual. This type of knowledge allows them to perform within the system reconciling the needs of different stakeholders (e.g. the official objectives, the diversity of clients etc.). It affords experts flexibility to use intuition and hunches. In the same vein, it is not by chance that the expert job placement technician reframes his job. Although apparently both expert and novice perform the same practice, their actions are different: their intentions are different. Actually the expert is creating stories and helping others to remember the story in order to achieve his objectives.

In AKUA, the professional bureaucracy exerts considerable influence over practitioners. As previously remarked, hierarchy is strongly established and linked to the execution of different tasks. The individual consultant does not participate in all of the steps in the process and many activities are collective. As a consequence, collective knowledge is decisive and the way work is organised fosters a high distribution of knowledge and the need to transfer roles between different steps of the process. Furthermore, the fact that there is a strict division of labour hinders the process of becoming a full member of the organisation or in Laves and Wenger's terms, Legitimate Peripheral Participation (LPP).

At the same time, the types of tasks entailed in the consulting work have a high degree of customer co-production and customisation. These characteristics increase the level of uncertainty and complexity. In fact, these aspects are fuelled by a high degree of diversity stemming from the need to deal with different customers, working in different types of consulting projects and working with different people and teams. Facing this situation, individual explicit knowledge is of little use and on the contrary, tacit expressions of knowledge gain more importance. In addition, in this setting the professional's identity is determined by the fact of belonging to that specific organisation and the position they occupy in it. They are proud to belong to AKUA. It is a distinguishing feature which makes them different from other consultants.

In this setting, it is not by chance that know-who and collective tacit knowledge prevail over others. Collective components have a considerable influence on individual practitioners and know-who, and collective tacit knowledge lets them move within a complex setting which becomes more opaque the higher they ascend on the corporate ladder. This is coherent with the fact that the expert AKUA consultant is the one who is able to reframe the system. He constructs his own ecosystem with its key players, supporters, enemies, opportunities and threats. In any case, he is again a reframer according to his scale of relevance.

In sum, how work is organised, the nature of the tasks and the organisational structure seem to play a more relevant role than that of a mere 'container' of practice. In fact, they

have an active role which affects knowledge types, certain knowledge dynamics and the concept of expertise in different settings.

7. CONCLUSIONS AND FURTHER RESEARCH

We started this paper reviewing the main trends regarding the study of experts and novices which, in general terms, focus on the individual and the cognitive processes that take place in their mind. Knowledge was considered to be context-free and available in the world at large. Hence, the expert should be prepared to accumulate as much knowledge as possible over time. As a consequence, his performance will be outstanding in comparison to that of novices.

Following our empirical study we can state that our findings do not support these beliefs. First, experts and novices differ in the composition of their bundle of knowledge employed in action. The bundles of knowledge of experts and novices prioritise different knowledge expressions.

Second, expert and novices do not perform the same actions although their acts may seem the same. So, the difference between them is not a problem of “doing the same task better, faster or more accurately”. Indeed, their actions are different.

Third, the results show evidence that the difference between expert and novices does not only consist of differences in knowledge types or carrying out different activities. In fact, experts reframe their whole practice based on their different scale of relevance. Hence, the essence of expertise lies in considering the expert as a reframer. This implies considering the expert as a reflective practitioner and creative actor.

These findings fit in very well with Tsoukas and Vladimirou’s (2001) work on organisational knowledge. According to these authors, experts rely on a body of knowledge (e.g. rules, procedures and so on) which comprise the canonical practice. These work as a tool to experience reality in the same way a blind person uses a stick. However, this body of knowledge does not play an active role, but remains subsidiary.

Their expert focuses not on applying rules (canonical practice) but on accomplishing some objectives of practice/experience. Rules, explicit organisational knowledge, explicit individual knowledge are indwelled, or in other words, tools are assimilated. This is similar to the example of a blind person. He does not have to think about how to handle the stick. This tool is already part of him. He focuses on perceiving reality. Therefore, experts would be the ones who are good at transforming experience into subsidiary awareness. Our findings match with these ideas but they go a bit further. In our understanding, the expert is even more active. He transforms “practice” or reality. He plays an active and creative role in reframing.

Finally, it is important to stress that this approach does not only focus on the actor agency. Furthermore, in this approach the nature of the job, organisational and other contextual aspects have an influence on knowledge types, their relationship with action, and they will actively determine what being an expert means in different settings.

As a consequence, these findings can offer new insights into the study of expertise in organisations which has further implications in aspects such as the type of knowledge fostered by the organisation and HR policies. Hiring, on-the-job training, career development, performance measurement and professional evaluations are closely related topics which should be reconsidered.

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