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**Towards Dissolution of the IS Research Debate:
From Polarisation to Polarity**

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Abstract

The debate between 'hard' and 'soft' research approaches continues in the IS field, but with little prospect of resolution. The debate is typically characterised by tendentious arguments as advocates from each approach offer a somewhat one-sided condemnation of the counterpart from the inimical research tradition. This paper begins by relating two fictitious tales which serve to highlight the futility of research conducted at the extremity of each research approach. The dichotomies which characterise these rival factions are also summarised. The debate is then framed in terms of the polarisation problem whereby IS researchers are divided geographically and paradigmatically into 'hard' and 'soft' camps. A variety of different strategies have been proposed for resolving the debate and these are discussed in detail. They are grouped into four categories, referred to as *supremacism*, *isolationism*, *integration*, and *pluralism*. Finally, the paper contends that the debate cannot be resolved, and offers the metaphor of magnetic polarity as a means of reflecting this. The paper concludes by arguing that it would be more appropriate to recast the debate at a macro level in order to accommodate different research agenda and recognise the strengths within each tradition.

Towards Dissolution of the IS Research Debate: From Polarisation to Polarity

“I began to wonder whether anything truly existed, whether reality wasn’t an unformed and gelatinous substance only half-captured by my senses. There was no proof that everyone perceived it in the same way; maybe others had a different impression of things; maybe they did not see the same colours or hear the same sounds I did. If that were true, each of us was living in absolute isolation.”

from *Eva Luna* (p.167) by Isabel Allende, 1987, Penguin, UK

1. Introduction

The dispute between 'hard' positivist and 'soft' interpretivist research paradigms¹ is a perennial one in the IS field. Notwithstanding this, the authors suggest that the debate should be recognised as being somewhat vacuous, since each approach has its strength and weaknesses. Indeed, if the debate could be resolved, it would have been long ago. However, given the privileged hegemony enjoyed by the 'hard' approach (Orlikowski & Baroudi, 1991, Walsham, 1995), 'soft' research will always be accorded an inferior status if it is to be judged against the prevailing 'hard' standards. Thus, the debate has to date played an important role in promoting 'soft' research to a more equal footing. This paper draws upon the concept of magnetic polarity as a metaphor which could help advance the schismatic debate. The notion that magnets have both north and south poles that cannot be isolated individually is used to argue for mutual interpenetration of polar opposites. An awareness of both the strengths and weaknesses of the various dichotomies and an attempt to accommodate them pluralistically leads to a far more complete picture. The current predilection to focus attention on one side in isolation leads to a weakening of the polar tension, hence a weakening of the dynamic of the overall research process. The paradigms are usually expressed in dichotomous terms, positivism v. interpretivism, quantitative v. qualitative, exploratory v. confirmatory etc. However, rather than being true dichotomies, these are in fact miniature hierarchies in that one end of each dichotomous pair is usually portrayed as superior to the other.

This paper is structured as follows. Initially, two anecdotal tales are used as a vehicle for conveying the futility of extremist research approaches. The main dichotomies characteristic of each research tradition are then summarised. The paper considers the manner in which IS researchers are polarised geographically into 'hard' and 'soft' camps, both of which tend to view the other as inferior. Four possible strategies for advancing the debate are identified and discussed in turn; namely, *isolationist*

¹ Usage of the term ‘paradigm’ is somewhat problematic. However, the term does have the legacy of customary usage in this debate to date. Wilmott (1993) proposes alternative terms such as ‘narrative’ or ‘approach’, and it is in this general sense that the term is used in this paper. Also, the terms 'hard' and 'soft' are used in this paper as umbrella terms to capture a conflation of ontological, epistemological and methodological dichotomies. The terms 'hard' and 'soft' have an intuitive meaning and are preferable to more judgemental and value-laden terms such as rigour and relevance (Galliers, 1995; Keen, 1991). This issue is discussed in more detail in section 2.

adoption of a single approach to the exclusion of all others; *supremacy* of one approach; *integration* of dichotomous approaches; or *pluralist* accommodation. Finally, the paper concludes with an assessment of the relevance of the debate, suggesting that since absolute resolution seems impossible, then dissolution and a recasting of the debate at a macro level may be more fruitful.

But first, the tales!

The Tale of P. O’Sitivist

P. O’Sitivist was a researcher with a problem—excessive rejection of the papers he submitted to journals and conferences, often with stinging criticism from reviewers. Believing that there must be a scientific explanation for this, and unwilling to entertain the possibility that his work was inadequate, P decided to investigate the matter scientifically. This is the story of his endeavour.

Confident that the content of his papers could not be the reason for rejection, P wondered if the core of his rejection problem might be that his paper titles had been lacking in some way. Pulling down a set of conference proceedings from which his work had recently been rejected, P scanned the table of contents. Suddenly, insight flickered—there was *something*. Moving quickly to the shelf which contained his copies of the top journal in the field, P scanned the tables of contents swiftly. Yes, the pattern seemed to be definitely confirmed—the majority of published papers had a *colon* in their title. Consulting his stock of rejected papers, P could feel the onset of a hypothesis. A quick perusal confirmed his intuition—his paper titles were almost entirely bereft of colons. Returning to the journal and conference proceedings, P began to note other aspects of these ‘successful’ titles. For example, there were many words in the titles which he did not understand. The term *esotericity* could be coined for this. Also, there were many long words. This could be characterised as *polysyllabicity*. He allowed himself a brief but triumphant *Eureka*—the structure of the paper he must write on the matter was suddenly very evident.

Firstly, all good papers should have a strong intellectual basis as a point of departure. As an undergraduate, P had briefly grappled with existentialism—mainly to see what all the fuss was about (which he failed to do)—and was aware of Albert Camus’ novel, *La Peste*, where one of the characters repeatedly seeks the perfect opening line for a novel. P felt that this could be drawn upon to justify his study of the importance of the paper title. After all, French existentialism was apparently quite reputable, and it would provide him with some credit with those soft interpretivists that had started to pollute the field. Now, he could move back to the comfortable zone of hypotheses and their corollaries.

- Hypothesis 1: Paper titles which contain a colon are more likely to be accepted by reviewers.
- Hypothesis 2: Paper titles high on polysyllabicity are more likely to be accepted. The construction of a polysyllabicity index (p-ind) was required to operationalise this. This was achieved simply by calculating the total number of syllables in the title and dividing by the total number of words.

- As a corollary of this, P felt that the construction of new terms through hyphenated concatenation was worthy of investigation.
- Hypothesis 3: Paper titles high on esotericity are more likely to be accepted. This was operationalised by creating an esotericity index (e-ind). This involved calculating the number of words in the title that do not appear in the concise Oxford dictionary as a proportion of the total number of words in the title.
- As a corollary of this, an exclamation mark connotes journalism, and thus titles with these are less likely to be accepted.

P was now ready to consider data analysis. The colonicity hypothesis lent itself readily to a Chi-square analysis of independence, and the results are contained in Table 1. Given that the samples were quite small, P considered using the *t*-test to compare for significant differences on the other hypotheses. Strictly speaking, this would have still required that those pesky restrictions to do with normality of distribution and homogeneity of variance requisite for parametric tests be satisfied. P was a little ashamed that he had ignored these restrictions in the past, but his former computerised statistical package didn't provide non-parametric tests. Anyway, they made it more difficult to find significance. However, now that he had installed SPSS which included non-parametric tests, he felt he could really make progress as an academic. A sneak preview in SPSS showed that even when using the non-parametric Mann-Whitney test, the values still fell within the required significance level. Therefore it was chosen.

P happily found that all his hypotheses but one were strongly supported at the .05 level. The esotericity hypothesis was not as malleable. He toyed with the idea of dropping it, but he really liked it. Anyway, a significance level of .19 wasn't all that bad. He decided that he would render this obscure with a double asterisk footnote, explaining that this was merely significant at the .2 level (see Table 2).

Table 1 Colonicity Analysis

	Journal/ Conference Published Papers (n=61)	P's Rejected Papers (n=24)	TOTAL
Colon in Title	54	5	59
No Colon in Title	7	19	26
TOTAL	61	24	85

Chi-square = 37.77; $p < .00001$

Table 2 Analysis of Polysyllabicity and Esotericity

Dimension	Journal/ Conference Published Papers (n=61)	P's Rejected Papers (n=24)	Significance
Polysyllabicity (p- ind) mean value	3.7	2.1	<u>Mann-WhitneyU</u> *
Esotericity (e-ind) mean value	0.27	0.22	**

* p less than 0.1

** p less than 0.2

P was now ready for conclusions. His research showed that colonicity is certainly important. While he hadn't come across any titles with two colons in them, an interesting alternative seemed to be to supplement it with the semantically-equivalent *em dash*. However, it would involve capitalising on chance to consider this as proven, and P didn't want to make a travesty of statistical probability. Also, one could consider bolding or underlining the colons in the title so as to emphasise them. This could be suggested in the section of the paper which would call confidently for further research in the area. Polysyllabicity and esotericity were also definitely significant. Unfortunately, this would be hard to achieve without much investment in reading peripheral literature. A pragmatic alternative in P's view would be to concatenate words through hyphenation, thus achieving the desired effect. For example, *Romeo and Juliet* would clearly not be an adequate title in today's academic publishing rat-race. However, *A Tragi-Comic Account of Inter- and Intra-Familial Strife in a Southern-European Context: The Pre-Modernist Perspective* would be a reasonable substitute.

Further examination of the data had revealed that high scores on polysyllabicity and esotericity were positively correlated with paper title length. This was where he felt another flash of insight. Given that many journals and conferences impose restrictions on paper length but not title length, it might be advisable for authors to create longer titles, maybe even up to 6000 words. This would allow one to achieve high polysyllabicity and esotericity index scores, and from P's study would have to be successful. Yes, he would indeed make a significant contribution to the field with this paper.

Finally, P gave thought to possible outlets for publishing his work. He was still wary from his previous experiences of rejection. However, he had noticed a *Call for Quantitative Research* papers from one of the major journals in the field—a lamentable state of affairs for P, who could remember the good old days when this only occurred in the case of qualitative, interpretivist research. Yes, he thought triumphantly, this paper could be submitted with impunity to the top organ in the field.

The Tale of Ethna O'Grady

Ethna O'Grady was a researcher with a problem. As a trained anthropologist, she desperately wanted to work on serious and meaningful research projects which contributed to the betterment of the human condition. Unfortunately, there were limited opportunities for anthropologists who weren't prepared to travel, and Ethna wasn't prepared to travel. However, she was aware that some of her anthropological colleagues had been able to find employment in the IS field, which apparently had no barriers to entry. Indeed, these colleagues seemed to be extremely well-respected in the field, as their findings were well-received and unchallenged even though they quite often represented fairly mundane and almost 'old hat' aspects of the field of anthropology. Thus, Ethna had found it quite easy to obtain a position as an IS researcher in the university where she had qualified.

After a number of months in the position, however, she was becoming extremely frustrated with what she perceived as the excessively shallow positivistic research traditions in the IS field. Ethna thought it imperative to always look beyond superficial cause-effect relationships to consider the deeper meaning underpinning all human activity. She subscribed completely to Oscar Wilde's philosophy that "anyone who calls a spade a spade should be forced to use one", and considered Freud's concession that "in dreams, sometimes a cigar is just a cigar" to be a shameful betrayal of all that was rich and useful in psycho-analysis. Fortified by these beliefs, she was looking forward with enthusiasm to a research project which her department had undertaken—that of designing a computer-based information system for a video rental store. Ethna's specific responsibility on the project was to determine the information requirements.

Dimly aware that requirements determination was identified in the IS literature as a problematic issue, Ethna felt this must be due to narrow ontological and epistemological assumptions about the nature of requirements which inevitably resulted in failure to cater for the needs of all relevant stake-holders to an adequate extent. However, the rather primitive terms of reference, viz., that *'the information requirements for the video store be captured with a view to designing a computer-based information system'* was a source of dismay for Ethna. Fully aware of the dehumanising potential of technology, Ethna resolved that the self-actualisation needs of all stakeholders, both staff and customers, would be adequately represented in this project. She would be especially vigilant for any emerging technological determinism. She would keep extensive case notes on the process and was jubilant about the research monograph she would write after the successful completion of what she was sure would be the perfect requirements determination exercise.

Ethna decided to adopt a grounded theory (GT) approach which would allow the requirements to *'crawl in by themselves'* into the specification document. Ethna desperately wanted to infuse her work with metaphors, considering the absence of metaphorical anchors to be the principal weakness of most IS research. She quite liked the naturalistic insect metaphor implied by requirements crawling in by themselves. Another couple of metaphors like that and her monograph would be 'sorted' she concluded, allowing herself a brief relapse into the vernacular.

Ethna had never actually rented a video and was completely unaware of what the process entailed. She was aware that some researchers might view her

ignorance of the application domain as a disadvantage, but she took heart from the counsel of the great pioneer of grounded theory, Glaser (1992):

There is a need *not* to review any of the literature in the substantive area under study. This dictum is brought about by the desire not to contaminate...It is vital to be reading and studying from the outset of the research, *but in unrelated fields*. (emphasis in the original)

Thus, her state of ignorance was an advantage in that she was not bringing the legacy of preconceived biases to the situation. Since she was currently reading Margaret Mead's (1928) classic, *Coming of Age in Samoa*, she adjudged herself to have adequately satisfied the dictum of reading in unrelated fields. Nevertheless, she decided to spend some time in deep immersion in the video store to assess the vital cultural nuances. Browsing as inconspicuously as possible with her video camcorder, Ethna began to build up a profile of the intervention situation. She noticed that many customers were female. Clearly, any films which contributed to the exploitation of women should not be stocked. A quick perusal of the shelves showed that films like *Barb Wire*, *Indecent Proposal* and even, albeit in more subtle form, *Thelma & Louise* should not be carried. Ethna deliberated over the case of *Lassie*, but in the end concluded that its stereotypical sexism should not be tolerated, so it too would have to be removed from stock. Ethna also noticed that many of the customers were children, often unaccompanied by an adult. Thus, any films with a 12s or older certificate should not be stocked as parents could not guarantee that children would not see them.

Looking outside to the broader environment, Ethna noticed the spire of a church. Realising that the moral position of customers must be respected, Ethna decided that films which portray adultery, theft or violent behaviour should not be available for rent. Scanning the catalogue, she considered the four films that remained eligible. One of these, a nature film by David Attenborough, while clearly supporting a Darwinistic paradigm, could be rented provided customers received adequate counselling before and afterwards. Ethna began to glow happily with the realisation that a computer system was not needed to keep track of four video titles. However, a counselling service was vital. Also, a screening service to ensure that potential customers would not be adversely affected by viewing any film seemed eminently desirable.

Armed with well over a thousand pages of field notes, two hundred hours of video-taped interviews with customers, including their responses to Rorschach ink-blot tests, and also some interesting eye-blinking behaviour which she was keen to analyse as it could lead to a useful conceptual lever, Ethna felt suitably armed to accomplish a successful intervention. Six months later, she delivered the preliminary specification document, entitled '*Preliminary Requirements Denouement*'. This, she felt was justified in that she had peeled away the superficial veneer (again, a nice metaphor was slotting into place), and uncovered the source of what the desirable requirements would be. But, the work was preliminary and many, many more years would be necessary to arrive at anything like a definitive position. However, she was shocked at the reaction of the owner of the video store who, after no more than two minutes of superficial perusal of her *Denouement* document, threw it forcefully on the table and stormed out muttering something about 'bloody academics'.

Ethna was dismayed at first. Disconsolately retreating to her office, she pondered her next step. Her monograph seemed to be a distant dream now. Preoccupied in thought, she failed to notice her colleague, P O'Sitivist, who was also returning to his office. Normally, they avoided each other as previous conversations had not been judged fruitful by either party. However, P was obviously in jubilant mood, as if he had solved some major dilemma. He politely enquired as to Ethna's progress with her research. She quickly closed the conversation with a remark that her research endeavours had been confronted with paradigm incommensurability which she hadn't quite resolved yet. P wasn't concerned with paradigms—he knew how to do proper research. However, he did remember seeing the term when he was trying to get to grips with philosophy, so he mentioned as authoritatively as possible the author of the only book on the subject that he had ever read. Feigning nonchalance, Ethna made a careful mental note of the author's name, and resolved to check it out—after all, she was desperate.

Later that day, she located the book in the library, and found a quiet desk at which to read. Browsing through the book quickly, she noticed with interest an alternative paradigm, Critical Social Theory, which was neatly but comprehensively described. She was aware that this had recently been applied in the IS field, and noted that it was characterised by a realist ontology allied to a subjectivist epistemology. This looked promising. She would probably have to abandon Grounded Theory though, but perhaps that wasn't so bad perhaps anyway, as Grounded Theory had become decidedly populist and even somewhat *passé*. In fact, the shortcoming of the GT approach was probably responsible for her original problem, she concluded. Closing the book, content that her research monograph was back on track, she leaned back and stretched contentedly, looking fondly at the slim tome. But her satisfaction was short-lived—her hopes were brutally dashed again for the book on which her hopes rested was entitled *Teach Yourself Philosophy*, and there was no way she could possibly use that in her bibliography. She would be ridiculed.

More dejected than ever, she made her way back to her office, determined to occasion grievous bodily harm to P O'Sitivist if their paths should cross. Once at her desk, she opened her diary to check for any appointments that might distract her. *And there it was!* The quotation for the day read: '*A failure is an opportunity, the full benefit of which has not been turned to your advantage*'. The quote was from Ed Land, founder of Polaroid—Ethna would have preferred an obscure Eastern mystic, but one couldn't have everything. Nevertheless, it illuminated the path she would take. She would write up the project as a tale of failure. Obviously, she would need to embrace another new paradigm to explain this failure. That was acceptable, as she had never been convinced by Critical Social Theory anyway—a positivist wolf in interpretivist sheep's clothing, in fact. However, in truth, Ethna had been so desperate that she would have even embraced positivism, and all the statistical analysis it seemed to imply, if the sight of those Greek statistical symbols didn't elicit panic attacks. Encouraged anew, she quickly perused a set of recent Conference proceedings. She noticed that actor-network theory (ANT) appeared to be becoming quite popular. Briefly reading a couple of papers she abstracted a couple of likely looking constructs. ANT certainly acknowledged the complex alignments and inseparable nature of the social and technical factors that influence the introduction of technology. Also, she was particularly taken with the concept of inscription—the notion that inanimate objects can be used to inscribe the interests of humans. Certainly, the manner in which the owner of the video store had dashed her *Preliminary Requirements Denouement* to the ground had all the

hallmarks of inscription. Beaming triumphantly, the outline of what would once again be a hallmark research monograph began to take shape.

These caricatures have a moral in that they are intended to underscore the fact that neither the 'hard' nor the 'soft' approach have exclusive monopoly on poor research. In the first tale, it is important to bear in mind that a chain is only as strong as its weakest link. Thus, while P. O'Sitivist's research exhibited great rigour, it is of a spurious nature, since the hypotheses are clearly not worthy of rigorous testing. Similarly, the relevance of Ethna O'Graphy's research objective, that of representing all stakeholder interests adequately, is beyond question. However, the manner in which metaphors are forced into the research at all costs, the luxury of spending an excessive time on the preliminary document, the dilettantesque flitting from one paradigm to another, and the use of esoteric data collection mechanisms, these all contribute to a kind of means-ends inversion as she loses sight of the practical realities of the research situation.

The tales (quite clearly fictional!) have arisen from the authors' own experience of the conduct of research. However, they do appear to have resonances for other researchers also, who, depending on their particular research orientation, tend to agree with one tale and dislike the other. Nevertheless, there is usually a grudging acknowledgement of some home-truths in the depiction of their preferred paradigm. Thus, dislike of a particular tale may primarily be the rage of Caliban seeing his own face in the mirror!

2. Competing Dichotomies in the IS Research Debate

The literature on research approaches is a broad and contentious one which is concerned with fundamental research philosophies that are often seen as dichotomous to each other (e.g., Guba & Lincoln, 1994; Lee, 1989; Morey & Luthans, 1984). A number of dichotomies have been proposed in the literature, including the following:

- positivist v. interpretivist
- realist v. relativist
- objectivist v. subjectivist
- emic/insider/subjective v. etic/outsider/objective
- quantitative v. qualitative
- exploratory v. confirmatory
- induction v. deduction
- field v. laboratory
- idiographic v. nomothetic
- relevance v. rigour

This list, while identifying a large number of dichotomies, is by no means exhaustive. Several additional dichotomous terms are discussed in the literature (e.g., Gable, 1994; Guba & Lincoln, 1994). However, it should be noted that these dichotomies are not all at the same level of abstraction, as some are more overarching than others, and some are almost synonymous. For example, realism and relativism are ontological

positions; interpretivism, positivism, subjectivism and objectivism are concerned with epistemology; the quantitative v. qualitative and idiographic v. nomothetic issues are methodological ones; while relevance v. rigour is perhaps best characterised as an axiological issue. Also, it must be acknowledged that a simple dichotomous categorisation does not adequately reflect the further nuances on each side. For example, realism can be contrasted with both anti-realism and relativism, yet relativism and anti-realism are in no way synonymous. Further, phenomenology and constructivism can be differentiated, but both would be classified under the 'soft' approach. However, these have been collapsed dichotomously in previous research (Burrell & Morgan, 1979; Hirschheim & Klein, 1989). Justification for this may be drawn from Morey and Luthans (1984, p.28) who point out that the terms on each side of these dichotomies are often characterised by subtle shifts in terminology, and thus choosing “any term in the set often conjures up all the implications the others have”. These dichotomies are briefly summarised in Table 3.

The fracturing of these dichotomies into the different levels of ontology, epistemology, methodology and axiology allows for a fuller discussion later of the strategies that have been proposed to resolve the debate. Thus, rather than discussing the issues at an overarching ‘hard’ versus ‘soft’ level, we will assess the extent of incommensurability at each individual level.

SOFT	HARD
ONTOLOGICAL LEVEL	
<p>Relativist Belief that multiple realities exist as subjective constructions of the mind. Socially-transmitted terms direct how reality is perceived and this will vary across different languages and cultures.</p>	<p>Realist Belief that external world consists of pre-existing hard, tangible structures which exist independently of an individual's cognition.</p>
EPISTEMOLOGICAL LEVEL	
<p>Interpretivist No universal truth. Understand & interpret from researcher's own frame of reference. Uncommitted neutrality impossible. Realism of context important.</p>	<p>Positivist Belief that world conforms to fixed laws of causation. Complexity can be tackled by reductionism. Emphasis on objectivity, measurement and repeatability.</p>
<p>Subjectivist Distinction between the researcher and research situation is collapsed. Research findings emerge from the interaction between researcher and research situation, and the values and beliefs of the researcher are central mediators.</p>	<p>Objectivist Both possible and essential that the researcher remain detached from the research situation. Neutral observation of reality must take place in the absence of any contaminating values or biases on the part of the researcher.</p>
<p>Emic/Insider/Subjective Origins in anthropology. Research orientation centred on native/insider's view, with the latter viewed as an appropriate judge of adequacy of research.</p>	<p>Etic/Outsider/Objective Origins in anthropology. Research orientation of outside researcher who is seen as objective and the appropriate analyst of research.</p>
METHODOLOGICAL LEVEL	
<p>Qualitative Determining what things exist rather than how many there are. Thick description. Less structured & more responsive to needs & nature of research situation</p>	<p>Quantitative Use of mathematical & statistical techniques to identify facts and causal relationships. Samples can be larger & more representative. Results can be generalised to larger populations within known limits of error</p>
<p>Exploratory Concerned with discovering patterns in research data, & to explain/understand them. Lays basic descriptive foundation. May lead to <i>generation</i> of hypotheses</p>	<p>Confirmatory Concerned with hypothesis testing & theory verification. Tends to follow positivist, quantitative modes of research</p>
<p>Induction Begins with specific instances which are used to arrive at overall generalisations which can be expected on the balance of probability. New evidence may cause conclusions to be revised. Criticised by many philosophers of science, but plays an important role in theory/hypothesis conception.</p>	<p>Deduction Uses general results to ascribe properties to specific instances. An argument is valid if it is impossible for the conclusions to be false if the premises are true. Associated with theory verification/falsification & hypothesis testing</p>
<p>Field Emphasis on realism of context in natural situation, but precision in control of variables & behaviour measurement cannot be achieved</p>	<p>Laboratory Precise measurement & control of variables, but at expense of naturalness of situation, since real-world intensity & variation may not be achievable</p>
<p>Idiographic Individual-centred perspective which uses naturalistic contexts & qualitative methods to recognise unique experience of the subject</p>	<p>Nomothetic Group-centred perspective using controlled environments & quantitative methods to establish general laws</p>
AXIOLOGICAL LEVEL	
<p>Relevance External validity of actual research question & its relevance to practice is emphasised, rather than constraining the focus to that researchable by 'rigorous' methods</p>	<p>Rigour Research characterised by hypothetico-deductive testing according to the positivist paradigm, with emphasis on internal validity through tight experimental control and quantitative techniques</p>

Table 3 Summary of 'Soft' v. 'Hard' Research Dichotomies

3. Framing the IS Research Debate

3.1 The Polarisation Phenomenon

The history of IS research has been characterised by the hegemony of the positivistic research tradition (Orlikowski & Baroudi, 1991; Walsham, 1995). There has been a widespread tendency in the IS field to relegate 'soft' research approaches to a secondary position—acceptable if they are conducted as 'scientifically' as possible (e.g. Benbasat *et al.*, 1987). However, Dutton (1988) has criticised the Benbasat *et al.* interpretation of how qualitative case studies should be conducted because of the explicit bias which accords qualitative methods an inferior role. Indeed, they have even been classified as “heretical” (Daft & Lewin, 1990). Several researchers have made reference to the phenomenon whereby 'soft' research is viewed as the preliminary or heuristic stage which takes place before the 'real' research of statistical hypothesis testing takes place (Kaplan & Duchon, 1988; Nissen, 1985; Trauth & O'Connor, 1991).

The preoccupation in the IS field with 'hard' research approaches is manifest in the excessive reliance on positivist and quantitative, often laboratory-based, strategies for IS research. This may be understandable if one considers the immaturity of a discipline trying to achieve respectability. Schoderbek *et al.* (1975) capture the essence of the phenomenon quite well:

...enamoured of the success and prestige of the exact sciences, enthusiasts were quick in casting off their own terminology for that of the physical scientist. The precision and clarity of the physicist's terms made the price seem just right. Early opponents of this casting-off process were subdued to silence for fear their own ignorance would be exposed.

Researchers have been concerned with establishing credibility by ensuring that research is carried out in a rigorous fashion. However, rigour has been mistakenly confused with positivist, quantitative research. Accordingly, much attention has been devoted to rigorous hypothetico-deductive testing according to the positivist paradigm, and this has been at the expense of relevance. The price that has been paid is that the hypotheses being tested have often been trivial, resulting in sterile research. Morgan (1983) adapts the old adage to cite a fundamental principle that a system in serial arrangement cannot be better than its weakest part. Thus, it is futile to amass a great methodological arsenal to test what are often trivial hypotheses. As Deutscher (1966) so aptly put it:

we have been learning to pursue an incorrect cause with a maximum of precision

The IS research community appears to be polarised geographically on an East-West basis in so far as 'soft' approaches are more often adopted by researchers from mainland Europe and Scandinavia, whereas 'hard' approaches are perhaps more popular with North American researchers. Polarisation into entrenched camps, both of whom rather arrogantly see their research approach as the true one is a fundamental problem in the IS field. Paradigms should serve as a lens to illuminate research issues, not as blinkers to help achieve closure. Yet, researchers continue to operate in blind and slavish adherence to the extreme poles of their particular research approach, all too similar to the caricatures depicted in the opening tales of this paper.

The debate is often framed as a rigour v. relevance one (Galliers, 1995; Keen, 1991). While the perils of such a value-laden dichotomy are obvious, it does serve some purpose in illuminating the debate. For example, it is obvious that researchers need to establish relevance as emphasising great rigour in research may constrain the research focus to only consider what is researchable by 'rigorous' methods, thus failing to ensure the validity of the actual question being researched. Consequently, there is a need to lay down a critical foundation of meaningful and relevant constructs. As Keen contends, relevance should come first and drive rigour. Nevertheless, he (1991, p.29) makes the point that "relevance does not excuse inattention to rigour". This is an important point, and its essence has been captured by McGuire (1973, p.449):

(In laboratory research) we try to train people who are good enough "stage managers" so that they can create in the laboratory simulations of realities in which the obvious correctness of our hypothesis can be demonstrated...(However, in natural research contexts)...we are testing our ability as 'finders'...of situations in which our hypotheses can be demonstrated as tautologically true.

3.2 Proposed Strategies for Resolution of the Debate

A number of strategies have been proposed in the literature for resolving the debate (e.g., Klein *et al.*, 1991; Landry & Banville, 1992; Lee, 1991; Mumford *et al.*, 1985; Reed, 1985). While different labels have been used by different authors, the strategies may be grouped into four overall categories, namely, supremacism, isolationism, integrationism, and pluralism. While each of these strategies has potential strengths, there are also weaknesses associated with each. As Frank Bruno, the boxer,² once so insightfully pointed out, "*there are pros and cons for, and there are pros and cons against*". These strategies are discussed in turn next.

3.2.1 Supremacism

The supremacist strategy would seek to establish one research paradigm as universally applicable and 'best' in all situations, very much in line with the tenets of the positivist tradition. If such a paradigm existed, researchers could strive to develop theory according to the 'best' method, thus advancing the field significantly. It would also be useful in ensuring the long-term viability of the field (Pfeffer, 1993). However, if it was possible to establish any research approach to a position of supremacy, it would have been done so long ago, and the paradigm debate would have been resolved well before now. Similar debates on the merits of 'hard' and 'soft' approaches have been conducted, *without* resolution, in other social science fields—marketing (Kavanagh, 1994), and educational inquiry (Smith & Heshusius, 1986), for example.

² This qualification might seem to imply that we know several people called Frank Bruno, one of whom is a boxer. This is not the case—the qualification is merely to ensure that naïve academic researchers (such as P. O'Sitivist or Ethna O'Graphy) do not perform a library search for further work by Bruno. The quote in question was memorably supplied in an interview with someone called Harry in the early 1990s.

Interestingly, one could argue that a supremacist strategy has been a characteristic of the IS research arena in its short history, in that the positivist tradition has been dominant for much of that history (Walsham, 1995). Given this supremacist hegemony, the question arises as to the extent to which research has advanced, questions have been answered, and theoretical constructs established in the IS field. The authors would suggest, somewhat provocatively, that there is no single research question that has been answered unequivocally to date in the field. A complete discussion of this issue is beyond the scope of this paper. However, many of the accepted ‘axioms’ of IS research—for example, that user participation in systems development is beneficial—have been shown to be less clear-cut than originally conceived (Butler & Fitzgerald, 1997; Newman, 1989). Also, there are many examples of studies which have investigated the same research topic, but whose findings are completely at variance with each other, even on very simple well-defined constructs (cf. Hiltz and Johnson, 1990). Thus, the supremacy of the positivist approach has not yielded results that would satisfy its own standards for success. Nor is there any reason to be optimistic that an era of interpretivist supremacy would represent an advance, especially given the applied nature of the IS field, and continued practitioner readiness to embrace simple carry-home messages and quick-fix fads. Thus, given that all research approaches have strengths and weaknesses, there is little point in an imperialist strategy which would strive to replace one limited approach with another. Also, the history of advances in knowledge has generally been one in which significant insights emerge when topics are subjected to study in novel ways. Any strategy which constrained variety could therefore be potentially harmful.

3.2.2 Isolationism

The isolationist argument has perhaps been advanced most notably by Burrell & Morgan (1979) who portray a number of research approaches as mutually-exclusive opposites, characterised by “disinterested hostility” between the camps (Burrell & Morgan, 1979, p.36). The essence of this is captured by Guba and Lincoln (1994) who state that interpretivism and positivism:

cannot be logically accommodated anymore than, say, the ideas of a flat versus round earth can be logically accommodated.

Researchers following an isolationist strategy would treat each paradigm as incommensurable and operate strictly according to a particular paradigm, ignoring other alternatives, thus opting for paradigm closure. While this might satisfy a purist criterion, there appears to be considerable evidence to suggest that complementary insights are provided by the application of different research paradigms (Hassard, 1991; Kaplan & Duchon, 1988). Also, significant arguments against the Burrell and Morgan isolationist perspective have been advanced in the interim (e.g. Wilmott, 1993). The benefits of a pluralist strategy, discussed below, would also serve to undermine the case for isolationism.

3.2.3 Integrationism

An integrationist strategy would seek to integrate alternative approaches into a single coherent mode of analysis. Such a strategy has been identified by several researchers (Landry and Banville, 1992; Lee, 1991; Pfeffer, 1982; Reed, 1985). Again, if this strategy could be realised in practice, considerable benefits could be expected to

follow, similar to those identified in the discussion on the supremacist strategy earlier. Lee (1991) provides a detailed account of a possible integrationist approach. He proposes integrating positivism and interpretivism into a single framework consisting of three levels of understanding: subjective, interpretive and positivist. These are seen as inter-related and arranged in a cyclical progression, and Lee describes how each of these levels of understanding are achieved and influence each other. He also provides a number of examples of research which would satisfy the conditions of the framework.

However, integrationism in general, and Lee's conception in particular, are not entirely unproblematic. At the general level, integrationism requires a fair degree of tolerance of the extent of incommensurability between paradigms (Jackson & Carter, 1991). Also, it presumes the existence of some Archimedean point of vantage from which the coherence and suitability of any proposed integrated approach may be judged. Thus, an integrationist strategy might be difficult, if not impossible, to achieve, and could indeed lead to each approach sacrificing its particular strengths. The specific integrationist strategy proposed by Lee has also been questioned (Walsham, 1995). It could be argued that his framework is inherently positivist, albeit indirectly. In the three levels of understanding proposed, the intermediate level of interpretation cannot be bypassed, even by positivist researchers who may view interpretation as a contaminant. Thus, the model may in fact be merely a more accurate reflection of the positivist model. However, interpretivist researchers would not seek to go beyond the interpretivist level of understanding to achieve a positivist understanding anyway.

3.2.4 Pluralism

The remaining alternative is a pluralist strategy. This is the one proposed most often (Landry & Banville, 1992; Iivari, 1991; Mumford *et al.*, 1985; Klein *et al.*, 1991), although possibly by default as the strategy with fewest negative connotations. As a consequence, the pluralist strategy is the one to which most attention is devoted in this paper. A pluralist strategy would allow for different paradigms to be applied in a research situation. It would also allow for a contingent tool-box approach where different methods with complementary strengths could be used as appropriate (Landry and Banville, 1992; McGrath, 1984, pp. 31ff). Many researchers have adopted such an ecumenical stance, arguing that research approaches should not be viewed as mutually exclusive (e.g. Firestone, 1990; Gable, 1994; Hassard, 1991; Iivari, 1991; Jick, 1983; Kaplan & Duchon, 1988; Morey & Luthans, 1984; Patton, 1990). However, not all researchers appear to have converged on a similar definition of pluralism (in fact, somewhat ironically, pluralist definitions of pluralism exist). Landry and Banville (1992, p. 78) define it as follows:

“...a position that favors a diversity of methods, theories, even philosophies, in scientific enquiry. It rejects methodological monism both as a prescribed (the mainstream navigators' view) or as a privileged (the unity advocates' view) position as well as the anarchy of an 'anything goes' attitude”.

This definition is clear but it provides little in the way of practical advice to help shape a pluralist research strategy. Gallivan (1997, pp. 419-420) has considered the issue in some detail and proposes a “mixed method” pluralist strategy which requires a number of precisely-stated criteria be met. Although, as already mentioned, a

number of researchers have argued for a pluralist strategy, in practice, little methodologically pluralist research has been published (Gallivan, 1997). An example of a pluralist approach to organizational research is provided in Hassard (1991), who combined the various approaches suggested by Burrell and Morgan (1979). In the IS area, a number of studies have adopted a pluralist approach to apparent good effect. For example, Wynnekoop (1992) studied the implementation of CASE tools using quantitative surveys followed by qualitative interviews. Contradictions emerged from the survey analysis, but these were resolved in the qualitative phase, leading to a more comprehensive understanding of the phenomenon. Another noteworthy example is Kaplan and Duchon's (1988) widely-cited study which combined qualitative and quantitative research methods. This latter study was interesting as the qualitative research revealed what appeared to be interesting and significant findings, but the quantitative researchers were not initially able to uncover any significant findings. Following detailed qualitative consideration of the research data, a new way of categorising research subjects was proposed. When this category was then factored into the quantitative research, statistically significant correlations emerged. Kaplan and Duchon conclude that quantitative and qualitative methods should not be viewed as opposites, but should be integrated, thus providing a richer picture and possibly strengthening findings through triangulation. Thus, the limitations of each method may be countered by incorporating the strengths of the other. Mumford (1991) also makes the important point that researchers must avoid quantification merely for the sake of it, and alternatively, researchers should not undertake qualitative research merely to avoid handling numeric data. White (1985, p.237) gets to the root of the quantitative v. qualitative issue, arguing that:

both quality and quantity are misconceived when they are taken to be antithetical or even alternative. Quantities are of qualities, and a measured quality has just the magnitude expressed in its measure.

Thus, while there may be paradigm incommensurability at the overall ontological and epistemological levels, some pluralist ecumenical accommodation is possible at the lower methodological level, and, indeed, even at the axiological level (Robey & Markus, 1998). As already mentioned above, several studies have done this to a greater or lesser degree (e.g. Firestone, 1990; Hassard, 1991; Kaplan & Duchon, 1988). As Firestone (1990, p. 123) points out, in the practice of research, "walls between paradigms break down", since it is not possible to remain in the philosophical heights avoiding methodological specifics. Clearly, combining diverse research methods with a view to maximising their complementary strengths is worthwhile. However, conceptually such a strategy can be supported also. For example, Iivari (1991) makes the point that epistemological monism can co-exist with methodological pluralism.

However, some obvious questions exist in relation to pluralism. Firstly, little practical guidance is given on how or when to combine methods, and little by way of useful advice on operationalising such a strategy is available. Thus, there is little to prevent a pluralist strategy from descending into anarchy. An uneasy compromise seems to be fairly widely accepted in so far as 'soft' research approaches have been posited as suited to preliminary or exploratory research, whereas 'hard' research approaches are considered suitable for subsequent confirmatory research. Thus, a 'horses for courses' argument is made. However, this accommodation is a bit simplistic as it precludes the possibility of research endeavours which are both 'hard' and exploratory or both 'soft' and confirmatory.

The extent to which pluralism has been proposed as a default option also merits consideration, for, if this were the case, there might be little impetus to ensure the strategy is actually viable. Certainly, some forms of pluralism bear a strong resemblance to triangulation (Gallivan, 1997) which has very definite positivist overtones. In this sense, pluralism does not really depart from the somewhat apologetic and defensive proposal of equivalents of positivist canons.

4. Towards Dissolution of the Debate

4.1 From Polarisation to Polarity: Going beyond Dichotomies

In his work on deconstruction, Derrida argued that many of the pairs of opposites which we tend to view as dichotomies are actually miniature hierarchies in so far as one end of the dichotomy is generally viewed as superior to the other (Murfin, 1996, pp. 186-187). This is certainly the case in the dichotomous debate discussed here, as the positivist approach has traditionally been viewed as superior. This suggests that we need to advance beyond the stage where the debate is cast in dichotomous terms.

Given the problems caused by the polarisation that exists in the IS field, as discussed earlier, it is somewhat ironic that a concept which could help advance the issue is that of *polarity*. Talbott (1995), drawing on the work of philologist, Owen Barfield, proposes the metaphor of polarity to analyse the notion of meaning, specifically in relation to the limits of computer technology. Summarising briefly, all magnets have both a north and south pole. Neither can exist without the other—if the north pole section of a magnet is removed, for example, a new magnet is created from this section with both north and south poles. These poles exist not in isolation of each other, but by virtue of each other.

This metaphor can be usefully applied to the schismatic debate of this paper also, in that rather than retreating to entrenched and isolated opposites, each vying for superiority, the mutual inter-penetration of polar contraries should be considered. Each of the dichotomies in Table 3 exists by virtue of its opposite, and the strength of the polarity metaphor is that neither pole is viewed in hierarchical terms as superior to the other. If, for example, we consider relevance to be the central strength of the 'soft' approach, and rigour to be the central strength of the 'hard' approach, we can see the importance of the polarity phenomenon in that the greatest polar tension is achieved by combining the deepest relevance and meaning with the clearest rigour and accuracy. Similarly, an awareness of the strengths and weaknesses of the dichotomous perspectives of Table 3, and accommodating them pluralistically in the overall research design leads to a more complete picture. Concentration on one side in isolation leads to a weakening of the polar tension, which in turn leads to a weakening of the dynamic of the overall research process.

The authors believe that the world is best characterised by an interpretivist view—thus, reality is socially constructed, multiple realities exist, and what constitutes 'scientific research' is both time and context dependent. However, research, when it comes to the communication stage where papers are written for publication, is inherently positivist: research papers are by necessity structured in a linear fashion; the research 'data' gathered is unitised and categorised to a greater or lesser extent; reductionism is present to the extent that choices have to be made as to what should be included or omitted; some explanation and interpretation of the findings will be

included, implying some degree of cause-effect; and some degree of 'objectivity' will be affected in so far as political and polemic tirades will generally be avoided. The interpretivist tragedy is to fail to recognise that research communication, in the traditional form, is inevitably positivist. On the other hand, the positivist tragedy is the endeavour to operate on the assumption that the world actually obeys the positivist view. Again, the polarity metaphor is relevant in that it serves to highlight the extent to which each pole co-determines the other, even at the most minute level. Thus, posing the debate in dualistic dichotomous terms serves no useful purpose; rather, a new level of discussion is necessary. This is the focus of the next section.

4.2 Recasting the Debate at a Different Level

Niels Bohr has pointed out that the opposite of a great truth is also true. Thus, a proverb like *'absence makes the heart grow fonder'* is clearly logically opposed to the proverb *'out of sight, out of mind'*. Yet, both are locally true. In IS terms, we can use an argument such as *'the proper place to study elephants is the jungle, not the zoo'* to argue for field-based research (Van Horn, 1973). However, an argument such as *'the proper place to study bacteria is the laboratory not the jungle'* is also clearly appropriate to justify a laboratory study. Similarly, both 'hard' and 'soft' research approaches are locally true and appropriate in different situations. However, like so many things in this world, it is not a black or white issue. Even if these dichotomous positions are as logically incompatible as a round earth v. flat earth, it must be acknowledged that for most daily purposes, life can proceed satisfactorily on the assumption that the earth is either flat or round. Interestingly, even in the realm of physics, it is the case that the theories of relativity and quantum mechanics are mutually incompatible—they cannot both be true. Yet, notwithstanding this incompatibility, the remarkable scientific advances in this century have been achieved through research informed by both these theories.

Morgan (1983, p.381) argues that it is wrong to condemn any research perspective. Clearly, the research perspectives on both sides of Table 3 have strengths and weaknesses. As already mentioned, if either of these research approaches could be proven to be universally applicable, the debate would have been resolved long ago. The essence of the problem is that researchers, rather than choosing a research approach appropriate to the research question being asked, actually tend to inherit unquestioningly their research methods from those dominant in the institution or region they happen to inhabit. This becomes dogmatic orthodoxy and there is a desire to denigrate the opposing perspective, with criticisms characterised by excessive one-sidedness. Given that both positions have limitations, there is no point in replacing one approach with the other. However, rather than rejecting the other side from a position of knowledge, researchers from each perspective are often relatively ignorant of the strengths of the other.

Furthermore, the debate between these dichotomous research approaches is conducted on philosophical turf where relatively few IS academics are competently knowledgeable. To echo Niels Bohr's comment about quantum mechanics—if it doesn't make you dizzy then you don't understand it. Researchers operate nimbly with much token sabre-rattling in a debate which cannot be resolved. Each side presents an image of the other with an emphasis on its obvious weaknesses. For example, positivism has been criticised for its emphasis on cause-effect relationships and its deterministic view. However, these criticisms have been argued to be unjustified in

that they are not part of the positivist position in practice (Hunt, 1991). Indeed, the less extreme post-positivist paradigm is the one generally espoused now (Guba, 1990). Similarly, interpretivist approaches have been unfairly criticised as not being sufficiently rigorous (Nissen *et al.*, 1991), and, indeed, of being ultimately self-refuting (Anderson, 1988). Certainly, the extreme view that all interpretations are equally valid is not tenable in practice. If they were, issues such as trustworthiness of the research would be largely immaterial. Moreover, it would not placate the egoism of those many researchers who surely believe their interpretation to be more useful than that of colleagues and novice researchers. Otherwise, as the lines from *Eva Luna* which open the paper illustrate, we would all be living in absolute isolation.

However, the debate has been significant for a number of reasons. Firstly, it is important that researchers be consciously aware of these issues. After all, everyone operates on the basis of some epistemological assumptions, whether they know it or not! The debate is therefore a good training ground for academic researchers, but they should realise the futility of trying to resolve it, and achieve a healthy respect for a variety of research paradigms, rather than arrogant hegemony and condemnation of all alternative approaches.

The question then arises as to the extent to which the debate continues to be important to the IS field. In an area littered with dichotomies, it is perhaps hardly surprising that there are two answers, in that it is both profoundly important and perhaps not important at all. Taking the latter first, one could argue that the debate cannot be resolved and hence should cease to attract the ink of researchers. In this context, the debate may be pronounced sterile and vacuous and no longer important. However, one could also argue that 'soft' approaches are always going to be accorded an inferior role in a research arena dominated by 'hard' standards. Issues which are fundamentally problematic for 'hard' research, such as intrusiveness on the research situation, are the basis of 'soft' research. By recasting the debate at the grand level, the whole IS research agenda could be modified, necessary if 'soft' approaches are to achieve equal status and the legitimacy which that would imply. Given the importance and strengths of the 'soft' approach as outlined above, any initiative which contributes to ending the automatically privileged, but ultimately *cul de sac*, hegemony of the 'hard' approach is worthwhile. Therefore, in this context, the debate is profoundly significant. However, given that the debate cannot be resolved, a strategy of dissolution may be more appropriate. Thus, the debate should be conducted at a different level—a macro one where, rather than advocates of interpretivism proffering a one-sided over-statement of the weaknesses of the positivist approach but still providing defensive apologist methodological equivalents of positivist canons to placate criticism, the whole research agenda should be fundamentally re-oriented to accommodate 'soft' research approaches. One possible measure of the achievement of such a balance would be when journal calls for quantitative research papers are as common as calls for qualitative ones—ideally, both at zero.

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