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Enabling a Kleinian integration of interpretivist and socio-critical IS research: The contribution of Dooyeweerd's philosophy

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ABSTRACT

This paper suggests how interpretivist, socio-critical and positivist approaches in information systems research might be integrated. Heinz Klein's approach to information systems was a significant advance on earlier ones, bringing together a number of issues discussed in interpretivist and socio-critical circles, with philosophical groundings. He believed IS research would benefit from integration of interpretivist and socio-critical approaches, but found no philosophical grounding for this. Interpretivism's reluctance to consider normativity might be a 'Trojan horse' that undermines integration. This paper employs Dooyeweerd's philosophy to expose and expel the Trojan horse and sketch how a philosophically-grounded integration of interpretivist, socio-critical and even positivist approaches might proceed.
Keywords: Heinz Klein, Information systems research paradigms, Paradigm integration, Dooyeweerd, Ground-ideas, Ground-motives, Aspects.

1. INTRODUCTION

During the 1980s and 1990s Heinz Klein was always at the centre of debates in the information systems (IS) discipline that explored, discussed, documented and encouraged new paradigms and approaches. His thought has influenced that of many others via joint authorship and engagement in dialogue, so what has emerged can rightly be called a *Kleinian Approach* to IS.

In his keynote address to a 1999 IFIP8.2 Working Group, Klein (1999) identified two main directions that have emerged in IS research: interpretivist and socio-critical. (As Klein (2009) points out, the word 'critical' has several meanings, so 'socio-critical' is used here to denote the post-interpretivist approach that is concerned with social structures of oppression, while 'critical' is used to denote a questioning attitude or the philosophical process of exposing assumptions.) Klein (1999) deserves to be treated as authoritative because it is one of the very few papers in which this 'father of the field' reflects strategically, on his own, on the future of IS research (ISR) and identifies challenges. Since "radical social transformations of organizations are taking place at such a speed that they are overwhelming for academic researchers" (p.14) Klein argues that "what is needed are general concepts to classify the mind-taxing variations of organizational transformations into a parsimonious typology." The typology he used for analysing the past four decades of IS research and practice had two dimensions, types of knowledge and methods of inquiry. Klein always tried to ground his thinking in philosophy; the types of knowledge (descriptive and normative) are from Kant and the inquiry methods are from Descartes, Locke, Leibniz, Kant and Hegel.

1.1 The Kleinian Project of Integration in IS Research

Klein (1999) comes to several conclusions about the way forward. The most important is that we should seek a union of interpretivist and socio-critical approaches (p.22), seeing them as

complementary. While the interpretivist approach is well-developed with good empirical foundations, socio-critical approaches have strong concern with normativity and strong philosophical foundations. Though Klein calls for union, he cautions against mere "liaisons of convenience"; instead the IS community must seek "proper philosophical foundations". Though Richardson & Robinson (2007) question the need for integration, this paper will follow Klein's aspiration for it.

Mutual understanding is vital for integration, so "communication deficits"' should be overcome (Hirschheim & Klein 2003). Klein (1999) looked towards the linguistic turn in philosophy to effect this. He spent the following years trying to bring streams together and, in his Leverhulme Lectures (Klein 2007), examined various turns in philosophy - phenomenological, hermeneutic, socio-critical and linguistic turns (but not critical realism (Klein, 2004)). Unfortunately, he was unable to deliver the final lecture and, in the absence of this, he had given little indication of any clear idea how to achieve integration.

Indeed, Klein (1999) expressed a fear that the integration might not, in the end, be possible. None of these philosophies:

> "addresses the shortcomings of interpretivism to contribute to the growth of normative knowledge [norms, rules and values]. Its reluctance to address norm and value issues appears to make interpretivism incompatible with [socio-]critical theory." (p.22).

"IS theory will remain chronically incomplete," Klein (1999, p.22) argues, "if we as researchers simply ignore the immense importance of normative knowledge for practice and the general betterment of the conditions of human existence."

In their now-classic paper Klein & Myers (1999) proposed principles for interpretivist IS research. A decade later, Myers & Klein (2011) propose principles for socio-critical field studies in IS. Accepting Alvesson & Deetz' (2000) belief that insight, critique and transformation are three necessary elements of a socio-critical research process, they suggest that interpretivist principles can contribute to insight, while normative principles can contribute to critique and transformation. As in Doolin & McLeod's (2005) 'critical interpretivism', insight-generation should focus on issues of interest to socio-critical approaches. Though this suggests integration, there are at least two problems. Might issues uninteresting to the socio-critical mindset be overlooked, such as fun in computer gaming (Basden 2010)? If insight uncovers a wide range of issues, what guarantee is there that they will all be given their due during critique and transformation? Though these authors discuss the philosophical roots of socio-critical research in Habermas, Foucault and Bourdieu, they do not discuss any philosophical basis for the actual integration with interpretivist principles, rooted in phenomenology and hermeneutics. Klein warns (1999, p.22) that "unless the union can be based on a reasoned understanding that interpretivist and socio-critical assumptions are at least partially compatible, the potential intellectual incongruences ... could become the Trojan horse, which brings down the whole integration project."

The challenge remains: on what "proper philosophical foundation" and "reasoned understanding" can we integrate the interpretivist and socio-critical approaches?

1.2 Purpose, Approach, Scope and Audience

This paper discusses the possibility that a "proper philosophical foundation" for a Kleinian union might be found in Dooyeweerd's philosophy. Applications of Dooyeweerd in IS are growing (for example, de Raadt 1989; Bergvall-Kåreborn & Grahn 1996; Winfield, Basden & Cresswell 1996; Eriksson 2001; Bergvall-Kåreborn 2001; Basden 2002a; Eriksson 2003; Mirijamdotter &

Bergvall-Kåreborn 2006; Basden & Wood-Harper 2006; Basden 2008a, Basden & Klein 2008). Most of these address specific IS issues or apply only one part of Dooyeweerd's thought, whereas this paper applies three major parts of Dooyeweerd's thought to a strategic issue, namely the Kleinian project of integration of ISR approaches.

Dooyeweerd comes from a very different, but little-known, philosophical stream, which allows the issue of integration to be approached in a different way, questioning some presuppositions of conventional approaches. The first service that Dooyeweerd renders us, outlined in section 2, is to reveal why approaches in IS seem incommensurable, and thus the reason for the Kleinian Trojan horse. The second service, in section 3, is to offer a basis for dialogue between the approaches in what Dooyeweerd called 'ground-ideas' of philosophy. The third service he renders is to provide a 'Cosmonomic Philosophy', explained in section 4, which enables us, in section 5, to reinterpret the ground-ideas of positivism, interpretivism and socio-critical theory and discuss integration.

This paper does not discuss the characteristics of the Kleinian approach itself, nor does it address all the conclusions of Klein (1999). Instead, this paper restricts itself to providing a philosophical account of the interrelationship between interpretivist and socio-critical (and positivist) approaches in the hope of a fruitful union between them. It might be of interest to those interested in: Heinz Klein's work as such, the future of IS research, and how Dooyeweerd's philosophy can be applied.

2. ROOT OF DIFFICULTY OF INTEGRATION: GROUND-MOTIVES

What concerned Dooyeweerd, working around the middle of the twentieth century until his death in 1977, was the almost universal presumption, for millennia, that theoretical thought is neutral and authoritative, superior to pre-theoretical ('naïve', everyday) thinking, presumed to be biased and partial. By immanent critique of thinkers over the past 3,000 years, covering the same period as Klein (1999) does, but including the Scholastic period which Klein omits, Dooyeweerd extensively demonstrated that Western theoretical thinking has never been neutral, but always influenced by four 'ground-motives' that make it non-neutral.

2.1 Ground-motives

A ground-motive is a deep presupposition that a thinking society holds about the nature of reality, including rationality, meaning and normativity (good and evil), and about how to think and form ideas and theories of reality. A ground-motive is not a theory about these things (even when expressed in theoretical terms) but a deep, widely-shared, unquestioned belief and commitment about them, which drives society to develop its thought and philosophies in particular directions.

According to Dooyeweerd (1979), Greek thought (500 BCE-500 CE) was dominated by the opposition of two principles, the Form-versus-Matter ground-motive. Around the same period, Hebrew and early Christian thought was governed by the Biblical ground-motive of Creation, Fall and Redemption. Synthesising these two, mediaeval Scholastic thought became dominated by the ground-motive that opposes Nature to Grace (or Super-nature) (500-1500 CE). Around the Renaissance this evolved into the Humanistic ground-motive that opposes Nature (controlled by external laws) to Freedom (as experienced in the human personality). These four ground-motives are not unique to Dooyeweerd, but he explored their interrelationships more extensively, showing how each was worked out by humanity in a myriad of ways while it held sway.

The Form-Matter, Nature-Grace and Nature-Freedom ground-motives are dualistic. Each began as a duality of two aspects used to explain diversity, including diverse human lifestyles (e.g. Greek philosophers work with form; peasants, with matter). But soon the aspects were treated as opposing poles, one pole becoming 'higher' and 'good', the 'lower' pole becoming associated with evil. Thus, under dualistic ground-motives, theoretical discourse about normativity arises from polar opposition. In their era, a majority deemed Form 'higher' than Matter, Super-nature 'higher' than Nature, and Freedom 'higher' than Control.

The Creation-Fall-Redemption (CFR) ground-motive is different, encouraging a pluralistic rather than dualistic view. Thought influenced by it presupposes that reality of which we are part has been created by an Origin that transcends it, and is therefore inherently good. Normativity is no longer located in polar opposition, but in response to the Creator and to the plurality of meaning, 'Fall' referring to hostile response. 'Redemption' involves repentance of hostility, with healing action by the Creator. Dooyeweerd believed that CFR is the ground-motive expressed in the Judeo-Christian Scriptures (though most of Christianity has been influenced more by the Nature-Grace ground-motive that privileges the supernatural over the natural, than by CFR).

2.2 The Effect of Ground-motives

In (1979) and in 500 pages of (1955), Dooyeweerd's exposition of these takes the form of a long, complex story rather than a logical proof. A ground-motive directs not so much the thought of individuals as what a thinking community believes might be problematic about extant thought, and thus the direction it takes when trying to develop new ways of thinking. This in turn influences theories and methodologies that emerge. Theory that has arisen from dualistic ground-motives tends to deem half of pre-theoretical experience uninteresting (to descriptive knowledge) or harmful (to normative knowledge), so dualistic ground-motives restrict or distort the views of thinkers. This restriction is largely invisible to theoretical thought influenced by the ground-motive, because it treats the ground-motive as a 'truth' too obvious to be questioned. Thought controlled by dualistic ground-motives can never reconcile the poles because it presupposes polar opposition.

A ground-motive influences pre-theoretical, everyday thinking only when the latter adopts, unquestioned, the products of theoretical thought and is led by them. When pre-theoretical thought is not so led, the limitations and flaws of the dominant ground-motive can become visible. This is one reason why Dooyeweerd treated pre-theoretical thought with utmost respect.

2.3 The Humanistic Nature-Freedom Ground-motive and IS Research

The ground-motive that has most influenced modern and postmodern thought, including IS approaches, is the Humanistic Nature-Freedom ground-motive, though the others are still active. This sees reality dualistically as a world that operates by deterministic (mechanical) law (Nature pole), versus human consciousness that is autonomous (Freedom pole). Freedom is presumed to be antithetical to constraint, law or control.

Dooyeweerd (1955, vol. I) traced the many turns occasioned by this ground-motive, through Descartes, Leibniz, Locke, Hume, Rousseau, Kant, Fichte, Hegel, Husserl, Heidegger and others. He showed how they either deny one half of pre-theoretical experience of human and world or drive two halves apart into disconnected realms. Hume, for example, set a gulf between normativity ('Ought') and existence ('Is'); this explains Klein's (1999) concern that research confines itself to description and ignores normative knowledge. In his 'Copernican Revolution' of thought, Kant drove these further apart, and set a gulf between (free) thought and (given) thing, showing convincingly that (if we presuppose this ground-motive) we can have no direct access to

the thing-in-itself if we presume we are free. This leaves no choices but subjectivism or objectivism. Any attempt to bring them together can have no proper philosophical foundation under this ground-motive.

In everyday experience, however, thinking, being and normativity, and freedom and control, coalesce. Driven by this, philosophies since Kant have tried to bridge Humean and Kantian gulfs. For example, Husserl's transcendental phenomenology tried to bridge the gulf between thought and thing; Heidegger's existentialism tried to dissolve the separation between being and world; Gadamer's hermeneutics tried to dissolve being into interpretation; Marx tried to dissolve freedom into historical causality; Wittgenstein tried to dissolve linguistic law in free 'games'; Bernstein tried to go beyond objectivism and relativism; Hegel tried, in Dooyeweerd's words (1955,I,p.65), to merely "think the poles together"; so does critical realism. Yet none have unambiguously succeeded; none offer a "proper philosophical foundation" for their desired integration. According to Dooyeweerd this is because, operating within the Nature-Freedom ground-motive, they presuppose the opposition of the poles they are trying to unite.

Though this oversimplifies Dooyeweerd's complex story, it exposes the root of the problem for IS in the presumed opposition of Nature and Freedom:

- Interpretivism will always tend to be antithetical to positivism because freedom of interpretation is Freedom pole while laws that transcend us are Nature pole.
- Interpretivism will always tend to be antithetical to the normative element of socio-critical approaches because freedom of action is Freedom pole while requirements laid on us are Nature pole.

(Eriksson (2003) applies this similarly to hard, soft and (socio-)critical systems thinking.) The Kleinian "Trojan horse" is that these gulfs cannot be bridged by theoretical thought that is guided by the Humanistic Nature-Freedom ground-motive - which includes most philosophical turns since Kant.

3. TRANSCENDENTAL GROUND-IDEAS: A BASIS FOR DIALOGUE

The historical influence of ground-motives was demonstrated by Dooyeweerd and we can see it in IS research; but is it inescapable, or is pure, unbiased, ground-motive-free theoretical thought possible in principle? Dooyeweerd (1955,I,p.34-59) sought to determine, by so-called transcendental critique, the universal and necessary conditions that make theoretical thought possible. He found that ground-motives are inescapable, because they constitute the very kernel of theoretical thinking itself. In so doing, he also provided a basis on which supposedly incommensurable philosophies can understand each other. This will be explained briefly and then applied to three ISR approaches.

3.1 Process and Attitude in Theoretical Thought

Kant and Husserl also made transcendental critiques of theoretical thought but Dooyeweerd believed (1999,p.6) they did not go deep enough. They focused on the *process* of theoretical thought but both presupposed the theoretical *attitude* of thought taken during the process, and failed to see that it too needs transcendental critique. Klein (1999) likewise considered process rather than attitude when he differentiated methods of inquiry and the types of knowledge they generate.

Klein & Myers (1999) and Myers & Klein (2011) differentiate the role that theory plays in each approach - theory is tested in positivist research, used as a lens in interpretivist research and used to guide critique or transformation in socio-critical research. Though such typologies can *differentiate* the approaches, to *integrate* them requires understanding of what is common among them, namely the theoretical attitude of thought researchers take to the world they study - to quantified 'facts', to the interpretable world, and to the world that is critiqued and transformed, respectively. As Dooyeweerd said (1955,1,p.35), "no veritable philosophy whatsoever can escape this attitude"; philosophy underlies all ISR approaches.

3.2 Ground-ideas of Philosophy: Three Transcendental Questions

For three millennia, few philosophers have adequately explored the difference between theoretical and pre-theoretical attitudes of thought. It was with this difference that Dooyeweerd began his transcendental critique. He argued that there are three transcendental, basic questions about theoretical thought, each one leading to the next and the third lying at the heart of theoretical thought. Kant addressed the second, Husserl addressed the first, but neither addressed the third. Any full philosophy must provide, or assume, answers, and it is these answers (together forming its 'ground-idea') that differentiate each philosophy from others and provide a basis for discourse among them.

By 'theoretical thinking' Dooyeweerd did not refer only to that which the individual undertakes, but also to the on-going process by which a thinking community develops its theoretical knowledge by critical discourse about contributions that individuals make (e.g. via papers). His transcendental questions are thus "supra-individual" (Dooyeweerd, 1955,I p.59).

Question 1: What is the difference between theoretical and pre-theoretical attitudes of thought? In the pre-theoretical (or naïve or everyday) attitude we engage with the research situation ('world') as a totality with diversity of meaning exhibited therein: "naïve experience has an integral vision of the whole" (Dooyeweerd 1955,I,p.84). By contrast, in the theoretical attitude of thought **we abstract aspects** of this whole that are meaningful to us and ignore the rest. In doing so, we take an antithetical stance over against the world (Dooyeweerd called this a *Gegenstand* relation). Aspect-abstraction is what yields data to which we apply our analytical faculty.

Question 2: What makes it possible and valid to apply our analytical faculty to this data? As Kant argued, and Dooyeweerd accepted, if the research community is to generate new knowledge that is not mere deduction from what is already known, it must apply our analytical faculty to the data. Kant called this application the theoretical synthesis and discussed how it occurs but not why it is valid. Dooyeweerd explored the conditions for it to be valid, by posing the question of which type of rationality should govern the application: that of the data or that of our analytical faculty. Like Winch (1958) and Habermas (1986), Dooyeweerd recognised the possibility of multiple rationalities, arguing that there is no rationality that, *a priori*, may be allowed to dominate. Something beyond rationality must transcends both. He argued that it is the **human being**, the interpreting, thinking, acting, believing human being, which transcends rationalities and must take responsibility for linking them. Echoes of this may be found in Foucault's genealogy of knowledge.

In the discursive process of generating new knowledge, usually through writing, thinkers actually employ many rationalities to handle data. The way we understand ourselves affects the way we employ rationalities. Usually this understanding is tacit but in critical discourse it needs to be justified, which means exposing presuppositions about how we understand ourselves. This involves critical self-reflection ("Philosopher, know thyself").

Question 3: What makes critical self-reflection possible and valid? Though scientific stances, such as psychology or sociology, can provide insight into human *functioning*, they cannot provide insight into the human *selfhood*; if we approach this with science, "the 'authentic', the 'fundamental' I-ness ... will ever recede from our view" (Dooyeweerd, 1955,I,p.58). Philosophical views of the human, as rational autonomous individual, as Popperian falsifier, as Habermasian intersubjective communicator, as Foucauldian nexus of power, etc. fare little better.

In fact, argued Dooyeweerd, critical self-reflection cannot be achieved by any theoretical thought, whether scientific or philosophical. It is necessarily carried out by reference to, and within, a framework of meaning, which is presupposed. To justify that framework of meaning during critical discourse requires reference to an **origin of all meaning**.

It is not that the individual thinker necessarily ponders the origin of meaning but that discussion of contributions is governed by what the community (tacitly or explicitly) deems meaningful, and such a meaning-framework has an origin. The meaning-framework is what motivates the community's interest in the research, affects how the community addresses Questions 1 and 2, influences the generation of new ideas and forms the basis for contesting validity claims made during discourse.

The origin of meaning, from which meaning-frameworks arise is the dominant ground-motive. The origin of meaning determines how the community moves from one meaning-framework to another. Often the new meaning-framework emerges as a critique of earlier ones which, it believes, ignored something meaningful, and emphasises that meaningful aspect. Under a dualistic ground-motive, only its two poles are ultimately meaningful, so the movement becomes a dialectical swing. For example, interpretivist reaction against positivism was likely to emphasise what the Nature-Freedom ground-motive tells us had been suppressed: free interpretation. (Anti-positivist reaction under the Nature-Grace ground-motive emphasises Divine action instead.)

The community's relationship to an origin of meaning is religious in nature, where 'religion' is used in a technical sense as a binding of the self to its firm ground (Dooyeweerd 1955,I,57-58): a deep. usually tacit, belief or commitment. 'Religion' here does not refer to organised creeds but finds echoes in Richardson & Robinson's (2007) 'political' in "academic publication is first and foremost a political rather than epistemological issue."

So Dooyeweerd subverts all claims that theoretical thought is neutral, self-sufficient or autonomous of any external influence, but for a different reason from that found in post-Kantian thought. It is not that thought is disconnected from the thought-about thing but that all theoretical thought is belief, and meaning is foundational. Dooyeweerd's explanation has the advantage of being more commensurable with everyday experience, where we believe we do know things and where being, meaning and normativity coalesce.

3.3 Ground-ideas of ISR Approaches

Dooyeweerd (1955,I,p.70,526) claimed that explication of ground-ideas opens the way for discourse among philosophies. The three transcendental questions can be reformulated for ISR approaches as:

- Q1 concerns the world: What kinds of data do researchers expect to be abstracted from the world when they take a theoretical attitude (*Gegenstand*) to it?
- Q2 concerns rationalities and researcher: How does the researcher, as human being, employ various rationalities?

- Q3 concerns meaning: What makes the research meaningful, to inspire the thinking community to take an interest therein, and how does it relate to the dominant ground-motive, Nature-Freedom?

Positivism, a response to the Kantian gulf that was influenced by the Nature pole, presupposes that the world operates by invariant, causal, largely mechanical, laws. This is the origin of meaning that inspires it. Positivism tries to minimise expressions of Freedom in both researcher and researched world. Of world, it seeks quantified 'facts' obtained by empirical means. Of researcher, it demands detachment and suppression of opinion, belief, ethics and pure reflection, and a reduction to logical-statistical rationality in order to minimise free variability.

The interpretivist approach, of which Checkland (1981) and Klein & Myers (1999) are well-known exponents, has its roots in phenomenology and hermeneutics. As a dialectical reaction against positivism motivated by the Freedom pole, its world is constituted of idiographical interpretations ('appreciations': Checkland). In contrast to positivism, each case studied is distinguished from others, by clearly articulating its detail and context ("social and historical background": Klein & Myers). Instead of logical rationality, it is harmony between detail and context that is important (Klein & Myers 1999,p.71, citing Gadamer), implying an hermeneutic cycle. The researcher is seen as sense-maker who must, because of the Freedom pole, be autonomous, with no constraints allowed. The meaning-framework is the set of beliefs or assumptions held by participants (researcher and/or researched) about what is important - *Weltanschauung*, which Checkland (1981) defines as "that which makes ... meaningful". The origin of meaning is the Freedom pole, so *Weltanschauungen* and other beliefs and assumptions go unquestioned. This yields research that fails to detect and challenge distortions (Hirschheim, Klein & Lyytinen 1995).

To the socio-critical approach, the world consists of social structures to be critiqued and transformed. What these are depends on which socio-critical theory inspires the ISR (Bourdieu, Foucault, Habermas): oppression, power, prevailing beliefs, beliefs of researcher, even socio-critical theories themselves (Myers & Klein 2011). Researchers are seen as emancipators who critique and transform both the status quo and their own fallible beliefs. The rationality that governs research is either emancipatory or communicative (Klein & Lyytinen 1991; Cecez-Kecmanovic, Janson & Brown 2002), though the communicative rationality always has a subversive flavour that undermines assumptions and welcomes conflict. In tone, much socio-critical literature is reminiscent of theological apologetics, which treats a text (from Bourdieu, Foucault, Habermas) as sacred and seeks to promote its views. What gives meaning to motivate critique and transformation is freedom from unwarranted constraints (Hirschheim, Klein & Lyytinen 1995). This originates in the Nature-Freedom ground-motive but it sits uneasily astride the two poles because the norm of freedom itself becomes a constraint and the implied notion of warranted constraints has no meaning within this ground-motive. The polar tension in the socio-critical approach has been highlighted and discussed by Wilson (1997) and Eriksson (2003).

This understanding of the three approaches is summarised in Table 1.

ISR approach	World	Rationality & Researcher	Meaning
Positivist	Quantified 'facts'	Logical-statistical rationalities applied to 'facts' by detached observer (with opinions etc. suppressed)	Causal mechanism (Nature pole)

Table 1. Ground Ideas of Three Approaches to IS Research.

Interpretivist	Subjectively-formed (autonomous) interpretations of things and their contexts	Interpretations are harmonised by sense-maker using hermeneutic cycle.	Freedom-pole presupposition that beliefs go unquestioned.
Socio-critical	Social structures of domination and power; Prevailing assumptions; Researcher's own beliefs, including socio-critical theories	Emancipatory and subversive-communicative rationalities applied by self-critical emancipator; also theological apologetics	Freedom from unwarranted constraints, imposed as a norm (both poles, in tension).

Assumptions about meaning, researcher and world have been identified, but not yet integrated. Dooyeweerd's Cosmonomic Philosophy can facilitate this.

4. DOOYEWEERD'S COSMONOMIC PHILOSOPHY

Dooyeweerd's Cosmonomic Philosophy is a philosophical outworking of the Creation-Fall-Redemption (CFR) ground-motive. CFR makes it easier than do the dualistic ground-motives to philosophically address the diversity of meaning and normativity encountered pre-theoretically in everyday experience. Question 3 is the starting point.

4.1 Re. Q3: Meaning, its Origin and Diversity

At least four types of meaning can be distinguished: significations carried by language, reasons why something comes into being (such as the purpose of an ISD project), meaning ascribed by us to existing things, and deep meaningfulness (as in 'meaning of life'). All these types, especially the fourth, impel and motivate a research community's discourse. All have a deeper origin. The Humanistic ground-motive provides one that is divisive; Dooyeweerd provides on that is more integrative.

Dualistic ground-motives divorce meaning from reality (Dooyeweerd 1955,I,p.502) - under the Nature pole of the Humanistic ground-motive, meaning is reduced to an immaterial property of things, and under the Freedom pole, meaning is autonomous, (inter)subjective ascription. Under both, meaning is arbitrary and the fourth type is an embarrassment. To Dooyeweerd, meaning is central, especially the fourth type. "*Meaning*", wrote Dooyeweerd (1955,I,p.4), "is the *being* of all that has been *created* and the nature even of our selfhood." Meaning has the character of referring beyond itself (p.4), the first three types of meaning referring to, depending on, the fourth, which may be seen as an horizon within which we live, or a meaning-framework that transcends us. Under Dooyeweerd's ground-motive, the transcendent meaning-framework itself refers to its Divine Origin.

The transcendent meaning-framework is diverse, exhibiting multiple aspects. Dooyeweerd saw aspects as *spheres of meaning and law*, centred on a kernel that is irreducibly distinct from others, surrounding which is a constellation of meanings we can experience. In (1955) Volume II, he made a penetrating exploration of aspects, delineating fifteen that are summarised in Table 2. This attempts to express something of the kernel and constellation of each aspect, including its meaning and normativity, with examples explained below, and is intended to help readers understand later references to individual aspects.

Table 2. Dooyeweerd's Aspects, their Kernel Meanings and Normativity

Aspect	Meaning	Good (normativity)	Example functioning in ISD
Quantitative	Reliable amount	n/a	Seven (generations of ISD).
Spatial	Simultaneity, continuity	n/a	[Design the screen layout.]
Kinematic	Movement	n/a	[Construct animation.]
Physical	Energy, causality	n/a	[Power cuts halt work!]
Biotic / Organic	Life functions	Vitality	[People off sick.]
Sensitive / Psychic	Feeling, responding, sentience	Interactivity	[Audio cues enhance user interface.]
Analytical	Distinction, non-contradiction	Clear conceptualisation, logicality	Must define objectives clearly.
Formative	Shaping, control, power, technique, processing	Achievement, innovation, technology, history	Must plan and control ISD project. objectives.
Lingual	Symbolic signification	Understandability, records, communication	Specifications are written. Communication gaps must be bridged.
Social	Social relationships, institutions, roles	Acting-together	Participation and leadership are both necessary.
Economic	Management of scarce resources	Frugality, sustainable prosperity	Production must be cost-effective.
Aesthetic	(a) Harmony; (b) Play	Enjoyment, fun	[The IS should be pleasant to use.]
Juridical	Due, appropriateness	Justice for all; righting wrongs	Ensure "right kind of system". Uphold workers' rights.
Ethical	Self-giving love	Attitude pervading society	[ISD quality is affected by attitude that pervades team.]
Pistic / Faith	Vision, commitment, certainty, belief (esp. shared)	Worth, meaningfulness, identity	Conflicts are fuelled by clashing beliefs. Radical change requires commitment.

It may be noticed that Dooyeweerd's suite covers aspects meaningful in societal, social, cognitive, 'natural' and mathematical sciences. It can deliver a "parsimonious typology" as Klein (1999) desired, but one based on ways in which things can be meaningful, rather than on processes or types of knowledge, and will be used to suggest how the ISR approaches complement each other, with each approach focusing on certain aspects and ignoring others.

4.2 Re. Q1: Meaning and the Functioning of the World

Question 1 concerns aspects abstracted from the world. Seeing them as spheres of meaning and law makes the concept of aspects more serviceable. The world exhibits all the aspects, so the abstractive *Gegenstand* relationship of theoretical thought may now be seen as focusing on ways, chosen by the thinker, in which the world is meaningful; for example, the psychology of those

researched (psychic aspect), the flow of information (lingual), relationships, roles and organisations (social), beliefs (pistic), and so on.

The entire world functions in all spheres (aspects) and this generates repercussions, a different kind of functioning and repercussion in each sphere. In column 4 of Table 2 the aspectual functioning that constitute ISD projects is illustrated by statements related to ISD that are meaningful in each aspect; most derive from Hirschheim, Klein & Lyytinen (1995,pp.30-31), with other examples in square brackets.

The functioning-repercussion link, which, in the physical aspect, is causality, becomes increasingly non-deterministic in the later aspects. Such law should not be confused with social norms or rules, which are social constructions, nor with our knowledge thereof, nor with authoritarian demand. It is more like promise that invites response ("If you do X then Y is likely to result"). Functioning in an aspect in line with its laws brings beneficial repercussions, and dysfunction brings detrimental repercussions. This provides an understanding of a diverse normativity (good versus evil), illustrated by examples in column 3. For example, clarifying objectives is analytical functioning that is good; lack of clarity (analytical dysfunction) results in confusion.

Though each aspect is irreducibly distinct from others in terms of its meaning and law, there is also a coherence among the aspects, of three main types. First, functioning in later aspects depends on functioning in earlier aspects so, for example, planning of ISD projects (formative functioning) cannot proceed without things to plan, conceptualised by analytical functioning. Second, each aspect contains analogical echoes of others (for example, physical causality has analogies in the functioning-repercussion links of other aspects, such as analytical premise-conclusion and formative historical outcome). Third, Dooyeweerd maintained there is no inherent conflict between aspects. Any apparent conflict (such as the belief that ethicality jeopardises business success) arises from *misunderstandings of* aspects, often because of the Nature-Freedom ground-motive.

4.3 Re. Q2: Rationalities, Researcher and Knowledge

The concept of multiple rationalities may be understood more clearly by reference to aspects. Each rationality arises from an aspect's kernel meaning as a way of 'making sense'. No one rationality can be reduced to others and there is no 'higher' (meta-)rationality to bind them together. For example, analytical, social and legal rationalities are very different, but all rationalities are important in the community's real-life discourse about the field; see example from Klein & Rowe (2008) below.

Traditionally, knowing has been restricted to its analytical aspect, but to Dooyeweerd knowing is functioning in all aspects, analytical knowing being only one type. This echoes other recent contributions, including Foucault's genealogy of knowledge (social, formative/historical aspects of knowing), Habermas' Theory of Communicative Action (lingual), feminist ideas of body, emotion and care (biotic, psychic, ethical), and even Dooyeweerd's own notion of ground-motives (pistic). Basden (2008a) contains a fuller discussion but comprehensive comparison is future work.

The thinker is part of the thought-about world, being subject to the same spheres of law and meaning, so human theoretical thinking is always fallible. However we should not assume a Kantian gulf between thought and world. To Dooyeweerd, the world prefers to reveal rather than hide itself, since both it and the thinker function in the same aspects. Good knowledge comes not through theoretical thought (which is analytical, distal *Gegenstand*) but through proximal engagement with the world in all aspects; the full human activity of knowing is multi-aspectual.

The Kantian gulf may be seen as insight into the nature of analytical *Gegenstand* rather than, as unfortunately it became under the Nature-Freedom ground-motive, the condition of all knowledge.

Concerning theoretical knowledge of the aspects themselves, such as is being portrayed in these paragraphs, Dooyeweerd made clear (1955,II,p.556):

> "In fact the system of the law-spheres designed by us can never lay claim to material completion. A more penetrating examination may at any time bring new modal aspects of reality to the light not yet perceived before. And the discovery of new law-spheres will always require a revision and further development of our modal analyses. Theoretical thought has never finished its task. Any one who thinks he has devised a philosophical system that can be adopted unchanged by all later generations, shows his absolute lack of insight into the dependence of all theoretical thought on historical development."

The kernel meanings of the aspects are not penetrated by theoretical thought, so Dooyeweerd's suite is no "great, infallible truth" (Klein 1999,p.23). However, they can be grasped by pre-theoretical intuition. Even intuition is not absolute but it does at least provide hope that knowledge can be reasonably relied on, without resorting to the dogma of critical realism.

More practically, perhaps, Dooyeweerd's view of aspects can provide a basis for mutual understanding between researcher, the researched, and the research community, even when they cross cultural boundaries. Though theoretical knowledge of them might differ, the same aspects pertain for all and are proximally-intuitively grasped by all. This possibility was beginning to be explored by Basden & Klein (2008).

5. INTEGRATION OF ISR APPROACHES

Dooyeweerd dissolves the Nature-Freedom opposition, not by ignoring either pole nor by thinking them together uncritically, but by redefining both Nature and Freedom as meaningful response to aspectual law, the latitude of which increases with later aspects. Pre-human 'nature' is governed by only the first six aspects; humanity is governed also by the rest. The Humean gulf is obliterated because being and normativity have the same source, aspectual law. The Kantian gulf is seen in proper perspective, as referring only to the theoretical *Gegenstand* relationship set within a wider context of human engagement in the world. Since meaning and normativity inhabit the same aspects, descriptive and normative knowledge naturally coalesce.

With this in mind, integration of the three ISR approaches may be discussed.

5.1 Reinterpreting the Ground-ideas

First the ground-ideas of the three main ISR approaches will be reinterpreted by reference to, not the divisive Nature-Freedom ground-motive, but Dooyeweerd's aspects, which reflect the diversity and coherence of meaning and normativity within which all ISR is carried out. For each transcendental question, aspects are treated in a different way, as ways of functioning, as rationalities and as spheres of meaning respectively. Reinterpretation might proceed as follows.

Since, to Dooyeweerd, the world functions in all aspects, the views of the world taken by the three ISR approaches may be understood as abstracting different aspects thereof. Positivist research expects the world to be quantifiable, usually involving counts of things (*quantitative* aspect). The interpretivist expectation of distinct cases and clearly articulated detail and context is rooted in the *analytic* aspect. Socio-critical research expects a world constituted of social

structures, power-relations and/or assumptions, depending on whether its foundational theory is from Bourdieu, Foucault or Habermas. These phenomena are meaningful primarily in the *social*, *formative* and *pistic* aspects respectively.

Since Dooyeweerd sees humanity as functioning in all aspects, and sees rationality as distinct for each aspect, the ISR approaches may be differentiated according to what types of human functioning they recognise and which aspectual rationalities they employ. Positivism refuses to recognise the humanity of the researcher, and dogmatically gives absolute priority to logical-statistical rationalities (*analytic* and *quantitative*). Harmonisation, which is important in interpretivist ISR, is governed by the rationality of the *aesthetic* aspect. This is expressed in Klein & Myers' (1999) principles of the hermeneutic cycle, contextualization, and multiple interpretations. In socio-critical ISR, emancipatory and communicative rationalities are governed by the *juridical* and *lingual* aspects, and subversion and theological apologetics by the *pistic* aspect. Recognition of pistic rationality may be found in Myers & Klein's (2011) principles of using core concepts from socio-critical theorists ('sacred' texts), taking a value position (commitment), and of challenging prevailing beliefs (subversion). We might also note Klein's emphasis on self-critique (Myers & Klein 2011; Basden 2002b), which is a rationality of self-giving (*ethical* aspect).

As origin of meaning, the Nature-Freedom ground-motive offers only its two poles; Dooyeweerd offers diverse spheres of meaning. Each research approach may be reinterpreted as aligning with one or two spheres (aspects) that inspire it, on the basis of which its research is judged. Positivist research is inspired by the notion of causality and mechanism, even though this might have been softened in recent years. Causality is primarily of the *physical* aspect. Interpretivist research is inspired by sense-making, which presupposes beliefs, *Weltanschauungen* and assumptions: the *pistic* aspect. Socio-critical ISR is inspired by the notion that something is wrong in the structures that affect human life. Wrongness and rightness are notions at the heart of the *juridical* aspect, as are the key ideas of 'unwarranted' and emancipation.

This, of course, oversimplifies a much more complex story. In their slow development and interaction the three approaches in fact exhibit every aspect. Nevertheless, the aspects identified above play the major part in that story, and provide pointers to integration. They are summarised in Table 3.

Table 3. Main Aspects of Positivist (P), Interpretivist (I) and Socio-critical (C) ISR			
Aspect	**World**	**Rationality**	**Meaning**
Quantitative	P: quantified 'facts'	P: statistical	
Spatial			
Kinematic			
Physical			P: mechanistic causality
Biotic / Organic			
Psychic / Sensitive			
Analytical	I: distinct cases, detail and context	P: logical	

Formative	C: power-relations		
Lingual		C: communicative	
Social	C: social structures		
Economic			
Aesthetic		I: harmonising	
Juridical		C: emancipatory	C: 'wrongness', 'unwarranted' C: emancipation
Ethical		C: Kleinian self-critique	
Faith / Pistic	C: assumptions	C: subversion C: apologetics	I: Sense-making: belief, *Weltanschauung*, meaningfulness

Each ISR approach therefore answers each transcendental question by reference to one or two aspects. This can suggest routes to integration.

5.2 Integration of Ground-ideas

The important aspects of the ISR approaches seem complementary. So, since there is no inherent conflict between aspects, it is possible to affirm each approach without necessarily denying others.

We may attempt an integration by blending the aspects from each approach, within each transcendental question, such that no aspect dominates. Thus the world would be expected to involve interpretations and quantifications especially of social structures, power-relations and assumptions; this finds echoes in Doolin & McLeod's (2005) critical interpretivism. The rationalities employed would be from quantitative, logical, aesthetic, juridical, ethical and pistic aspects; this dispels the illusion that a single rationality can suffice. The meaning that motivates the community's interest in the research, and upon which validity claims are contested, would include the physical notion of causality (probably in its analogies in other aspects), the pistic notion of committed belief and the juridical notion of due (rights).

However such a combination of extant approaches might be rather weak, because aspects are missing (gaps in Table 3), and for some aspects not all their potential is exercised (for instance, aesthetic rationality concerns beauty and enjoyment as well as harmonising). Instead, a more profound Kleinian integration starts with the aspiration to recognise all aspects fully for each transcendental question.

1. World and abstracted data. The world to be researched is expected to function in all aspects, so, in principle, all aspects should be able to be abstracted. Though, in each project, certain aspects are of primary interest, researchers and the researched should be aware of the potential salience of all other aspects, and research methods should be designed to encourage rather than discourage this. To avoid overlooking any aspect, Dooyeweerd's suite can be employed as a checklist, but it is better to allow the participants to identify their own aspects, as Winfield's Multi-aspectual Knowledge Elicitation (MAKE) methodology does (Winfield, et al. 1996).

2. Researcher. The full, multi-aspectual humanity of the researcher should be respected by the community: rights, beliefs, feelings, etc. and the researcher should likewise respect those of the researched.

3. Normativity. Recognising all aspects infuses all ISR with diverse normativity. So the researcher - whether positivist theory-tester, interpretivist sense-maker or socio-critical emancipator - always and inescapably bears responsibility of two kinds, for the process of the research, and for the repercussions of the research in its context of application (both direct and structural). Good research papers already tacitly recognise this by discussing their own shortcomings (aspects of process) and possible contribution (aspects of repercussions), but explicit awareness of all aspects can enrich both. What Dooyeweerd offers is a "reasoned understanding" (Klein, 1999) why normativity is inextricably linked with understanding rather than being optional.

4. Rationalities. All rationalities should, in principle, be employed by the researcher and the research community during written and other discourse. While good researchers employ analytic, formative and lingual rationalities in their papers (clear, well-structured, well-written argument), great researchers employ all aspectual rationalities. Klein & Rowe's (2008) discussion of professionally qualified doctoral students (PQDSs) is a good example. Not only is the paper clear, well-structured and well-written, but it also employs *social rationality* by tailoring the argument to show respect to those involved and applauding the special 'applicative' knowledge of PQDS, *ethical rationality* by focusing on achieving good for others even at expense of self (extra effort to tailor doctoral programmes to the specific needs and skills of PQDSs), and *pistic rationality* which, in the final paragraph, seeks to motivate us to this.

Of course, unscrupulous writers can employ such rationalities to promote their views unfairly. This motivated positivist denial of opinions and restriction to analytic rationality, but Dooyeweerd's response was not to limit rationality but to ensure good functioning in all aspects. Great researchers obey the rationality and norms of the *ethical* aspect especially. This was exemplified in Heinz Klein who, rather than forcing his views on readers, was always self-critical and open to many views (including that of Dooyeweerd), giving them space to expand and grow.

5. Origin of meaning. The community's interest in research should be motivated by all aspects, even when one is particularly important, at two levels. At the level of research projects and programmes, all aspects should be seen as meaningful; for example the aesthetic aspect of fun when researching Internet gaming, not just the juridical, pistic and physical aspects that inspired socio-critical, interpretivist and positivist ISR (Basden 2010). At the higher level too, of contributing to humanity's project of constructing knowledge, research should be inspired not just by the physically-, juridically- and pistically-relevant visions of mechanism-discovery, emancipation and sense-making but also by, for example, the formatively-, economically-, aesthetically- and lingually-ethically-relevant visions of achievement, prosperity, beauty and a more open society. Though writers often draw attention to these individually, the inner harmony among Dooyeweerd's aspects provides the possibility of, and incentive for, holding all the visions together and giving each its due.

Of course, to develop ISR along these lines, with methods that encourage rather than discourage them, is long-term, future work. However the question might be raised whether, if we adopt a multi-aspectual approach, we need any reference at all to extant ISR approaches, or whether we can build a new approach from scratch. In theory, building from scratch might be possible, but that ignores the historical process, which Dooyeweerd always respected. Extant approaches contribute their histories and interests in a multi-aspectual approach. However, no longer do they see themselves as competing, no longer does the socio-critical approach demolish without rebuilding (Brooke 2002), but each takes on an attitude of humility and harmony.

6. CONCLUSION

Klein's (1999) project of integrating interpretivist and socio-critical approaches poses significant challenges, but this Dooyeweerdian analysis has given it hope.

Fearing that interpretivism's reluctance to recognise the normativity that is so important to socio-critical approaches might be a "Trojan horse, which brings down the whole integration project", Klein warned that we should seek a "proper philosophical foundation", not just "liaisons of convenience". Employing Alvesson & Deetz' (2000) identification of three components of socio-critical research as insight, critique and transformation, Myers & Klein (2011) suggest that interpretivist insight-generation might be coupled with normative critique and transformation, and that the focus for insight must be social structures. Unfortunately, coherence between interpretivist insight and normative critique and transformation is not philosophically guaranteed because of fundamental dichotomies.

This paper has offered a "proper philosophical foundation" that overcomes these dichotomies and makes positive proposals for the Kleinian project of integration. It employs Dooyeweerd's notions of historical ground-motives to expose the roots of the problem, of transcendental ground-ideas to provide a basis for dialogue between approaches, and of meaning-oriented aspects to reinterpret the ISR approaches, propose an integration and point to the possibility of future enrichment. Dooyeweerd's aspects may serve as a "parsimonious typology" (Klein 1999,p.14) in which normativity, meaning and being are interwoven, as in pre-theoretical experience. Furthermore, Basden (2010) shows that Dooyeweerd's philosophy can establish the validity of Klein's whole approach and extend it to new contexts of IS use.

Relevant to IS research more generally, Dooyeweerd's claim that no sound foundation for integration can be found in philosophies influenced by the Nature-Freedom ground-motive challenges those who look to post-Kantian turns in philosophy (phenomenological, hermeneutic, dialectical, Nietzschean, linguistic, post-structuralist, existentialist, postmodernist, feminist or critical realist) for a way forward, to articulate more clearly the basis of their hope. A framework for such articulation may be found in Dooyeweerd's three transcendental questions - about world, human thinker and origin of meaning - which help to expose limitations in relation to pre-theoretical experience, and begin dialogue with other approaches. Here the positivist, interpretivist and socio-critical approaches have been thus examined, but others can be treated likewise.

The paper has shown that Dooyeweerdian philosophy has a certain utility in advancing a line of research. Whereas most extant application of Dooyeweerd to IS, such as those listed earlier, demonstrates how individual portions of Dooyeweerd's philosophy (either aspects or ground-motives) can shed light on specific issues of IS, this paper combines Dooyeweerd's notions of ground-motives, ground-ideas and aspects to diagnose a previously intractable problem, provide a framework for discussion and outline a solution.

The analysis in this paper has necessarily been brief and indicative rather than exhaustive and there are several directions in which further research can be developed. A more penetrating investigation of ground-ideas of ISR approaches is called for, especially considering approaches beyond positivist, interpretivist and socio-critical. The aspiration for a Kleinian integration has been assumed rather than argued, but requires discussion, because Richardson & Robinson (2007) suggest that integration is not needed and Klein (1999), Klein (2009) and Hirschheim, Klein & Lyytinen (1995) all suggest that conflict stimulates new ways of thinking. Dooyeweerd's notions of ground-motives and ground-ideas might facilitate this (Dooyeweerd 1955,I,p.70,526), as might Basden's (1999) aspectual view of dialectics.

The Dooyeweerdian approach offers a good basis for a comprehensive discussion of practical principles such as found in Klein & Myers (1999) and Myers & Klein (2011) and how they can be integrated without danger of disconnect between insight and critique. Dooyeweerd's theory of individuality structures could be employed to inform debate about social and other structures, and his theory of time, to inform debate about the nature of freedom and of societal development (see Basden (2008a) for systematic discussion of these).

It might be wondered whether Dooyeweerd's thought, based on the Biblical ground-motive, would be incommensurable with Kleinian thought, based on the Humanist ground-motive. As is discussed in Basden (2008b), this need not be the case. Basden & Wood-Harper (2006) used Dooyeweerd to enrich another strand of Humanist thought, Checkland's CATWOE analysis, and Basden & Klein (2008) used Dooyeweerd alongside extant approaches in linguistics.

Dooyeweerd need not supplant extant work, but rather provides a meaning-based, diversity-oriented foundation for its critical affirmation and enrichment. Not only does Dooyeweerd's philosophy help us expel Klein's (1999, p.22) 'Trojan Horse' that might undermine integration of interpretivist, socio-critical and positivist approaches, not only does it provide a positive philosophical basis for their integration, but it also opens up possibilities of a richer future for information systems research.

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