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How Dooyeweerd Can Engage With Extant Thought: Expanding Kleinian Principles in Information Systems Use Today

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ABSTRACT

Heinz Klein's approach to information systems was a significant advance on earlier approaches. He brought together in one coherent approach a number of issues discussed in interpretivist and critical circles, with a sound philosophical grounding. But the Kleinian approach is not entirely suited to today's IS use. This paper critically examines the characteristics of the Kleinian approach, uncovering some assumptions, and suggests transforming them using Dooyeweerd's philosophy. This paper makes contributions in two directions: to Kleinian IS research and to Dooyeweerd's philosophy.

Keywords: Heinz Klein, Dooyeweerd, Information systems use, Law side, Spheres of meaning and law, Aspects

1. INTRODUCTION

In 2002 Heinz Klein, one of the major figures in the field of information systems (IS), gave a one-day seminar on Habermas at the University of Salford, UK [Klein 2002]. Towards the end, he listed criteria he thought essential to critical IS research, identified a few critical philosophers and asked whether anyone knew of any others. I suggested Dooyeweerd, briefly showing how his thought satisfied the criteria. Somewhat to my surprise, because Dooyeweerd is not well-known yet, Heinz accepted this and added Dooyeweerd to his presentation. That gave me confidence to explore further and I published initial ideas on how Dooyeweerd could satisfy Klein's criteria in Basden [2002].

Over the years, Heinz began to show interest in Dooyeweerd's thought, especially his notions of ground-motives and law-side intuition (explained later). The aim of this paper is to explore what it is about Dooyeweerd's philosophy that might be interesting to the Kleinian approach to information systems (IS). Instead of a dry philosophical argument, this exploration is set in context of the practical, and perhaps more important, question of how to ensure the Kleinian approach is suited to IS use today.

Heinz Klein did not himself describe an approach, but Hirschheim & Myers [2009] posthumously summarise the Kleinian approach as:

- post-functionalist: delivery of information is secondary to changing organisational relationships between people;
- axiological: the technical-economic imperative no longer dominates all other normative or ethical considerations,
- emergent: IS should adapt organically to meet social and political needs of organisations as they change;
- semantical: meaning and world-view are more important than structure;
- Hellenic: IT "delivers democracy through enlightenment" rather than satisfying the whims of those in power;
- constructivist, sense-making and socially-situated, especially in contrast to a positivist approach.

These are, of course, an interpretation put on Klein's approach by Hirschheim & Myers, but since they are people who had worked closely with Heinz, I am happy to work with this interpretation.

These principles or characteristics were a major advance during the 1980s and especially the 1990s, when the major formation of Heinz's thinking occurred and are arguably still in advance of much of today's thinking. Individually, each has been discussed by others but perhaps the uniqueness of Heinz Klein's contribution to IS is that he brought them together into a coherent approach and that he stimulated other scholars to take these issues more seriously and philosophically than they otherwise might have done (many of his major publications are shared with others).

However the situation of IS use *today* has expanded beyond the type known to Klein and his colleagues at the time they were formulating their approach. *Then*, most applications discussed were oriented to professional work in organisations, but *nowadays* there is also much IS use that is personal and global. Instead of reviewing theoretical discussion of IS use today, an example is drawn from everyday life to illustrate aspects of it throughout the paper. The following advertisement for Google Chrome appeared at Crewe Railway Station, UK on 4 January 2010:

> "12 qualifying goals watched 5 times on YouTube
> 1 speculative email to mates
> 3 responses received, fairly instantly
> 7 tabs opened searching for cheap flights
> 2 eyes opened in disbelief
> 600 pounds return to Capetown
> 1 half-second of doubt
> 4 airline tickets booked on Lastminute.com
> 3 hour group chat strategising how we're actually going to get into a game
> 94 minutes of pure excitement
> 28 tweets to share it".

Organisational and professional use continues to be important today, of course, but nowadays we also browse privately, collaboratively construct encyclopedias and film banks, tweet, discuss on blogs, socially network, play multiplayer games, enter virtual reality and so on. Is the Kleinian approach relevant to such IS use? I believe it is, but needs expansion and modification because the context in which it was forged was that of work life in organisations, rather than fun life at home or across the world.

It might be possible to address the difficulties that the original version of each Kleinian principle has with today's IS use, one by one, perhaps making reference to a variety of philosophers, but such an approach would be in danger of undermining the coherence of the Kleinian approach. Instead, this paper applies a single philosophy, that of Dooyeweerd, to all principles, and this allows all of their difficulties to address together.

This paper provides an outline of characteristics of the Kleinian approach, showing ways in which it might need expanding to cope with today's IS use, then a brief introduction to Dooyeweerd's philosophy, and finally a discussion of how it might enrich or expand the Kleinian approach.

This paper makes contributions in two directions, to the IS field and to Dooyeweerdian philosophy. The contribution to the IS field is to suggest how the Kleinian approach may be extended and enriched in a way that makes it more applicable to today's use as well as traditional organisational use, and more generally indicate how other extant approaches may be similarly enriched. The contribution to Dooyeweerdian philosophy is to demonstrate how it can engage with a system of extant thought that had very different origins, and show that:

- Dooyeweerd's philosophy can follow the ongoing story of IS in the world, in a direction that Heinz Klein and his colleagues started, but which goes further.
- Dooyeweerd's philosophy can affirm extant approaches and account for their strengths
- Dooyeweerd's philosophy can critique the root problems in extant approaches
- Dooyeweerd's philosophy can sensitively enrich extant approaches in a way that remains faithful to their original motivation and direction.

This might throw light on why Heinz Klein became interested in Dooyeweerd.

2. KLEINIAN PRINCIPLES IN TODAY'S CONTEXT

Heinz Klein was a pioneer and careful critical thinker at a time when the functionalist paradigm of IS was being challenged, and his activity was crucial to the effectiveness of this challenge. We discuss each of the characteristics in Hirschheim & Myers [2009], showing the value of each but also how each needs to be taken further today. Then we look at a characteristic not explicitly mentioned in Hirschheim & Myers [2009] and discuss assumptions underlying Klein's writing.

2.1 The Kleinian Approach is Post-functionalist

Functionalist approaches try to change behaviour and solve problems, and they do so from outside the relevant situation "by application of formal concepts through planned intervention with rationalistic tools and methods" [Hirschheim & Klein [1989, p.1210]. They do not take adequate account, however, that people interpret situations differently, of the organisational structures within which these changes occur, and that sometimes it is more important to to learn and communicate than to solve problems. Post-functionalist approaches take more account of these and thus may be seen as expanding the range of issues it is meaningful to consider to include these. This expansion involves all the other characteristics discussed below.

Today's IS use however requires further expansion to include such things as fun ("94 minutes of pure excitement") and aspirations (to fly to Capetown). Thus the Kleinian approach may be seen as establishing the need to expand spheres of meaning, but needing to expand wider still. Dooyeweerd provides the basis for doing so.

2.2 The kleinian Approach is Axiological

Axiological means that people's values are considered intrinsically important. Pre-Kleinian approaches tend to ignore all values except technical-economic ones. The Kleinian approach adds a concern for emancipation, which is defined quite widely as: "maximum freedom from unwarranted social domination, economic deprivation and other compulsions" [Hirschheim, Klein & Lyytinen 1995, p.167]. For IS researchers, "compulsions" include from self-delusion and "cooking the data" [p.127].

Today, however, a yet wider range of values and normativity has become relevant, such as "pure excitement" or booking flights to Capetown. Trying to reduce them all to emancipation, even widely defined, denatures them. To be able to be sensitive to the range of things deemed 'good' or 'bad' today, the Kleinian approach needs to expand yet further the types of normativity it recognises. This does not imply a set of rigid norms against which to measure such IS use but rather that we need a basis on which to address the question of diverse types of right and wrong in such use, beyond those of economics, technology and emancipation. Dooyeweerd provides a wide range of normativity.

2.3 Emergence

Too often, in the past, IS in organisations have become rigid and hindered fruitful changes - until the IS is replaced at great expense. Truex, Baskerville & Klein [1999] convey a vision of organisations and IS continually changing in harmony with each other. Such organisational 'emergence' can be stimulated by three 'levers': a shared view of reality is constructed in the organisation, change is driven by self-reference rather than external constraints, and change proceeds dialectically by conflicts between multiple versions of reality. The greater the difference between a reconstructed organisation and its previous version, the better. This does, of course, redefine the notion of IS maintenance, and user dissatisfaction is deemed more fruitful than user satisfaction.

Whether and how this Kleinian principle might be appropriate for today's IS use requires careful thought. The IS cannot be seen as a tool with which to facilitate (organisational) change, but rather as an environment within which certain lifestyles are possible - for example, watching goals, easy ticket-booking and online gaming. Today's IS users

would not find radical reconstruction of this information environment helpful but rely on its core remaining the same over a long period, even though new features (e.g. Facebook applications) continually arrive. In addition, lifestyles enabled by this informational environment impinge on the real, global environment as, for example, climate change (see below).

The Kleinian approach, while encouraging change, needs a basis for discussing what is changed and what remains the same. The Kleinian 'levers', especially self-reference, prove no longer appropriate and must be reconsidered. The reason Truex, Baskerville & Klein stress self-reference seems to be a concern to overcome conservatism and unwarranted caution in face of external pressures. These might be overcome not only by self-reference but just as effectively by courage inspired by 'higher' norms, such as responsibility for the future. Dooyeweerd provides the basis for recognising this.

2.4 Semantical

A Kleinian approach concerns itself not just with the structure of data or communications, but with its meaning and underlying world-view [Truex, Baskerville & Klein, 1999]. Basden & Klein [2008] discuss several of the latter, including one based on Dooyeweerd. Hirschheim, Klein & Lyytinen [1995] draw on Wittgenstein and Gadamer to argue that the relationship between text and its meaning is not simple but takes the form of a 'language game' as an hermeneutic cycle of interpretation. Gadamer explained how, when archaeologists decipher an ancient text, their understanding of each part depends on how they understand the whole (including other texts and artefacts) which is in turn built up from understanding the parts. We may see this occurring in IS use when, for example, a manager reads a report, ponders what it might mean, searches for other information and discusses it with colleagues. They take into account not only the semantic meaning of the text but also the illocutionary meaning (the pragmatic reason the author wrote it). Following Gadamer, they suggest that all IS use is like a text because all involves interpreting meaning-in-use.

Though an important advance over traditional approaches, the Kleinian approach conflates several types of meaning that need to be conceptually distinguished today. Suppose the "speculative email to mates" was a question like "Hey, who wants to come to Capetown with me?" plus some supporting information. At least four types of meaning can be distinguished:

- Content-meaning: asking who wanted to come.
- Illocutionary meaning: to persuade others to come.
- Meaning in their lives: to have fun.
- Broader meaning: Was the trip itself really meaningful, or was it just a waste of time and money compared with, for example, helping others?

In the original Kleinian context of organisational IS use, the fourth rarely surfaces and the second and third often overlap, but in today's IS use they need to be differentiated. Dooyeweerd provides the deeper understanding of meaning required.

2.5 Hellenic

'Hellenic' refers to "democracy through enlightenment" [Hirschheim & Myers 2009]. In both IS development and IS use all those affected should have equal rights. This is to be achieved, not by control (such as by managers or workers) [Hirschheim, Klein & Lyytinen, 1995, p.38-40] but by open discourse based on Habermas' [1984] *Theory of Communicative Action*. Since dialogue can be distorted by lack of knowledge and by internal and external compulsions, Habermas identified four conditions for statements to be valid: intelligibility, sincerity, veracity and social and ethical appropriateness. The Kleinian vision is that IS in use should facilitate open discourse among all stakeholders. In truly open, democratic discourse all participants have equal opportunity to raise issues, to take all kinds of linguistic action such as promising or asking for promises, to express concerns and feelings, and to challenge validity claims [Hirschheim & Klein, 1994].

The vision exhibits several difficulties, however, not in the aim but in its dependence on Habermasian discourse. The Habermasian view of language use is too tied to a rationality that, while perhaps dominant in organisational decision-making and mutual understanding, is not so in everyday interactions like watching goals or expressing excitement. Also, Midgley [2000] criticises it on the grounds that many who will be affected (in the case of climate change: future generations, animals, habitats) have no way of participating in Habermasian discourse. Moreover, to achieve the good (whether emancipation or wider) requires action and not just dialogue.

In order to affirm this Kleinian principle but expand it for today's use, perhaps "democracy" should be replaced by "respect for all stakeholders" and "through enlightenment" by "all kinds of linguistic and extra-linguistic activity". Dooyeweerd provides a foundation for attempting this.

2.6 The Style of Kleinian IS Research

IS research informed by a Kleinian perspective is constructivist rather than realist, aimed at sense-making rather than theorem-proving, socially situated rather than centred on the individual, idiographic (concerned with the concrete and unique rather than with universals) and often undertaken by means of 'consequentialist narrative' rather than propositional answers [Hirschheim & Myers, 2009]. These characteristics are expounded and qualified in Klein & Myers [1999], and several of them relate to the (social) constructivist characteristic.

The central principle in Klein & Myers [1999] is that of the hermeneutic circle, mentioned earlier, but here it is more appropriate. The six other principles express this in practical terms, to take account of socio-historical background, welcome multiple interpretations, recognise and question biases and assumptions of both researchers and researched alike, define the proper place for abstraction and theorizing, and see theory as in dialogue with findings.

Again, this is highly preferable to pre-Kleinian approaches that were realist in orientation and tended to overlook cultural interpretations and researcher bias, but, again, it needs modification to research today's IS use. The problem is that, in this age of global IS use (such as collaboratively constructed encyclopedias or social virtual reality) social construction gives no firm basis for cross-cultural understanding. In discussing how shared background knowledge (lifeworld) in a cultural group is constructed by that group, Berger & Luckmann [1967] fail to recognise and discuss that there is no guarantee that it will overlap with that of another distant group. The Kleinian approach is appropriate for situations in which a common lifeworld has been intersubjectively built up, such as in organisations, but where this cannot be relied upon, it needs to be augmented with an account of how understanding across widely different cultures is possible. Dooyeweerd provides this.

2.7 Further Characteristic of the Kleinian Approach: Philosophically Grounded

Klein's writings over the years exhibit a characteristic not listed in Hirschheim & Myers [2009]: the Kleinian approach is philosophically grounded. In a paper published posthumously Klein [2009] stressed that IS research and practice should be "philosophically aware" but he did not just cite philosophers as some do, but worked out how his approach manifested these turns; for example Habermas [Lyytinen & Klein 1985]. He understood not just one philosophy but several, especially the phenomenological, hermeneutic, linguistic and critical 'turns', and treated all the philosophers he understood with critical respect, rather than being a disciple of one.

Where I believe the Kleinian approach deserves expansion for today is in the particular range of philosophies that have informed it so far. The four 'turns' may be seen as responses to problems left by Kantian philosophy, which drives epistemology, ontology, normativity and meaning into distinct compartments, so distorting our ability to address everyday experience, such as of IS use. They did not fully overcome this problem. Should we, then, turn to pre-Kantian philosophy (Greek, Scholastic, rationalistic or empiricistic) or anti-Kantian philosophy (Hegel)? That would be unwise because doing so would undermine some of the principles of the Kleinian approach, rather than enriching them. Dooyeweerd's philosophy, by contrast, recognises the issues Kant raised but addresses them in a way that is more friendly to everyday life.

Taking a philosophical stance, we find three assumptions of the Kleinian approach about the nature of the world, how humans interact with the world, and the nature of normativity, all of which need to be questioned if the Kleinian approach is to address today's IS use. Dooyeweerd's philosophy provides such an alternative.

2.8 Assumption of the Kleinian Approach: The World as Organisation

The current Kleinian approach presupposes a work-life organisational context for IS. Because it is a presupposition, it is often not explicitly stated or argued, but one can detect it in the phraseology used. For example, in Hirschheim, Klein & Lyytinen [1995], in an application chapter one might expect an organisational context, but in the chapter that examines IS from the point of view of four paradigms, one might expect more generalised discussion. This chapter is permeated, however, with organisational work allusions in all four paradigms, even the neohumanist paradigm that they believe to be the most progressive. For example, in discussing 'social interaction in neohumanism', they say [p.83, italics added] "In order to maintain loyalty and commitment *in the organization* (as well as in other human dealings) social interaction is crucial. Hence *both work (for material reproduction) and* social interaction for socio-cultural reproduction of community feelings and beliefs *(the interpretative basis for work)* are key imperatives of *organizational* life." Today the use of IS is by no means restricted to organisations but has both personal and global implications that cannot be seen in organisational terms; if the italicised phrases were removed then that text would apply more generally. Dooyeweerd recognises organisational reality but only as one among many realities.

2.9 Assumption of the Kleinian Approach: Normativity as Local

Earlier it was argued that the Kleinian approach and today's IS use widen the range of spheres of normativity that should be taken into account. The global nature of today's IS use not only widens the spheres of normativity but points to a different type of normativity, which relate to responsibility for issues like climate change and the global economy, and which touch on the lifestyles of IS users. For example, today's IS makes impromptu booking of air flights easy, so it is indulged in by more and more people, so climate change emissions increase rather than reduce. Is it not irresponsible for IS to make this easier, however attractive this might be in both functionalist and neohumanist terms? IS use today brings with it responsibilities largely unknown when the Kleinian approach was being developed.

Global is not inter-organisational, in which organisations are still recognised as the main entity, nor even a super-organisation of which other organisations are part, but trans-organisational, an *Umwelt* in which organisations and individuals as such function, and which is itself constituted by that functioning. The Internet is one such *Umwelt*. *Umwelten* cannot be treated as organisations. Global responsibility acts as an normative *Umwelt*, within which organisational norms operate. As alluded to above, no longer can emergence be dictated by "self-reference" [Truex, Baskerville & Klein 1999] but it must be governed by global normativity. Dooyeweerd can provide this.

2.10 Assumption of the Kleinian Approach: Relationship with World as Distal

Both in likening IS use to a Gadamerian archaeologist deciphering ancient texts, and in its advocacy of Habermasian discourse as a way to ensure the interests of all stakeholders are respected, the Kleinian approach presupposes what Polanyi [1967] calls a distal relationship between users/developers and their world (the IS, other users, etc.). This might be appropriate in organisational situations, such as the manager pondering the meaning of the report (a distal relationship with the IS as text), formulating a strategy which s/he then discusses with others by open discourse (distal relationship between users of information) to arrive at mutual understanding. But IS use today is more proximal (Polanyi's term) in both ways. Apart from the "half second of doubt" there is no Gadamerian interpretation of the ticket prices, let alone of goals scored, but an immediate understanding of what is meant. In the tweets there no critique of validity claims but a proximal sharing of excitement. Even the 3-hour chat, though likely to have elements of Habermasian discourse, is unlikely to be wholly of this kind because visionary or aesthetic appeals ("Yes we can!") are frequent in everyday discourse like this. The Kleinian approach must accommodate proximal engagement with meaning, both in the relationship with the IS and the life of users without losing its facility with distal critique.

How to achieve this is not immediately apparent using conventional philosophy. According to Winograd & Flores [1986] the distal relationship is based on the Cartesian subject-object relationship, and they develop the proximal theme by reference to Heidegger's existential notion of being-in-the-world, in which the difference between subject and object is dissolved. Might the Kleinian approach benefit from this? Spaul [1997] argues that work based on Heidegger loses its critical edge because it provides no basis on which the thinker can critique the world, including the social milieu, that forms it, and he advocates re-introducing Cartesian subject-object alongside Heidegger, but it is not clear that this is feasible. Dooyeweerd, however, redefines the subject-object relationship of everyday, pre-theoretical experience as proximal engagement rather than distal, making Heideggerian dissolution of it unnecessary, and differentiates this from the theoretical *Gegenstand* relationship (which Descartes' version actually is), so that both engagement and critique are possible.

2.11 Towards an Enriched Kleinian Approach

Table 3 later summarises the above discussion. We could perhaps enrich the Kleinian approach element by element, but doing so would go against the principle of philosophical grounding. To philosophically ground the required further shifts using conventional philosophy is not easy, and would require importing a host of philosophical thinkers, such as Heidegger to support proximality, McIntyre to support axiology and global normativity, Giddens to underpin *Umwelt*, and so on. It is not clear that this would remain coherent. The Kleinian approach spans the philosophical concerns of ontology, epistemology, meaning, normativity and methodology, which Kant has driven apart, so any philosophy that presupposes Kant (see Klein [2004] for summary) is unlikely to span all these. Herman Dooyeweerd (1894-1977), however, did not presuppose Kant and this might explain why Heinz Klein showed interest in him.

3. DOOYEWEERD'S PHILOSOPHY

Dooyeweerd [1955/1984] did not utterly reject Kant, but argued that he had not been critical enough. Making an immanent critique of thinkers (Greek, early Christian, Scholastic, Reformation, Renaissance, Enlightenment, to his day including phenomenology and Heidegger), Dooyeweerd concluded that theoretical thought has been driven mainly by 'ground-motives' that presuppose absolute antithesis between:

- form versus matter (Greek ground-motive)
- nature versus grace (Scholastic ground-motive)
- nature versus freedom (Humanistic ground-motive)

with some input from the non-dualistic Biblical ground-motive of creation-fall-redemption. We may see ground-motives as long-term societal constructions about the basic nature of reality which, at a very deep level, determine philosophical discourse about being, knowing, rationality, intuition, normativity and methodology. Dooyeweerd argued that dualistic ones impair our ability to understand the structure of reality, especially as experienced pre-theoretically, and theoretical thought driven by them swings dialectically between their poles. Kant's work is arguably the most comprehensive demonstration of the nature-freedom ground-motive, splitting apart being, knowing and normativity. Today, interpretivism versus positivism may be seen as aligned with freedom and nature respectively, and critical social theory as trying unsuccessfully to bridge them [Eriksson, 2003], in that emancipation is defined as freedom from unwarranted constrains, and yet emancipation itself is a norm that constrains, a paradox noticed by Wilson [1997].

Dooyeweerd's survey implies that theoretical thought is never neutral but driven by ground-motives. Using transcendental critique, Dooyeweerd argued this is not only historically so but inescapable. So Dooyeweerd felt free to begin with the non-dualistic ground-motive, creation-fall-redemption, and work out its philosophical implications in the hope that it might overcome some of the problems we discussed earlier. He took everyday, pre-theoretical experience as a starting point and as philosophical data to develop a philosophy that covers ontology, epistemology, meaning and normativity, not neglecting the social aspects. It has already been used to enrich Checkland's Soft Systems Methodology [Bergvall-Kåreborn & Grahn 1996; Bergvall-Kåreborn 2001; Basden & Wood-Harper 2006], and has been applied to IS in other ways [for example: de Raadt 1989; Winfield, Basden & Cresswell 1996; Eriksson

2001, 2003; Basden & Burke 2004, Black & Harman 2006, Basden 2008a, Basden & Klein 2008]. The following is a very brief summary of some Dooyeweerdian ideas that will be employed to enrich the Kleinian approach.

3.1 Diversity and Coherence

According to Dooyeweerd, the diversity and coherence of meaning we experience pre-theoretically is no illusion, but points to distinct yet related spheres of meaning that transcend us. Our ability to see different aspects of situations and discuss them (stressed in interpretivist approaches) is made possible not by the autonomous human ego but because we live and exist within these spheres of meaning.

We can distinguish ways of being meaningful ('aspects') by analytical thought and other means. But, because all means function within the spheres, none can ever be absolute, so no suite of aspects can be final [Dooyeweerd, 1984/1955, Volume II, p.556]. Table 1 shows Dooyeweerd's suite. Each aspect has a kernel meaning (column 2), which is illustrated in column 3 by reference to the earlier Google advert. Column 4 indicates the normativity inherent in the aspect.

Table 1. Dooyeweerd's Aspects

Aspect	Kernel Meaning	Example	Normativity
Quantitative	quantity, amount	12,1,3,7,2,600, etc.	-
Spatial	spreading-out	Distance to Capetown	-
Kinematic	movement	Return to Capetown	-
Physical	energy + mass	(Implied: ball propelled into goal)	-
Biotic / Organic	life functions, organs		Health v. illness
Psychic / Sensitive	sense, response, emotion	Eyes, Excitement	Sensitivity v. insensitivity
Analytical	distinguishing	Tabs opened, Doubt	Clarity v. confusion
Formative	deliberate forming; construction, achievement, history, technology, creativity	Goals, Searching, Strategising	Achievement v. laziness
Lingual	symbolic signification	Email, Responses, Chat, Tweets	Understanding v. deceit
Social	social interaction, relationships, roles, organisations	Mates, Group, Sharing excitement, Airline	Respect v. disrespect
Economic	frugal use of resources	Cheap, 600 pounds	Frugality v. waste
Aesthetic	harmony, interest, fun, style	Fun, Purity of excitement	Fun and harmony v. boredom or mess
Juridical	what is due; appropriateness, responsibilities; policy, government	Tickets (imply rights)	Responsibility and due v. irresponsibility or injustice
Ethical	self-giving love	(A rather selfish attitude?)	Generosity v. meanness or selfishness
Pistic / faith	believing, vision, aspiration, commitment, creed	"1 half-second of doubt" about whether worthwhile (Self-identity of users)	Faithfulness, commitment, worth v. disloyalty, cowardice

Each aspect may be seen as having a distinct role in enabling the cosmos to work well in a coherent, joyful diversity

[Basden, 2008a]. Aspects are irreducible to each other, but there are inter-aspect relationships of dependency and analogy that mean they cohere and work in harmony.

3.2 The World: Founded in Meaning

Whereas conventional Western philosophy over the past 2,500 years has assumed the world 'is' or 'occurs' and that meaning arises from this, the question "What's the meaning of life?" suggests intuition of a type of meaning that transcends us. Rather than explaining it away (because of the Freedom-pole dogma that nothing can transcend us) Dooyeweerd accepted the possibility of it at face value, along with other types of meaning. This led Dooyeweerd to the insight that meaning is a fundamental ground of all:

> "*Meaning* is the *being* of all that has been *created* and the nature even of our selfhood." [Dooyeweerd, 1984/1955, Volume I, p.4, his italics]

All things exist and events occur by virtue of, and by reference to, the aspects. For example, a business is necessarily a social thing (organisation) and an economic thing, and has no existence, *qua* business, without these. YouTube, in the Google example, is a business but exists and functions, *qua* YouTube, by information, which is of the lingual aspect. That Gadamer and Derrida argue that all life involves interpretation might indicate growing recognition of something similar, but viewed through the lens of the Nature-Freedom ground-motive.

What differentiates one type of thing from another is a *structure of individuality*, which is a profile showing in what way each aspect is important in the thing. Clarifying Dooyeweerd, Clouser [2005] defines the *qualifying* aspect as governing the internal organisation and/or development of the thing (social for organisation), and the *leading* aspect as governing the plan or purpose that guided its coming-into-being, and often determines the sub-type (economic for business). Other aspects are important in other ways. In addition, aspects normatively guide the thing's being-in-the-world (see below). An *Umwelt*, such as a forest or society, differs from a thing in that it does not have a structure of individuality, but is rather a correlation of individuals, so must be treated differently.

Things change. A book [Dooyeweerd 1955/1984, III, p.3] has marks in the margins, a torn cover, but it is still the same book. This is because it still fulfils its qualifying lingual purpose, even though it has changed in the physical aspect. A thing can change while staying the same because the change is in an aspect that is not the qualifying one.

3.3 Normativity: Varied, Coherent, Transcendent Aspectual Law

In human life, meaning implies normativity: if something is meaningful, it is important and therefore to be sought (good), with a negative possibility (column 4 in Table 1). Spheres of meaning are therefore also spheres of law. The laws of one aspect cannot be reduced to those of others. We can group them as follows:

- Quantitative, spatial,kinematic are mathematical aspects.
- Physical, biotic, psychic are pre-human aspects, governing the functioning of inanimates, plants and animals.
- Analytic, formative, lingual aspects govern individual human functioning.
- Social, economic, aesthetic aspects are social, important in organisational life.
- Juridical, ethical, pistic aspects are societal and global.

The first four aspects, at least, are largely determinative while analytic to pistic allow latitude.

To Dooyeweerd, temporal reality has two sides: *law side* and *subject (or fact) side*. The spheres of meaning-and-law are the law side, and the fact side is what actually happens and exists in time (non-human, human, social, virtual), subject to aspectual law. For example, the norm of the ethical aspect that urges us towards generosity rather than selfishness is the law side, but concrete acts of generosity or the actual selfish attitude I take are fact side. For example, the biotic norm of life is law side, but actual plants and their actual lives are fact side. Aspectual law-and-meaning transcends humanity. This might be reflected in the background norms that pertain across different cultures, such as

humour, courage and generosity (norms of aesthetic, faith and ethical aspects). This might provide a basis for a transcendent, global normativity. Aspectual law must not be confused with socially constructed norms or commands, because the latter are concrete, inhabiting the fact side rather than law side. Often, socially constructed norms express some aspectual norm in a particular cultural situation, for example the speculative emails to mates expresses the friendliness that is part of the norm of the social aspect.

Though irreducible to each other, Dooyeweerd believed they work together ("simultaneous realization of norms" [Van der Kooy, 1974]). This implies that, for full benefit in life, we should function well in all spheres. Elevating one sphere (e.g. economic) at the expense of others (e.g. juridical) results eventually in failure.

3.4 Our Relationship with World: Law, Subject and Object

Our functioning as active agents (subjects) is constituted in being responsively subject to aspectual law. For example, both writer and reader are lingual subjects. All human activity involves all aspects ('multi-aspectual functioning'); see 'Example' column in Table 1. Objects are 'passively' involved in aspectual subject-functioning, for example words and sentences are lingual objects. To Dooyeweerd, the subject-object relationship involves close engagement, such as when we use words without thinking much about them. This account is preferable to Descartes' because it gives priority to proximal engagement, and to Heidegger's because it retains the notion of subject and object as in everyday experience, and to both, because it allows subject-subject as well as subject-object relationships, and both in multi-aspectual form. Cultural activity is a complex of many multi-aspectual subject-subject and subject-object relationships.

No aspectual functioning is absolute, in the sense of depending on itself alone, or able to give us access to absolutes. For example, analytical functioning can never bring absolute clarity nor lead us to absolute truth; lingual functioning can never absolutely express all we mean.

Our knowing, intuiting, thinking and theorizing are discussed by Dooyeweerd as aspectual functioning. Since this is non-absolute, Dooyeweerd rejected the assumption, long held by Western philosophy, that theoretical thought is the route to true knowledge.

Pre-theoretical knowing, especially of the subject side (concrete things, events, concepts, etc.) involves engagement (as subjects) with aspects of things (as objects of our knowing). This is multi-aspectual knowing. For example, we are said to know a tool when we not only understand its parts (analytic knowing) and recognise it by sight (sensory knowing), but when we can handle it with ease (organic knowing) and know how to use it to carry out tasks (formative) efficiently (economic) and with style (aesthetic). Knowing a business, or other human activity system, involves even more aspects. Such knowing is often intuitive.

Knowledge of the subject side can generate anecdotes but, as Klein & Myers [1999] stress, IS research engages with more general (universal) knowledge on which it is reasonable to rely to apply across different concrete situations. This involves knowledge of the law side, which cannot be engaged with in a subject-object relationship. Conventional philosophy and science offers only one way of knowing the law side: abstraction of generalities from the subject side; Dooyeweerd offers another, more fundamental one: law-side intuition.

He argued that the kernel meanings of aspects cannot be grasped by theoretical thought but may be grasped by intuition. For example, the juridical notion of due or justice is familiar and agreeable to us (though we disagree on what is due to whom) but we can never define it. This deep law-side intuition does not generate theories but it does allow foundational, transcultural understanding. Basden & Klein [2008] differentiate law-side from subject-side intuition, the latter being malleable by culture.

To generate theories requires abstracting data from the fact side and generalising them. This can, at best, provide a guess at the law, a distal kind of knowledge that Dooyeweerd called *Gegenstand*. It also focuses on single aspects. Dooyeweerd's extensive discussion of this is explained clearly in Clouser [2005]. We find *Gegenstand* relationships not only in research but also when discussing things critically, as in Habermasian critique of validity claims.

This reverses the traditional view that sees theoretical thought and discourse as superior. Pre-theoretical thought and discourse (engaged and multi-aspectual) is in fact more fruitful as a way to knowledge and discourse, while theoretical (*Gegenstand*) versions (distal, uni-aspectual) can be more precise. To Dooyeweerd *Gegenstand* functioning is not removed from everyday life but is itself multi-aspectual activity within it, carried out by human being who theorise or critique using their pre-theoretical intuitions. In this way, distal and proximal become integrated.

4. REALIZATION OF KLEINIAN PRINCIPLES BY DOOYEWEERDIAN ENRICHMENT

Here we discuss how each characteristic of a Kleinian approach may be enriched by portions of Dooyeweerd's thought. Table 3 below summarises this.

4.1 Post-functionalist

The Dooyeweerdian approach sees IS use as multi-aspectual human functioning, involving individual, organisational and global aspects, each aspect being a sphere of meaning (way of being meaningful) [Basden 2008a]. In the functionalist view IS use tends to be seen as limited to the formative and economic aspects and though other aspects are present in practice they are given little attention. The original Kleinian view widens this to take in the lingual and social aspects (mutual understanding, organisational structures) and the juridical if we add emancipation. But the Google example of today's IS use strongly exhibits not only these aspects, but also the aesthetic aspect (fun) and perhaps the faith aspect as self-identity, widening the range of aspects further. Table 2 shows these major aspects of each.

Table 2. Expansion of spheres of meaning

Functionalist	Original Kleinian	Today's IS use	Enriched Kleinian
Formative		Formative	Formative
	Lingual	Lingual	Lingual
	Social	Social	Social
Economic		Economic	Economic
		Aesthetic	Aesthetic
	(Emancipation)		Juridical
			Ethical
	(Identity)		Faith

It is characteristic of everyday life, such as in the Google example, that more of the aspects are equally important, but of professional life that aspects of specialisms predominate. Since there is a growing realisation of the importance of all aspects to the success of professional as well as everyday life ('interdisciplinarity'), it is not inconceivable that, in time, all aspects, including ethical and faith, will be as important in most IS use. Dooyeweerd invites an 'enriched Kleinian' approach to recognise all the aspects. Such an enriched Kleinian approach would be able to address IS use not only in the original organisational context and in today's Internet-fun context, but also in tomorrow's, if IS use does find all aspects important.

4.2 Axiological

A similar suggestion can be made for the axiological characteristic: widen the aspects seen as spheres of law, from formative-economic (functionalist) norms, through juridical and social (organisational Kleinian) to aesthetic (today's IS use), to all aspectual norms (enriched Kleinian). Moreover, it would seek simultaneous realization of aspectual norms.

This sounds unrealistic - until it is remembered that most aspects offer considerable latitude in how their laws are actualised, and the aspects should be seen, not as prescriptive categories but as a set of 'spaces' within which we can discuss the normative effects of IS use in all their diversity. Aspectual norms might demand radical overthrow of current socially-constructed ones.

4.3 Emergence

If the Kleinian concern for emergence may be generalised, for today, to courage to make good, appropriate, sometimes radical changes, then we need a way of discussing what it is appropriate to change and what not to change, in relation both to the organisation or the Internet facilities, and to global responsibility.

Dooyeweerd's notion of individuality structures offers the original Kleinian approach a way to distinguish types of organisation (all socially qualified), by their leading aspect (economic for business, juridical for government organisation). Any change that enhances functioning in the qualifying and leading aspects is appropriate, but change that distorts or supplants these should be resisted (as when a government organisation prioritises money-making). Likewise, it offers a basis for widening this for today's IS use: identify the qualifying aspect (collaborative Internet software is lingually and socially qualified) and the leading aspect that defines its subtype: maybe aesthetic for social networking (fun), and juridical for collaborative encyclopedias (doing justice to the world's knowledge). Finally, we can differentiate a thing's self-identity, defined by leading and qualifying aspects, from the way it functions in the world, which is governed by the normativity of all aspects. Global responsibility comes under the latter. Doing this encourages due consideration to both, without one obliterating the other.

4.4 Semantical

Dooyeweerd's exploration of meaning can underpin the Kleinian concern with meaning, but can also distinguish the different types. Lingual functioning, in which people express selected meaning in writing, speech, graphics, etc., is qualified by the lingual aspect but it is led by the aspect of whatever illocutionary purpose its originator had (e.g. promise involves ethical self-giving). The Gadamerian-Kleinian conflation of text with life can be reversed without denying interpretation by recognising that we live within all spheres of meaning which includes, but is not reducible to, lingual functioning that is hermeneutic interpretation. The broader meaningfulness (whether 94 minutes of pure excitement are ultimately worthwhile) may be discussed in relation to the transcendental meaning that is the aspectual kernels themselves.

4.5 Hellenic

The Kleinian approach aims to democratise and emancipate discourse and IS use. Whether this is among IS developers, users, stakeholders, Dooyeweerd would see it as qualified by the lingual aspect. We may differentiate Kleinian from today's IS use by their different leading aspect: analytic for organisational decision-making, and social, aesthetic or even pistic (visional) for much of today's IS use. We may explain why Habermasian discourse cannot describe today's IS use by noting critique involves a *Gegenstand* relationship (distal, uni-aspectual) whereas much IS use today involves subject-object and subject-subject relationships (proximal, multi-aspectual). A Kleinian approach expanded to accommodate the latter as well as the former should be able to address IS use encountered today, without abandoning the original insights rooted in Habermas.

However, if the underlying aim of the 'Hellenic' characteristic is to ensure all stakeholders are respected then perhaps we should direct not only the lingual and analytic functioning are important, but all aspectual functioning. For example, with special reference to the Google example:

- The juridical aspect directs us to give all stakeholders their due, not only the ticket-purchasers and companies, but also all those who will be affected by their travel to Capetown.

The ethical aspect urges us to take pains to consider and involve all stakeholders, and more pains to discover those often overlooked, such as those affected by increased climate change emissions.
- The pistic aspect urges us to maintain the dignity of all stakeholders, including non-human and future stakeholders - so not to easily dismiss the concern for climate change evinced in the above examples!

Such activity will yield a rich diversity of issues, which can be researched and discussed when design IS like that used by LastMinute.com.

4.6 Constructivist Style of Kleinian Research

The Kleinian shift from realism to social constructivism brings problems of how transcultural understanding is possible. Klein [2004] not only rejected naive realism but also criticised critical realism, so what is the answer?

Dooyeweerd would see the antithesis between realism and social constructivism as a false artifact of the nature-freedom ground-motive, and offer a different kind of solution. Social construction as currently understood [Berger & Luckmann, 1967] arose from the Kantian expression of the nature-freedom ground-motive. Dooyeweerd believed that the fact-side reality is inescapably linked to humanity, and all that exists in the post-analytic aspects is constructed by human individual and social functioning, but law-side reality is not socially constructed (though our *understanding of it* might be).

To Dooyeweerd, we do have access to the world, but more through intuition than theoretical thought. In particular, intuitive grasp of aspectual meaning and normativity transcends all cultures, which helps address the problem of transcultural understanding. Whereas understanding of the fact-side events and structures might differ widely (and be socially constructed), the common intuition of aspectual kernels can be capitalised upon. For example, both the comfortably-off visitors to Capetown and its poorest inhabitants understand fun and generosity (kernel meanings of aesthetic and ethical aspects), but what they deem fun and what they consider generosity (the expression of these aspects in their situations) will differ considerably. Basden & Klein [2008] explored this possibility in the context of data and natural language processing; Heinz Klein was beginning to find Dooyeweerdian ideas interesting.

5. CONCLUSION

This paper might make three main contributions: enriching the Kleinian approach, demonstrating how such enrichment might be made, and perhaps making a modest contribution to the philosophy of Dooyeweerd.

5.1 Enriching and Expanding the Kleinian Approach

This paper has argued that the principles of the Kleinian approach are important but need modification if they are to be applied to today's IS use, and shown how they can be modified using Dooyeweerd's philosophy. Table 3 summarises this, showing for each Kleinian principle, the shift that Klein contributed in the thinking of IS in the organisational context, the further shift that might be required if the Kleinian approach is to be applied to other contexts found today, and which portions of Dooyeweerd's philosophy are useful for making this further shift. Note that the further shift does not negate the original Kleinian one, but merely takes a few steps further in the direction originally taken by Klein.

Table 3. Enriching Kleinian Principles using Dooyeweerd

Characteristic or Assumption	Original Kleinian shift	Further shift for today	Relevant Dooyeweerdian thought
Post-functionalist	From problem-solving to mutual understanding in organisations	... to diverse ways in which IS is meaningful in human life	Aspects as spheres of meaning

Axiological	From technical-economic imperative to emancipatory normativity	... to diverse spheres of normativity	Aspects as spheres of law
Emergent	From rigid IS and cautious attitude inhibiting organisational change, to co-emergence of IS and organisation, driven by self-reference and conflict	... to courageous choosing of changes that retain core experience, and which are appropriate and responsible.	1. Structures of individuality 2. Aspectual normativity as 'higher good' that can inspire us
Semantical	From concern with structure of data to concern with meaning, especially in light of worldviews and the hermeneutic circle	... to distinguishing four distinct types of meaning.	1. Exploration of meaning 2. Understanding what the lingual aspect offers us
Hellenic	From technical-economic effectiveness through top-down control, to "Democracy through enlightenment" through open discourse	... to respect for all stakeholders through all valid linguistic and extra-linguistic means.	1. Lingual subject-object, subject-subject and *Gegenstand* relationships 2. No aspectual functioning absolute. 3. Law side indicates what respect and validity are. 4. Juridical, ethical, pistic functioning.
Style of research	From naive realist to constructivist, socially-situated, critical sense-making	... to a basis for transcultural understanding	1. Understanding nature-freedom ground-motive 2. Intuitive grasp of aspectual meaning
Organisational Assumption	From individual to organisational and social	... to global-personal and wider responsibility.	1. Transcendental normativity rooted in aspects 2. Human beings as responsible, responsive agents 3. The nature of *Umwelt*
Local Normativity Assumption	From individual to organisational and social	... to global normativity	Transcendental normativity rooted in aspects
Distal Assumption	Distal relationship between IS users and world	... to proximal relationships that allow critique	1. Dooyeweerdian subject-object relationship as engagement 2. Critique as *Gegenstand*

5.2 Demonstration of Enriching Existing Approach

The following steps have been taken to effect this enrichment:

- Obtain informed opinion on approach's main characteristics.
- Consider whether these are appropriate for today.
- Try to disclose the motivating aim or insight of each characteristic.

- Propose new version based on this.
- Find characteristics that had been assumed but not articulated.
- Expose and examine underlying assumptions.
- Recognise the root of problems in the nature-freedom ground-motive.
- Transplant into the different ground-motive of Dooyeweerdian thought, by applying his ideas as appropriate.

This exercise might generalise to enriching other approaches, and perhaps to employing other philosophies. To what extent this is possible requires further work, but Basden [2008a] discusses some pitfalls of this and notes some of the special characteristics of Dooyeweerdian philosophy that make such exercises possible.

5.3 Contribution to Dooyeweerd's Philosophy

Dooyeweerd [1984/1955, Volume I, p.vii] stressed that his philosophy should be applied, not just discussed among philosophers. There are several ways of doing so for IS. One, exhibited in Basden [2008a], is to use Dooyeweerd's philosophy to formulate frameworks for understanding fields in IS. Another, exemplified in Bergvall-Kåreborn [2001] and Eriksson [2003], is to apply portions of Dooyeweerd's thought to specific issues in IS, such as aspects and ground-motives respectively. A third way is taken in this paper: to employ a wider range of Dooyeweerd's thought to enrich and expand a whole approach, the Kleinian approach to IS. As such, this paper could act as a summary of how Dooyeweerd as a whole can engage with extant debate in IS. Four main capabilities of Dooyeweerd's philosophy have been demonstrated.

First, Dooyeweerd's philosophy can follow the ongoing story of IS in the world, going further in the direction that Heinz Klein and his colleagues started, rather than striking off in a completely different direction. Starting from the narrow view of functionalism, Klein widened this to consider other aspects and Dooyeweerd, who explored what aspects there might be, can widen this further.

Second, Dooyeweerd's philosophy can affirm extant approaches and account for their strengths. Klein's post-functionalism is affirmed by the the notion of spheres of meaning. His axiological stance is affirmed by the normativity of aspects. His semantic stance is affirmed by Dooyeweerd's emphasis on meaning. His emphasis that IS must co-emerge with organisations is affirmed by the importance Dooyeweerd placed on human functioning.

Third, Dooyeweerd's philosophy can expose the root problems in extant approaches. Dooyeweerd held that Kant's philosophy was the epitome of the nature-freedom ground-motive, and since Klein adhered to this, this prevented the original Kleinian approach developing as far as it might.

Fourth, Dooyeweerd's philosophy can sensitively enrich extant approaches in a way that remains faithful to their original motivation and direction. Table 3 shows the various portions of Dooyeweerd's thought by which the Kleinian approach is freed from its nature-freedom constraints and enabled to address today's multi-aspectual pre-theoretical IS use.

It should be noted that the author has interpreted some of Dooyeweerd's ideas in ways that might contribute to Dooyeweerdian discourse. Three are of particular note. (1) The ideas about pre-theoretical and theoretical understanding of the law-side have been brought closer together than they are in Dooyeweerd's writings. The implication of this for transcultural understanding is from this author, as is the interpretation of knowing the tool. (2) Dooyeweerd has been criticised for omitting discussion of democracy [Chaplin 2007]. Application to it here has relied on inferences from various portions of Dooyeweerd; the Dooyeweerdian community should take this further. (3) Though Dooyeweerd rejected positivism, the notion of interpretive and critical research as practised in IS was unknown to him; how his thought relates to these deserves deeper exploration. This might, in turn, throw fresh light onto IS research.

It is hoped that this demonstration will stimulate other Dooyeweerdian scholars to seek to apply Dooyeweerd's thought in their own fields in similar ways. What the above has demonstrated is that Dooyeweerdian thought need not be antithetical to extant thought, but can enrich it. Other examples of such enrichment are found in Basden [2008b].

5.4 Limitations and Questions

The treatment has necessarily been brief and there are many gaps to fill. Filling these gaps requires further research, especially into the validity and veracity of some of the links made between Kleinian and Dooyeweerdian thought.

Are the two approaches commensurable? Klein & Myers [1999, p.75] say "interpretive research ... is highly suspicious of any claim that human affairs are governed by natural laws that are culturally independent", but the approach proposed here would seem to depend on culturally-independent laws as pertaining to human affairs. First, we should note that it is only "suspicious", and Klein & Myers continue "... this is not the whole story", devoting a whole principle to laws of human affairs. In their text, "natural laws" has connotations of determinism, such as presupposed in some positivist social sciences, but aspectual law is mainly not deterministic. Hirschheim, Klein & Lyytinen [1995, p.154] say "there is no 'universal' meaning ...", but spheres of meaning are universal. However, their "'universal'" refers to the assumption, rejected by Dooyeweerd, that language has an absolute link with external (fact-side) reality, whereas Dooyeweerd's universality inhabits the law side, and can never be grasped by theoretical thought or language. Thus commensurability might be possible.

It is likely that, as the links between Dooyeweerd and Klein are explored, more apparent incommensurability will emerge. The root of this is the difference between the Humanistic nature-freedom and the Biblical creation-fall-redemption ground-motives. Basden [2008b] has discussed how commensurability might be possible in general terms, not between the ground-motives as such but between extant thought that, though originally germinating under nature-freedom, can be transplanted to creation-fall-redemption and flourish. This can 'enrich Humanist thought'. That Heinz Klein was a Humanist and I am a believing Christian makes this exercise more poignant. That Heinz Klein was beginning to find parts of Dooyeweerd's thought interesting suggests that the exercise might be worthwhile.

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