Edification: That's the Name of the (New Technology) Game.

General Track

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1. Introduction

What should we do when we encounter a new technology that does not make sense? In the organisational context, there are established ways to evaluate new technologies for their fit into existing operating practice, but these approaches already commit to an existing interpretation of what the new technology *might be,* and thus limit the potential for it to disrupt organisational thinking and trigger new competitive practices.

> *Example: When the iPad was launched, initially businesses dismissed it because it did not offer obvious advantage over existing computing tools for known business processes. It was simply not understood as the kind of technology that business professionals would use. Yet, through experimentation and collective learning, in time some businesses discovered unanticipated uses for the iPad and ways to fundamentally reorganise existing activities such as meetings and mobile work. Crucially, these changes were brought about by changes in collective understanding of the very nature and purpose of both these activities and the iPad itself. Ultimately, introduction of the iPad disrupted what it means to be connected while travelling, our understanding of mobility, what counts as a meeting, and what it means to be a well-organised knowledge worker. As such, it created new ways of competing on mobility and responsiveness. In organisations where the iPad was ignored or mistaken for incremental technology new competitive advantages were missed.*

Although organisations increasingly confront unfamiliar new technologies, analytical management theory has little to say about how an organisation can use such confrontations to disclose new self-understandings. We draw on Richard Rorty's notion that hermeneutics is the proper approach to the 'abnormal' to propose *edifying management practices* as a path to realising the disruptive potential of new technologies. The resulting performative, hermeneutical change processes instantiate change as an on-going becoming, consistent with the strong process view of organisation.

2. Rorty's Key Distinctions

In "Philosophy and the Mirror of Nature" Rorty (1979) introduces three distinctions that underpin his critique of foundationalist epistemology. First, drawing on Kuhn (1962) Rorty distinguishes *normal* and *abnormal* discourse, arguing that this should be the basic dichotomy of philosophy. "(N)ormal discourse is conducted within an agreed-upon set of conventions about what counts as a relevant contribution, what counts as answering a question, what counts as having a good argument for that answer or a good criticism of it. Abnormal discourse is what happens when someone joins the discourse who is ignorant of these conventions or who sets them aside" (*ibid*, p320).

Secondly, Rorty argues that hermeneutics (Gadamer, 1989) is the appropriate way to approach "an abnormal discourse from the point of view of some normal discourse" (Rorty, 1979, p320). While analytical philosophy seeks a foundational language that would render all discourses normal (and commensurable), hermeneutics attempts to *interpret* the abnormal by making use of the standards of some normal discourse as a necessary but *provisional* starting point.

Finally, his distinction between *analytical* and *hermeneutical* approaches to the unfamiliar yields two contrasting conceptions of the pursuit of knowledge: a *systematising* knowledge practice seeks to tame the unfamiliar by finding its place within a set of universal categories, while an *edifying* knowledge practice celebrates the unfamiliar as an occasion for self-education and discovery of new meaningful distinctions (Kelly & Noonan, 2017; Spinosa, Flores, & Dreyfus, 1997). Systematising reflects the dispassionate, theoretical and universalising ideal of *episteme,* while edification reflects the engaged, particularised and developmental orientation of *phronesis* (Rorty, 1979, p319)*.*

We now translate and apply these distinctions to contrast two distinct ways that organisations can approach *making sense* and *making use* of emerging new business technologies.

3. New Technology Management as a Systemising Practice

In line with the foundationalist poles of Rorty's distinctions, traditional technology management approaches (Goodhue & Thompson, 1995; Lucas, Swanson, & Zmud, 2007) take an *analytical* orientation to the *normal* in pursuit of a *systematising* management practice (cf. (Sandberg & Tsoukas, 2011)). New technologies are evaluated by whether their material properties make them suitable to provide a solution to a known problem, or replace existing technologies, understood as tools, within a predefined production system promulgated through top-down management (Johnston & Riemer, 2015). Such *systematising technology management practices* thus perform the materiality of new technologies as self-sufficient objects transparently present for analytical evaluation as parts of a totalising system. Conversely, subjectivity is performed in dualist and hierarchical terms as technology analysts (minds) managing technology users (bodies).

When such a systematising management practice encounters an anomalous technology like the iPad only two possibilities are available to it. The first might be to 'colonise' the technology

under existing practices. That is, the technology is treated as though it is normal and any indication that is has characteristics that do not fit the model of the normal range of tools are simply ignored (or not seen). For the iPad this might have meant treating it as a somewhat non-standard laptop computer and ignoring characteristics that do not fit this identification (e.g. absence of external ports and keyboard is noted, while presence of GPS and motion sensors and the ability to manipulate content via touch are missed). It might subsequently be deemed an underperforming substitute tool and not adopted in practice. The second possibility would be to dismiss it out of hand as fringe technology 'for techno-dabblers' but definitely 'not for us'. In either case, the technology is unlikely to be adopted or to make new possible ways of organising with it available to the organisation.

4. New Technology Management as an Edifying Practice

By contrast, on the alternate poles of Rorty's distinctions, an unfamiliar technology is understood as 'abnormal' from within the 'normal discourse' (i.e. the current practices): it must be *interpreted,* rather than *analysed* against the existing 'system'. What must then be called into play is an *edifying* knowledge practice. We will outline the shape of such an *edifying technology management practice* by expanding on each of the alternate poles of Rorty's distinctions in turn.

An edifying management practice must approach the abnormal, not as something to be either tamed or rejected as unintelligible, but as an opportunity for challenging and developing the existing practice. According to Rorty, a hermeneutic engagement with the 'abnormal' is the appropriate response, and below we will flesh out the lines of a 'performative hermeneutic' engagement with new technology. For this we draw on Gadamer's (1989) account of interpretation of texts and specifically on his concept of the 'horizon of understanding'. Gadamer (1989, p301) insists that every interpretation is from some *perspective* which puts limits on what can be 'seen' - what is within the horizon and what is beyond the horizon. For the technology case this concept will destabilise the substantialist view (Cecez-Kecmanovic, 2016), implicit in the analytic management paradigm above, that what any material thing 'is' is determinate and derives from inherent self-sufficient properties (features in the case of technologies).

In applying hermeneutics to technology, we are not asserting that technologies should be understood as texts, but rather that many elements of interpreting text are relevant to obtaining an understanding the place of 'abnormal' technologies in a collective practice. The adjective *performative* is used in an epistemological sense and denotes that technologies are primarily known manipulatively. Our endeavour might be viewed as an extension to technology of Ricoeur's argument that text interpretation provides a model for a general hermeneutic epistemology (Ricoeur, 1973). However, the notion that material entities may be interpreted is already part of Heidegger's (1961) distinction between beings and being, where the being of an entity is an interpretation of what it 'is'. Pickering's mangle of practice (Pickering, 1995) can also be read as a 'performative hermeneutic' approach to the role of materiality in scientific knowledge creation. Idhe (1999) coined the evocative term 'material hermeneutic' for his account of technology but his approach differs from ours by positing a direct *mediating* role for technology in perception. Finally, the key move in all of these sources

is a move away from inductive-deductive analysis to abductive logic (Alvesson & Kärreman, 2007; Psillos, 2009).

4.1 Encountering an abnormal technology.

First, adapting Gadamer's maxim that "a hermeneutically trained consciousness must be, from the start, sensitive to a text's alterity" (Gadamer, 1989, p269), the new technology should be provisionally granted the status of a potential, if unfamiliar, *collaborator* in the practice: it should be offered the hospitality that a stranger warrants (Ciborra, 1999). This involves the interpreter suspending a stance 'over and against' a known object and instead opening themselves to the ambiguity of a technology. For the iPad, this meant that more adventurous companies sponsored the use of iPads even when it was not fully understood 'what it was' and what in relation to company practices 'it was for'. This is a suspension of 'analytical disbelief' and a 'granting permission' to the technology to put its unique identity on display and in play, with an expectation that it can make a difference.

4.2 Interpreting an abnormal technology.

Now the edifying practice must enter into a process of interpreting the unfamiliar 'other' that does not seem to know or accept the rules of 'our' normal game. To see what this process might entail, we can make use of Gadamer's (1989, p363) assertion that interpretation proceeds on a logic of question and answer - questioning the 'other' and listening to its answers on the presumption that it has some 'truth' to offer (*ibid*, p489). In our technology context, this questioning-listening interaction will be *actively performed* by tentatively and incrementally incorporating the new technology into collective discourses and actual working practices. It will be a *performative interpretation* of 'what it *is*', 'what it is *for*', and whether 'it is *for us*' (Riemer & Johnston, 2012, 2017). This process must iterate until these parts of the interpretation form a self-consistent whole (Gadamer, 1989, p294). Part-whole consistency (the hermeneutic circle) now must provide the 'correctness criterion' for having understood the new technology, because we can no longer rely on a pre-given production 'system' to arbitrate what the technology *is* on the basis of a correspondence theory of correctness (Johnston, Reimers, & Klein, 2016). The following paragraphs unpack this performative hermeneutic process a little more.

It is individuals who first encounter the new technology as 'abnormal'. They will 'see' it on a horizon of existing practices and parse it in terms of existing categories. These are simply the fore-having and fore-conception of interpretation (Gadamer, 1989, p269). However, this background is not a set of explicit cognitive rules or theories but a set of social and material practices (Dreyfus, 1980). So even in these initial individual encounters, where the technology is an object of evaluation, how this object is seen draws on collectively shared categories 'talked into existence' (Weick, Sutcliffe, & Obstfeld, 2005) within collective practices. Furthermore, evaluation of any technology is always at least partly manipulative – we take it for a spin around the block and see what it can do. But again, this performative evaluation depends not only on individual embodied skills but also on what the collective practice makes available as coordinated activities it could even possibly be 'for', and be tested against. Thus the horizon of individual evaluation has bodily and material, as well as social, elements.

Consequently, this question-answer interaction is always both individual and social, discursive and material.

The 'othering' of the new technology is also both individual and collective. On the individual level, the technology is just different and unfamiliar; at the collective level the issue is whether it is potentially 'for us' – part of 'our stuff'. Granting 'alterity' to the new technology thus necessitates negotiating its potential as a collaborator toward a *shared* purpose, so that collective identity is also a dimension of the horizon of interpretation.

Thus, a performative hermeneutic proceeds via a negotiation with the new technology about 'what it is', 'what is it for' and whether is 'for us' on a horizon derived from the social, material and identity dimensions of existing practices. But this is a moving horizon: as the technology is tentatively understood discursively, and put to use experimentally, our understanding of 'who we are' and 'what we do' incrementally changes. Because it is both discursive and performative, the very process of negotiation with the technology changes the practices that provide the evaluative horizon. But something else is changing at the same time as well, namely, our tentative interpretation of the technology at any stage - what it 'is' for us. Gadamer provides the useful notion here of the horizon of the 'text' itself – the horizon of the technology itself, in our case. For Gadamer, the horizon of a text is the question to which the text would be the answer (Gadamer, 1989, p363). For a technology in an organisational context, this translates to the organisational problem that the technology would solve. Note that this horizon is anchored in *a practice that might be*.

Now we have two horizons changing through the question-answer process: the horizon that derives from our changing understanding of our own practices, which informs the questions we 'put' to the technology; and the horizon that clouds our understanding of its answers when it speaks to us about what it might be. When it is not understood, these two horizons do not coincide (by definition). But we hope they will converge as we continue to iterate and that they will eventually coincide. Gadamer (1989, p370) refers to this state as a 'fusion of horizons': when the horizon of the interpreter and the horizon of the interpreted fuse, an understanding has been achieved.

Translated into our context, this fusion of horizons means that the technology has been identified as the answer to organisational problems that only arise (and can only be seen and acted upon) within an organisation *that has already incorporated the technology* into its practices. So the answers the technology provides and the questions it answers pull each other up by their boot-straps. Such an answer cannot *in principle* be anticipated at the start: no amount of analysis that is beholden to the conceptual and practical orientation of the practices *at the start* could have 'fore-sight' of the outcome. In fact, since our questioning and listening are performative, so too is the technology's answer: it answers by becoming normal in (appropriated into) the organisational practice that it has also changed in the process. Such a process is an actual progression of the business along the trajectory of its own history, neither predetermined nor reversible (like all history); we will see in a moment that it is not final either. Furthermore, success is not guaranteed and the technology may remain an intractably 'other' deserving rejection. This process is thus risky but this risk-taking is the prerequisite for learning and development – for disclosing a new world (Spinosa et al., 1997) - as a basis for renewed business differentiation and competition. Finally, this process has

nothing in common with the trope of a decision to adopt followed by a subsequent implementation, which is the mainstay of analytic management.

We can now see the conceptual importance of the move of granting the technology 'alterity' rather than treating it as an object. This acknowledges a certain autonomy and agency – material agency for Pickering (1995) – of the technology in that its resistance to being deciphered is a source of active engagement with it and a co-determinant of the outcome. The process is thus rightly depicted as a situated (material-discursive) interaction between agents rather than an evaluation of an object by a subject from a distance. Such an interaction is only possible if there is a collective commitment to such a path of discovery. This raises questions for how this process can be 'managed' when it can neither be anticipated nor controlled.

4.3 Edifying the practice.

The organisational practice changes continually as the interpretation of the technology takes place because this performative interpretation simultaneously makes use of, and results in, its gradual incorporation into practice. Thus, while the technology is interpreted the organisation is 'edified' in Rorty's sense, because the fusion of new technology within its revised practices (new fore-having) provides a new a range of 'meaningful distinctions' (new fore-conception) for interpreting its environment. Put another way, the organisation appropriates the technology but the technology also appropriates the organisation. Thus, edification is a disruption of organisational thinking and doing by the technology with the potential to provide new bases for competitiveness. But the reciprocal nature of this appropriation brings into question technological deterministic accounts of disruption and even the notion that any technology is *inherently* disruptive (Riemer & Johnston, 2016). The iPad (along with other social media technologies) helped create the new category of the 'always-connected' knowledge worker, while at the same time dimming distinctions between work time and leisure time, office and world. This was not a latent feature of the technology waiting to be discovered: to be realised, new ways of working, meeting and coordinating had to be talked and manipulated into existence, and this came about at least in part by giving permission to a strange technology to enter and find a place in the business world.

A corollary to this edification is that the familiar may become unfamiliar. Technologies that were thoroughly appropriated in a practice and thus 'normal' might become 'abnormal' against the new horizon of the changed practices, and then a new round of performative hermeneutic engagement with these will propel the further becoming of organisational practices. This process may even be a more significant engine of change than the occasional arrival of new-to-the-world technologies. In any case, the consequence is that appropriation and normalisation of technologies as part of a practice is never finalised or stabilised. The edifying organisation is committed to an on-going becoming, in which what has already been understood is always subject to destabilisation and revision: edification is on-going work.

5. Discussion: Whither 'the Manager'?

Whereas a systematising management practice performs the materiality of new technologies as self-sufficient objects and subjectivity as a hierarchy of technology analysts (minds)

managing technology users (bodies), edifying management practice performs the materiality of new technologies as a 'potential collaborating other' *alongside* a subjectivity of *collaborating* humans. We will argue that the ontological and epistemological commitments of the edifying management paradigm thus make traditional notions of 'the manager' (Grey, 1999) deeply problematic. We will then reinterrogate these commitments to identify points of leverage that make possible an alternative notion of the manager. We do not aim to present an alternative proscriptive theory of management but simply to make use of the contrasting paradigms presented to bring into focus the dilemmas and opportunities faced by a would-be manager seeking to make the most of the potential of new technologies to disrupt existing practices.

5.1 Challenges to the traditional concept of the manager

First, under the edifying management paradigm change is inherently non-deterministic. The outcome cannot be predicted in advance from initial conditions because each episode of questioning and listening occurs on a moving platform that is fully part of the world that then moves on. This calls into question the planning and implementation logic of much traditional management and its accompanying notion of the manager as the 'brain of the organisation' (Beer, 1972) effecting planning and control.

Second, in edifying management change occurs *through* practices not *to* practices. This means that in any case there is no clear cut external Archimedean point from which a powerful manager could exercise leverage over the practice as a whole.

Third, practices in organisation are not uniform: in addition to multiple intra-organisational practices, individuals are enrolled in multiple practices in and outside of the organisation. This poses a further challenge to any monolithic approach to managing.

Finally, there is no real inside and outside to organisational practices – they are 'Klein bottle games' (Scally & Kavanagh, 2107). What we have called, for analytic purposes, 'new-to-the-world' or simply 'new' technologies frequently are neither new nor come from 'outside': they mostly come to be noticed by individuals through their place at the intersection of multiple practice and will be largely invisible to a panoptical manager.

Many of these points have been made before against rationalistic management but usually on different grounds, such as the bounded rationality of humans and the stochastic nature of reality. Such critiques are put forward as 'limitations' of the theory. Here we have looked from the stand point of an alternative paradigm to reveal them as profoundly ontological and epistemological.

5.2 Job description. Chief Edification Officer for New Technologies

But suppose there were some residual space within the edifying management paradigm for a 'manager'; perhaps as a *facilitator* of edification of, and with, others (Kelly & Noonan, 2017), and perhaps not as a privileged individual but as an activity to be shared or rotated. It is too early to tell from our own ongoing research on social media appropriation if this is the case.

But what can we say from our theoretical account above about the job description for such a hypothetical role, and what points of leverage they would have available?

1. Context Engineer: Edifying management is inherently situated – it depends in essential ways upon the social, material, discursive context in which it occurs. A purposeful intervention in this *situation* of work thus presents an alternative 'soft' point of leverage on edifying practices. Engineering context, rather than directly controlling action, reverses the figure and ground of organising and controlling (Johnston & Brennan, 1996). Altering context as a point of leverage already figures in Lean (Johnston, 1995) and Agile (Goodpasture, 2010) management approaches.

2. Danger Warden: Edification requires commitment to an iterated disclosure of an unknown future. This necessarily creates risk to the organisation and for individuals. The risk is not just straying into unfruitful areas but also of reinstating a new systematising practice for the sake of security and shutting down on-going reinterpretation. The danger warden will create time and space for creative experimentation and risk-taking and discourage the comfortable consensus of bureaucracy.

3. Alterity Worker: An alterity worker seeks to make the familiar (as well as the new) strange and uncanny (Kavanagh, 2014). When technologies become taken-for-granted 'equipment' (Riemer & Johnston, 2012), their use becomes routine and they withdraw from 'sight'. A performative interpretation strives for this end-state and its fluency. But its edifying Janus-face seeks to use the new meaningful distinctions that these appropriating events afford to once again 'see' its already-appropriated practices as strange. Alterity work selectively disrupts the taken-for-granted horizon of a narrative that colonises all difference, while being mindful that established perspectives are what make any collective 'seeing' possible at all (Gadamer, 1989, p278).

4. Hospitality Worker. The other side of alterity work is cautiously and selectively welcoming 'the stranger' into our home (Ciborra, 1999). It is through interpreting the 'other' that we become edified and find renewed competitiveness. But strangers can also be a threat. What criteria are available to judge the 'stranger' when an all-encompassing system no longer provides a basis for 'environment scanning'? Assessment cannot be *a priori* because useful opportunities cannot be seen in advance. Instead, a practice of vigilant performative interpretation of technologies is needed, that seeks to fuse horizons on the criterion that "a better interpretation is one that makes the interpreter more flexible and open to dialogue with other interpretations" (Dreyfus, 1980, p237).

5. Living Exemplar: A living exemplar (Kelly & Noonan, 2017) would 'walk the walk' of edifying practice, making it 'shine' and gather others around the practice. This means they would exemplify all the qualities implicit in the previous points: encouragement not control, risk over security, openness to difference, and a search for the broadest possible interpretive horizon, as they live, and show others the way to live an edifying life 'at its best'. This role contrasts to a certain kind of project 'champion' who only 'talks the talk' and only when it suits instrumental purposes.

6. Conclusion

We conclude with the following points that summarise the novelty and contribution of this work:

1. In the performative hermeneutic process that we propose, organisational practices are disrupted in the course of interpreting a technology and this disruption is also the means for interpretation;
2. Thus, organisational self-understanding and understanding of technologies move in lock-step and in fact mutually ground each other – they pull each other up by their boot-straps;
3. This mutual constitution of subjectivity and materiality replaces the dualist, substantialist conception of technology that largely informs traditional analytical approaches.
4. Furthermore, as organisational self-understanding is disrupted, additional technologies (new and old) are now encountered as unfamiliar and demanding interpretation. Edifying practices are thus *thrown* into on-going change by the provisional character of their "for-having" and "fore-conceptions" and *projected* toward a relentless necessity to renew understanding.
5. Thus for edifying practices, change is non-deterministic and is underpinned by a temporality where past and future are present in every moment: change is not simply a mechanical sequence of state changes indexed by clock-time.

These points together demonstrate that our proposal for an edifying technology management practice instantiates a conception of change as an *on-going becoming*, consistent with a process view of organisation (Cecez-Kecmanovic, 2016; Langley, Smallman, Tsoukas, & Van de Ven, 2013) of the 'strong' kind (Tsoukas & Chia, 2002).

Such a process view asserts that discursive and manipulative *interpretation* of challenging new technologies is required to realise their disruptive potential. Such *edifying* management practices make available new meaningful distinctions to an organization with which to understand their business processes and competitiveness. By denying external points of leverage on practices to a privileged 'manager', edifying technology management will require new vigilant modes of organizational life that achieve a balance between openness to the strange and the comfort of familiarity.

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