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Inherently interdisciplinary: four perspectives on practice-based
research

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Abstract

I review four book-length studies of practice-based research: Carter (2004); Gray and Malins (2004); Hannula, Suoranta, and Vadén (2005); and Sullivan (2005). I outline the positions adopted by each of the books on the nature and scope of practice-based research, and assess the extent to which they present clear, coherent and applicable accounts. A thesis present in all four books, I argue, is that art is uniquely placed to generate research on account of its being inherently interdisciplinary, that is to say, art in and of itself involves combining different subjects and methods. However, while all four books set out perspectives and methods relevant to this view, none provides a fully worked-out theory. Carter and Sullivan offer the most explicit and sustained studies of interdisciplinarity, but omit to say precisely how it generates knowledge.

Interdisciplinarity is hinted at by Hannula, Suoranta, and Vadén, and by Gray and Malins as being crucial to artistic research, but the idea is not pursued. I demonstrate briefly how Kant's theory of knowledge can go some way towards filling the gap left by the four books in the interdisciplinary debate. On his view, concepts determine the content of experience, and the interdisciplinary tension between concepts creates occasions for reality to surprise us and new observations to be made.

Keywords: interdisciplinarity, knowledge, practice, research, transcognition, verbalization.

Inherently interdisciplinary: four perspectives on practice-based research

I don't know. You wait for ages for a book on art-practice-based research to appear, and then seven arrive at once: (1) Balkema and Slager (2004); (2) Barrett and Bolt (2007); (3) Carter (2004); (4) Gray and Malins (2004); (5) Hannula, Suoranta, and Vadén (2005); (6) Macleod and Holdridge (2006); and (7) Sullivan (2005). Well, as you can see from the years of publication, the 'at once' is a slight exaggeration. Nevertheless, the publication within three years of seven book-length studies of art as research is a striking indication of just how much interest there is in the subject. In this article, I review the four books which are the work of individual authors or teams of authors: (1) Carter; (2) Gray and Malins; (3) Hannula, Suoranta, and Vadén; and (4) Sullivan. This is in order to identify and assess the positions they adopt on art as research, to see what the similarities and differences are, and to draw out the main points for critical discussion. In terms of the geography of the review, one would be hard placed to find a more even, global distribution of viewpoints, since four countries and three continents are represented: Carter is based in Australia, Gray and Malins are from the UK, Hannula et al. are in Finland, and Sullivan is in the USA. Unfortunately, I do not have the space to consider the three collections of papers edited by Balkema and Slager, Barrett and Bolt, and Macleod and Holdridge. This is not to reject or cast doubt upon them. It is just that taking on four book-length studies, and the sustained arguments which they contain, is enough for one article. Responding to the variety of positions contained within the edited collections must remain the job of another paper.

Of the four books, three are largely theoretical, by which I mean they advance a particular thesis with regard to how art functions as research, and aim to explain and support the thesis. The three are: Carter 2004, Hannula et al. 2005, and Sullivan 2005. They also concentrate on art, with only Hannula et al. making some additional references to design. In comparison, Gray and Malins's book is more of a tool kit: an overview of the various paradigms and methods available to the researcher in *art and design* (theirs is the only book to consider both subjects equally), but without an indication as to which paradigm is preferred. Despite this absence of a stated position, there are nevertheless moments in their writing when Gray and Malins reveal the properties which they think make practice-based research novel and distinctive. As it turns out, one thesis does occur independently in all four books (no cross-referencing takes place between them): namely, art is uniquely placed to generate research on account of the fact that it is inherently interdisciplinary, that is to say, it involves combining different subjects and methods, for example, the interaction between an artist's practice specialism and the interest they want to explore through their practice, with the research value lying in the negotiation which takes place between them, and what that negotiation produces. This thesis though occurs in different ways in each of the four books. I set out the individual theories, and assess the degree to which they provide coherent, applicable models of practice-based research. While there is much in the four titles that is valuable to the art-as-research debate, it is regrettable that all four leave major gaps in their exposition of the 'interdisciplinary' thesis, with the result that at the end of the four, it is not altogether clear how the artist-researcher can generate new knowledge by working with different subjects and methods. I make one suggestion of my own in the final section with regard to how such an interdisciplinary theory of knowledge might apply to practice-based research.

Hither and thither with Carter and Co.

I shall consider Carter's and Sullivan's books first, since they make the strongest pair of the four: they are the most explicit in advocating an interdisciplinary approach to artistic research. The focus of Carter's interest in *Material Thinking* (2004) is not art and design

research per se but cross-disciplinary artistic practice. Why then is the book being reviewed here? Because, according to Carter, interdisciplinarity generates insight, and the way we understand this generation of insight can serve (to quote the book's jacket copy) as 'an intellectual underpinning for the new, and still developing, field of creative research'. The book has eight main chapters, not including the preliminary documentary apparatus: the opening and concluding chapters introduce and reflect upon Carter's theory of knowledge respectively, while the six in-between each describe and evaluate an artistic collaboration. All six projects include Carter (a writer, and a text-installation artist) as one of the collaborators. The projects include: the installation of a 'waiting room' containing objects that make the experience of waiting tangible; the relocation of the ruins of a house belonging to the mother of Australia's first Surveyor-General as a form of restaged 'homecoming'; and an exploration through film of the processes of renewal and redefinition undergone by Italian and Greek post-war migrants. Running throughout the book is Carter's concern for 'the continuing wretched state of race relations in Australia' (2004: 159). Thus, all of the collaborations address the politics of migration, belonging and place in some form or other. One of Carter's ambitions for creative research is that the discourse it generates can help to enlarge art's capacity for social engagement. Creative research, he writes, is 'the making of a new social relation through a concomitant act of production' (2004: 10) and, thereby, one hopes, an occasion in which race relations might adopt forms other than those permitted by orthodox routes. While it is beyond the scope of this paper to assess the political impact of Carter's theory, I shall nevertheless return to one of the collaborations to assess in detail how it serves as a template for creative research.

His thesis that interdisciplinary practice might serve as the basis for a theory of artistic research in general, Carter admits, was prompted by the American artist Robert Morris. Art, according to Morris (and quoted by Carter), is 'a complex of interactions involving factors of bodily possibility, the nature of materials and physical laws, the temporal dimensions of process and perception, as well as resultant static images' (2004: 8). What this means, again in the words of Morris, is that 'the artificiality of media-based distinctions (painting, sculpture, dance, etc.) falls away' (2004: 8). Such non-disciplinary or interdisciplinary activity can become 'the discourse of creative research', Carter

argues, precisely because it 'is likely to be occasional, generically disrespectful and promiscuous, and localised' (2004: 9). The discourse Carter has in mind is the commentary and reflection which follow the negotiation and openness to possibility that one is obliged to adopt when working across disciplines. By 'uniting diverse skills, experiences and interests, and connecting disparate and diverse things', Carter asserts, his six collaborations 'have materialised in the making process an intellectual to-and-fro' (2004: 9). That is to say, collaboration obliges its participants to reflect (a) on their working methods and assumptions and (b) on the ambitions of the project in hand, in such a way as to allow new methods and understandings to form and, perhaps most importantly, to leave traces of the zig-zagging conversations and thinking processes which produced the new methods and understandings so that others might follow the trail. The process, he suggests, is 'like the shuttle ducking and weaving across the warp' of a loom, recalling the 'physical sense of running hither and thither' evoked by the word 'discourse' (2004: 9). In this way, the aim of creative research is 'to *materialise discourse itself*' (2004: 9; original emphasis).

It could be objected that Carter's emphasis on interdisciplinarity means his model is not readily applicable to doctoral research in art and design, where the requirement is that the research is the work of an individual and not a team. But this is not the case. The kinds of conversation between discipline specialists which he has in mind could take place as case studies within the research programme of an individual researcher. It is the principle of intersecting perspectives being the source of new knowledge that is at the heart of Carter's thesis, and the process of intersection, together with what that intersection leads to, are events which the individual researcher would do well to become familiar with.

How successful are Carter's accounts of interdisciplinary practice as templates for creative research? Let us look at one of his collaborations in more detail. In collaboration 3, he works with curator and exhibition designer Peter Emmett to produce a museum installation which, instead of displaying objects from the past, promotes the 'active re-membering' of the past (2004: 73). Active re-membering is an approach to historical representation which acknowledges that 'history itself is a *local*

invention' (2004: 73). Events, and the images and objects to which they give rise, Carter asserts, are created, and are invariably *poetically created* on account of the fact that there will be a poetic vision behind their design. He gives the example of the first Government House in Australia which 'did not simply occur at a predestined site'. Rather, 'the process of siting the building... was poetic' in the sense that (in Wallace Stevens's words) it made the 'slovenly wilderness surround that hill' (2004: 73). Active re-membering seeks to embody this poetic inventiveness in its exhibition design.

Two areas where Carter and Emmett adopt this poetic approach are in their use of captioning in their installation, and in their list of events. As regards captioning, their 'collective goal', we are told, is to work against the Freudian repression which, according to Carter, 'characterizes most caption content and design' (2004: 75). Captions, he argues, 'are types of *ecphrasis*, writings about art (or object) that seek to legitimise their presentation and to regulate the way in which the visitor looks at them' (2004: 75). Against this, Carter and Emmett choose to enlarge upon (or 'dramatise', as Carter puts it) the lack of correspondence between the illustrations and journal entries from the First Fleet archives, their source material (2004: 75). Their poetry becomes a matter of 'cryptic interpretation' and 'disassociative juxtaposition' as they combine illustration and journal quotation in ways which generate new or alternative associations rather than pay fidelity to 'a linear history of leading events' (2004: 76). Their second poetic approach, in relation to the listing of events, builds upon already existing ambiguities in the Museum of Sydney's historical archive. The grouping of materials in the archive (details of characters, anecdotes, incidents and phrases), Carter suggests, appears to have been 'on the basis of material resemblances' and, as such, is 'a sincere tribute to the ambiguity and polysemous richness of the sources' (2004: 83). Exaggerating these existing ambiguities, Carter declares, allows them to suggest 'the migration of spirits from one speaking place to another, communicating [their] view that place comes into being discursively, in the growing pattern of stories, which emerge from... history's always unfinished, and frequently self-contradictory, conversation' (2004: 84).

How does this record of interdisciplinary practice serve as a template for creative research? Sadly, Carter's account of the project neither develops nor even corresponds

to the interdisciplinarity thesis he sets out in the first chapter. At no point is there a sense of an ‘intellectual to-and-fro’ between Emmett and Carter, yet this is the action which, according to Carter, gives creative practice its discursive quality. Instead, other than providing biographical and anecdotal information about the project, discussion focuses upon the theoretical concepts which are at work, for example, the concepts of *ephrasis* and Freudian repression, mentioned above, and the contrast between time organized as a linear series of events (*chronos*) and organized in terms of moments that are ‘right, ‘critical’ or ‘opportune’ (*kairos*). This avoidance of the discursive potential for interdisciplinary practice in favour of exploration of key theoretical concepts affects all the other chapters too. For example, the sixth and final collaboration involves (i) the recital of the transcript of a conversation between an Eora woman and a First Fleet officer from circa 1790, and (ii) the recording of the recital installed as a sound work in the Museum of Sydney. While the chapter does consider (albeit briefly, for one page; 2004: 155-56) the creative ambiguities which emerge from the toing and froing between transcript and vocalization, the greater part of Carter’s commentary consists of historical and anecdotal information, and (the largest part) theoretical discussion, this time of cross-cultural exchange, the politics of communication, and mythologization (2004: 159-64, 164-70, 170-76). While these subjects are clearly important and relevant to the research, the coverage they receive is at the expense of much more aesthetically- and interdisciplinarity-focused studies of (i) what occurs between transcript and vocalization, and (ii) how the architectural and installed properties of a sound work might impinge upon Carter’s selected themes of colonization and institutionalization.

The relation between theory and practice is relevant to practice-based research, so could it not be argued that Carter, in drawing out the theoretical concerns of his projects, is nonetheless keeping to the topic of creative discourse, albeit in terms of theory-practice rather than interdisciplinary practice? Unfortunately, Carter cannot claim this benefit, since his theorizing concentrates upon using concepts to create discursive claims for the collaborations, like the one on archival ambiguity above, and does not draw back to reflect on how his understanding of the theory-practice relation promotes the discursive nature of practice. What is more unsatisfactory, the discursive claims he makes using theoretical concepts seem to be more about theory than practice, in that the assertions

are made in theoretical terms but never actually refer to or address the practice. For example, to return to the exaggeration of existing ambiguities in the Museum of Sydney's archive from the third collaboration, the act of exaggeration, according to Carter (as I quote him above), allows them to suggest 'the migration of spirits from one speaking place to another, communicating [their] view that place comes into being discursively, in the growing pattern of stories, which emerge from... history's always unfinished, and frequently self-contradictory, conversation' (2004: 84).

But does it? Can this – a suggestion (Carter calls it this) – be held up as a knowledge claim? There is only a very brief description of the objects making up the installation, and this is limited to a few words on the 'mingling of different typefaces' and the claim that the 'iconic quality' of their 'wall of text' comes from its 'placing' in the museum and not from its 'visual design' (2004: 90). Thus, there is no way of telling how an installed text, using a variety of typefaces, might evoke the discursive generation of a sense of place. Such a claim is more a display of the kind of statement that can be made within the subject territory than an attempt to address what arises from the practice. A genuine account of the practice as research would need a detailed study of text and typography as installation, and reflection on how sculptural or installed typography can promote alternative, non-linear or non-chronological forms of discourse. But none of this is provided or considered by Carter.

In summary, Carter offers a thesis that is credible in principle: interdisciplinary practice creates a context for exchange in which the hither and thither between methods and assumptions generates new discursive knowledge, where this knowledge arises from the negotiation that must inevitably occur between practitioners working across disciplines. But Carter fails to support his thesis. Although he claims to provide accounts of his thesis in operation, the descriptions of his collaborations veer away into theoretical debates which, although relevant to the collaborations, don't address the generation of discourse through interdisciplinary practice. As such, they add little to the practice-as-research debate. However, the first and last chapters, introducing and giving concluding remarks respectively on Carter's model of interdisciplinarity, will be useful to anyone interested in *the theory of* how interdisciplinarity in art can generate knowledge.

Sullivan on art as transcognition

The idea that art can be a form of research on account of its working across domains is also the principal claim of Sullivan's book, *Art Practice as Research* (2005). Sullivan's term for cross-domain enquiry is 'transcognition' and it is a mode of enquiry which each artist can practice individually, that is to say, domains are crossed due to art practice *in and of itself* involving a number of different perspectives which the artist-researcher has to combine in order to extrapolate new possibilities. Art should be recognized as a form of research, he argues, because it is 'a site for knowledge construction and meaning making' (2005: 86); in other words, it is an activity in which visual and cultural understanding is refracted and transformed, and which allows us to observe the processes of refraction and transformation taking place. The book is divided into three parts: (1) Contexts for Visual Arts Research, (2) Theorizing Visual Arts Practice, and (3) Visual Arts Research Practices. Unfortunately, the structure of Sullivan's writing makes the book difficult to follow. It is rich in theory and terminology, with accompanying illustrations setting out how the technical components stand in relation to one another. However, the difficulty lies not so much in these elements themselves but in the way they unfold over the course of the book. A lot of the technicality at one point is either countermanded or replaced at a later point, leaving the reader (or me, at least) wondering why they had to endure the earlier part when a revised or much more straightforward position is to follow later. My review will follow the order of sections in the book, but my recommendation would be to read the book in reverse order, from part 3 to part 1. I give examples of the countermands below.

In part 1, 'Contexts for Visual Arts Research', the idea that art itself can be a form of research is asserted against 'the constraints of the social sciences' (2005: 61). The danger, Sullivan maintains, is that art research, because of its relative infancy, imports social science research methodologies in the belief that they will confer objectivity. The problem with this is that practice-based research is made to conform to the priorities of social science methodology. The growth of visual studies within sociology and

anthropology has not helped either, he maintains. In these contexts, images are either dismissed as being ‘too subjective and messy... [for] systematic analysis’ or treated as ‘objective artefacts’, that is, as documents whose interpretation is merely ‘an exercise in content analysis’ (2005: 63). Where visual studies methods fall down, Sullivan argues, is in the assumption that visual content can *simply* be described; the visual is assumed to have content without any consideration of the meaning-generating process through which it has acquired content and become significant. This is where Sullivan thinks art as research can succeed over visual studies methods. It is a context in which attention has to be paid to ‘how those who make images – artists and other visual communicators – and those who interpret images – critics and other commentators – construct their meanings as they present them in visual form’ (2005: 63). On this basis, according to Sullivan, art itself can be a form of research because it is the occasion for the creation of meanings through visual form, and for reflection on how these meanings are created.

In part 2, ‘Theorizing Visual Arts Practice’, Sullivan identifies the creation of meanings through visual form with theory. Art is always already theoretical, he thinks, since it includes theorization as part of its own activity. Initially, this might appear an alarming or a contentious claim. But it is just the first example of an assertion being made at an early stage in the book which is then revised at a later stage. It is not the case that the meaningfulness of art is being assigned to theory and denied to practice. Neither is it the case that art and theory are being collapsed into one another. Rather, this is an initial expression of the thesis that theory and practice enjoy a tensile, transcognitive relationship, with the research value of the artwork lying in the interaction which takes place between the two. This clarification does not appear for another twenty-five pages though. As an example of art’s theoretical nature, Sullivan cites Damián Ortega’s work *Cosmic Thing* (2001) – the dismantling of a Volkswagen Beetle car and the laying out of its components – since the work invokes ‘several creative and critical capacities’ (2005: 72). Rather than the work being reducible to the sum of the car’s parts, ‘something else is added as explanations are revealed, connections are made, and new forms of understanding emerge’ (2005: 72). In the case of *Cosmic Thing*, the ‘explanations’, ‘connections’ and ‘new forms of understanding’ include ‘wry political commentary’ (from the work’s resemblance to ‘a three-dimensional political cartoon’), the creation of

a ‘social space where inferences are easily revealed’, ‘hints of cultural repurposing, and traces of the post-industrial military complex as an original emblem of Nazi efficiency’ (2005: 72).

How do these ‘new forms of understanding’ constitute research? Is one understanding more valid than the other? How are the understandings grounded? Is such a grounding necessary, or is it the case that anything goes? Sullivan’s answer is appeal to a ‘bigger picture’ of the nature of research. Rather than adhere to the scientific model of knowledge whose ‘criteria for quantitative results are based on the probable likelihood of occurrences’ and whose ‘findings from qualitative inquiries are assessed by the plausibility or relevance of outcomes’, Sullivan urges us to adopt a model in which knowledge ‘is individually and culturally transformative’, where ‘individual and social transformation [is seen] as a worthy human enterprise’ and ‘to know’ means ‘to be able to think and act and thereby to change things’ (2005: 72, 74). The significance of the ‘new forms of understanding’ that we get from art, he thinks, is that they are ‘powerful state[s] of mind that allow us to see things differently’ (2005: 73). Transcognition is pivotal to this because it is a model which configures knowledge as a dynamic process arising from relations between modes of cognition, including art. While this is an answer of sorts, it also raises a host of further questions: Do we accept Sullivan’s ‘bigger picture’ definition of research? How might it sit (in the UK) with the authors of the impending Research Excellence Framework? What model of understanding is being employed? For the questions asked above regarding the kinds of understanding generated by an artwork – over the validity and grounding of understandings – still stand.

Insert fig. 1. Sullivan’s transcognitive visual arts research framework (2005: 95); see back of manuscript.

Some clues as to how understanding is being formulated are given as part of Sullivan’s account of transcognition. But only clues. Sullivan visualizes transcognition as a large equilateral triangle, made up of four smaller equilateral triangles (fig. 1; 2005: 95, with modified versions at 129 and 153). The central triangle of the four is labelled ‘art

practice’, and surrounding it are triangles representing ‘interpretivism’, ‘empiricism’, and ‘criticality’. But as he points out, the triangles signify relationships and not bounded regions: ‘the boxed boundaries... are presented in the spirit of bridges rather than barriers... [T]he edges... should be seen to more closely resemble the “folds” of postmodernism’ (2005: 94). Some confusion is caused by the fact that the ‘empiricism’ section includes the very quantitative and qualitative systems of analysis which Sullivan spent part 1 of the book trying to exile from artistic research. This is another case of an earlier section being countermanded by a later one. Quantitative and qualitative methods are now back in the fold on the (hastily explained) grounds that developments in qualitative methodologies ‘open up sense-based strategies to practical reasoning [which] give a sense of [their] methodological utility’, which I take to mean that Sullivan envisages art-based research contexts in which qualitative data derived from ‘experience of social reality’ (Sullivan’s phrase) may prove useful (2005: 96).

The ‘interpretivism’ and ‘criticality’ triangles correspond respectively to the models of understanding (the hermeneutic theories of Habermas (1971) and Ricoeur (1981)) and the arguments for research-as-social-change (the constructivist perspectives of Egon Guba and Yvonna Lincoln (1998)) which inform Sullivan’s ‘bigger picture’ of research. Readers who would have liked an account of how these theories inform Sullivan’s model will be disappointed, since he offers no engagement with them in the pages which follow. All that is added is a metaphor as a means of understanding how the four areas – art practice, empiricism, interpretivism and criticality – intersect. The areas, he claims, are ‘braided’, like the strands coiled within a rope (2005: 103). But this does not advance his model. It simply replaces one image (the triangle) with another (the braid), without providing any insight into how the interaction between or braiding of the four areas might take place. (Later on, Sullivan confirms that ‘transcognition’ is another name for braiding (2005: 150).) Ideally, some explanation would have been given as to how Habermas’s and Ricoeur’s theories reinforce Sullivan’s claim that the forms of understanding created by art can create knowledge that ‘is individually and culturally transformative’ (2005: 72). This would go some way towards grounding the observations Sullivan makes with regard to Ortega’s *Cosmic Thing*. There is much in both Habermas and Ricoeur that could, in principle, support Sullivan’s claim for the

transformative power of art, but without this analysis, his remarks to the effect that Ortega's installation provides 'wry political commentary' and a 'social space where inferences are easily revealed' remain vague and unsubstantiated (2005: 72).

Transcognition though is not the final expression of Sullivan's position. It is reformulated in part 3 (chapter 6) so that, instead of it being purely transcognition which defines art as research, it is the capacity *to visualize transcognition* which defines it; that is to say, it is the disclosure of transition across boundaries *in visual form*, Sullivan thinks, which confirms art's research status. Visualization, he argues, 'broadens the capacity for meaning making' because it transforms its subject (2005: 197). Whether in response to an abstract idea or to an object, the process of visualization will always introduce something new: a simplification, an exaggeration, a reorganization, with the result that there is an 'opening up [of] the interpretive space between the artefact and what it might mean' (2005: 197).

Just how art as visual transcognitive practice constitutes research is set out with reference to two artists: Jayne Dyer and Nikki McCarthy, two mid-career artists living in Sydney, Australia. However, Sullivan's commentaries on them are unhelpful as examples. Although we are told that Dyer's artwork in this case is a drawing installation, it is difficult to obtain a clear sense of what the work consists of from Sullivan's description and the one black and white photograph which represents it. We are told that the 'enormous' and 'overpowering' work, titled *Site*, 'stretched from floor to ceiling over several walls of the gallery... [and] took the viewer across surfaces that were scratched, scotched, rubbed and layered with paints and chalks that traced a journey of pasts and places' (2005: 132). We learn (thanks to a quotation from the critic Joanna Mendelssohn) that Dyer 'paints her giant strips, her fragments of black, and then she rubs them down, scrapes them, reworks them, until they are aged, imperfect, and right for her purpose', but the nature of the mark-making and the material on or into which the marks are made is not disclosed (2005: 143). The representation of McCarthy's work, titled *Arrival*, is better, thanks to a clear description of its form and constituent materials, and because, as an object – an enamelled titanium dome resting upon a

circular bed of sand – it can be more easily recorded in a photograph. We are not told its dimensions though.

Where Sullivan's account of the artworks is especially disappointing though is in the description of the very qualities which the works, as examples, were intended to demonstrate: namely, how they display his transcognitive model of art research in operation. Rather than referring back to the technicalities of his model so that we can witness how his concepts might be applied, Sullivan adopts the style of art catalogue commentary: adjectives are applied and claims are made more out of the desire to produce a self-contained and impressively poetic essay than to construct a body of criticism which shows that the work has been scrutinized. For example, in the case of Dyer's *Site*, her 'traces of other times and places serve multiple ends that deny any possibility of a singular truth in the way that a morning mist cloaks yet clarifies our awareness of the landscape' (2005: 133). With McCarthy's *Arrival*, 'a mysterious arc is as much a dome and a universe as it is a dot on a painted landscape. A neon outline becomes an archetype art of a past and future existence' (2005: 135). My concern is not over the themes which Sullivan identifies. These may well be the subjects of the works, and the subjects of the works *as research*, yet Sullivan presents no explanation of how they arise as visual forms of transcognition through the works.

The one thing that can be extracted from Sullivan's account of Dyer's and McCarthy's practice, I think, is that transcognition manifests itself as the generation of possibilities. This is possibility in the sense that multiple, rather than singular, meanings are produced, so that we are left in a state of having to consider that something *may be this or may be that*, as in Dyer's traces serving 'multiple ends' and in McCarthy's dome existing as a number of possible forms: an arc, a universe, a dot. The proposal that art practice as research generates knowledge in the form of possibilities is an exciting one, and one which would seem to be in keeping with Sullivan's 'bigger picture' of the goal of knowledge being to effect change in the world (2005: 72-74); the thinking here being that a horizon of possibilities allows us to see that the world can take other forms than the one it has currently. What his model really needs is a theory of knowledge, or a metaphysics, which helps us to understand the nexus of art, possibility, and world, but

this is not given. Sullivan pays more attention than Carter to setting out the architecture of an interdisciplinary, ‘transcognitive’ model of art practice, but he still leaves us uncertain as to what form the transcognitive process takes.

Hannula, Suoranta, and Vadén on hermeneutics and verbalization

The interdisciplinary nature of artistic research occurs in Hannula, Suoranta, and Vadén’s *Artistic Research* (2005) as part of their claim that that ‘experience is hermeneutical through and through’ (2005: 44). This is a reference to the hermeneutic circle, the state of affairs in hermeneutics (the philosophy of interpretation) which acknowledges that we always access the world through a frame of reference, so that any new knowledge will always, in a circular fashion, be *of and determined by* that frame of reference. In the case of artistic experience, the artist-researcher can only use their experience to reflect upon their artistic experience. A variety of research methods, Hannula et al. argue, can help to reduce the circular nature of this situation, and make it a richer, more layered state of affairs. Drawing on Feyerabend’s assertion from the philosophy of science that (in their words) ‘the world is too diverse to be reduced to a single method... or viewpoint’ (2005: 38), Hannula et al. declare that an abundance of methodologies ensures that a range of perspectives is available to the artist-researcher, enabling the uniqueness and self-reflexivity of their experience to be articulated from different points of view.

Unfortunately, the book suffers from a lack of coherence, and this thesis is not developed. In addition, the book supplies some innovative and philosophically sound concepts for thinking about artistic research, but fails to work them into an account which represents a clear and substantial position or set of positions on the subject. The book is by three authors – Mika Hannula, Juha Suoranta and Tere Vadén – and is presented as a unified whole; that is to say, rather than chapters being attributed to individual authors, the book is offered as the work of one collective mind. However, despite the appearance of unity, the book does not function as a coherent whole; that is to say, a single, identifiable standpoint on artistic research is not provided.

For example, two related metaphors are proposed in chapter 2 as guiding principles in coming to terms with artistic research: ‘the democracy of experience’ and ‘methodological abundance’. ‘The democracy of experience’ affirms that all forms of experience should be regarded as equally valid and, on the basis of this equal validity, that it should be possible ‘to question and criticize any and all forms or areas of experience from the point of view of any other area or form of experience’ (2005: 31). On their view, the interdisciplinary or ‘multidirectional’ assessment of one form of experience by another is essential to the openness and criticality which they take to be definitive of research (2005: 33). One way in which artistic research might promote this form of interdisciplinary critique is in terms of Hannula et al.’s second metaphor: ‘methodological abundance’. As announced above, the metaphor tackles the hermeneutic circle of one method reflecting upon itself by promoting an ‘abundance’ of methods and viewpoints, on the understanding that ‘the many’ can achieve objectivity by intersecting with and checking one another (2005: 38-44). Not only does this help the artist-researcher to get beyond their own experience, but also it situates art as a form of knowledge which can engage with and critique other forms on an equal footing.

Combining the democracy of experience and methodological abundance to arrive at a hermeneutic theory of how artistic knowledge is both *possible and critical* is a particularly inventive move. But the theory and usage of the metaphors stop at the end of chapter two, the chapter which introduces them. When Hannula et al. come to nominate their five methods for artistic research in chapter 3 or to detail their five criteria for the assessment of artistic research in chapter 5, no mention is made of them. Furthermore, the five research methods in chapter 3 are described as stand-alone methods – (i) conversation and dialogue, (ii) analysis of media representations, (iii) collaborative case studies, (iv) ethnography and interventions, and (v) practice-based research – with no account of how they might intersect or cohere with one another as part of an artistic research programme in a way that would continue the hermeneutic theme from chapter 2.

Other examples of the book's disjointedness come in chapter 4. The question is posed: does artistic research require words? Every person reading this article has probably either encountered or asked this question at some point. Initially, it appears reasonably clear where Hannula et al. stand on the place of verbal language in artistic research. Verbalization is essential to artistic research, they argue, because research always brings with it the requirements of communication within a community and evaluation by a community. This is what they call 'bringing forth': the process whereby 'our thinking about practice [is] made available, so that it can change the experience of other people' (2005: 109). They list six factors which, to their minds, any model of artistic research ought to include as part of the verbal process of 'bringing forth':

- (1) clarify 'what is being researched, why it is being researched, why it is of interest and what is the aim behind it' (2005: 114);
- (2) specify 'with whom the research converses, what traditions it can be considered to be linked with, and what relations it has to these different traditions' (2005: 115);
- (3) justify 'one's own focus and viewpoint in relation to what has been said and claimed previously' (2005: 115-16);
- (4) adhere to 'known literary styles and methods of presentation' primarily in order to avoid 'narcissism and end[ing] up in an uninteresting vacuum' (2005: 116);
- (5) form a novel and substantiated conclusion (2005: 116-17); and
- (6) cultivate the nascent field of artistic research by reflecting upon how the research extends the subject, and suggesting how any future project by an artistic researcher might be informed by their work (2005: 117).

The six points are well-observed, defensible reasons for the importance of verbalization in artistic research. Sadly, however, they receive disjointed treatment on two accounts. Firstly, the process of verbalization is a principal subject of hermeneutic study on account of the negotiation that is required between the perspectives of language and experience. However, there is no attempt to consider how verbalization impinges upon the hermeneutics of experience from chapter 2. Furthermore, no reference is made back

to the methods given in chapter 3, that is, the methods of conversation, media analysis, collaboration, etc., described above. An indication as to whether or not Hannula et al. see bringing-forth contributing to these models would have helped to make their recommendations more coherent.

The second disjointedness takes the form of an outright contradiction. In the same chapter where we are told that verbalization is essential to artistic research, we are given a case study which challenges ‘the hegemony of the word’ by shunning verbalization (2005: 119). The case study is ‘a red brick of a book’ produced in 2004 by the Swedish ‘research collective and editorial team’ behind the Swedish journal of poetry and theory, *OEI*. The title of the book is *Textkonst, visuell poesi, Konceptuellt skrivande* (*Textual Art, Visual Poetry, Conceptual Writing*). In the book, ‘there is no explanation, no contents page’, no reliance on language that is extraneous or ‘not inherent’ to the artistic practice (2005: 120-21). Instead, there is ‘just the massive and wild mix between past and present ways of how artists have used book works, how they have experimented with the book format, next to which we find philosophical essays and fictional short stories’ (2005: 121). There are essays and stories which exist alongside the book works in the anthology, but as Hannula et al. point out, these pieces of writing are *not* transitive, theoretical, or distancing accounts of how the collected works represent a contribution to knowledge; in short, they are not the kind of verbalization which the authors claimed was essential for research some eleven pages earlier (2005: 110). Instead of using the example to make tangible their six reasons for the value of writing in artistic research, they simply and unhelpfully sum up the *OEI* project as being all ‘about the hybrid mix’ (2005: 123).

The same chapter offers three additional case studies of artistic research, but none are set out in a way which exemplifies the six-factor model just given. For example, Glasgow-based artist Jacqueline Donachie’s project on the genetic disorder myotonic dystrophy (titled *Myotonic Dystrophy*) has involved her collaborating with scientists in various universities over a number of years. According to Hannula et al., the work is a demonstration of ‘what all interaction ultimately can and even ought to be: a combination of aims, wishes and abilities that... can produce knowledge which can go

beyond the boundaries of each individual field', and of how 'something unique and special can emerge... [from] something subjective meeting something objective' (2005: 126). The main outcome of the project (at the authors' time of writing) is a book called *DM*, published in 2002, which tells the story of how the disorder has affected Donachie's entire family. Hannula et al. claim to recount the book's 'connection to the larger field of artistic research', yet all they provide is a biographical and anecdotal summary, with casual asides from Donachie to the effect that 'I know that I will always be an artist' and that research 'is less about what you read and a lot to do with relationships you build up in the course of developing an artwork' (2005: 129). The latter may be true, but for this to be the kind of study which exemplifies Hannula et al.'s approach to verbalization, much more detailed and systematic exposition would be required.

Because of the lack of internal coherence, no clear position or positions on the art-as-research debate emerges from Hannula, Suoranta, and Vadén. Of all the passages in the book, it is those on hermeneutics and verbalization which have the most potential to add new perspectives to the debate. It is a shame that they do not receive sustained exploration, and that the material which is presented suffers from inconsistencies. It would seem though that Hannula et al. are aware of the book's disjointedness, for they admit that 'the book contains no final summary or conclusions' (2005: 19). Yet they also claim to offer 'ideas about where artistic research could be headed and what its meaning could be to art on the one hand and to research on the other' (2005: 19). But the former cancels the latter: in order to present 'ideas about where research is headed', you need a focused and sustained account of the directions you think research is taking. As such, they are effectively disregarding factors from their own model of bringing-forth: namely, (5) forming a novel and substantiated conclusion, and (6) cultivating artistic research by assessing how their contribution extends the subject (2005: 117).

Gray and Malins on paradigms, approaches and methods

A number of factors distinguish Gray and Malins's *Visualizing Research* (2004) from the other three books. Firstly, it is the only one to give equal attention to art *and design*. Secondly, it is the most 'hands on', aiming 'to guide postgraduate students in art and design through the research process' and offering a step-by-step, chapter-by-chapter plan of how to organize an art and design research project. Thirdly, Gray and Malins are the only authors who do not adopt a theoretical or epistemological position on the status of art and design as research. Whereas Carter and Sullivan promote interdisciplinarity, and Hannula et al. assert the importance of hermeneutics and verbalization to artistic research, Gray and Malins seem content merely to lay out the various options that the art or design researcher might take. They make no claim with regard to which options are likely to grant art and design research its greatest impact within the arts and humanities at large, nor make any commitment to the cognitive nature or value that should inspire and guide art and design research. The theme of visualization (from the title *Visualizing Research*) does not denote a thesis on the importance which translating non-visual material into visual form might have for artistic research (as in the case of Sullivan's visual transcognition), but is instead a much more prosaic reference to the large number of diagrams which they use to configure graphically various research processes. The nearest Gray and Malins come to declaring a position is in their assertion that 'a pluralist approach and the use of a multi-method technique, tailored to the individual project' are 'characteristics of "artistic" methodology' (2004: 72). It is on the strength of this claim that I am suggesting they share a commitment to the interdisciplinary thesis, since a multi-method technique will be obliged to consider how the results of one method intersect with those of another. But this is only hinted at. Effectively, they say: 'here is what is possible, now you decide'. The one problem which arises from this lack of an explicit, active position though is that there is no concept or judgment to act as a guide when one is faced with the questions which appear once one commits to a method or when one combines methods. Let us consider some of the questions raised by the book.

The element which represents the book's most valuable contribution to practice-based research, I think, is Gray and Malins's arrangement of possible methodologies in terms of (i) paradigms (chapters 1 and 3), (ii) methodological approaches (chapter 3), and (iii)

methods (chapter 4). The value of this arrangement is that it makes the practitioner aware that different levels of decision-making are involved in the design of a research programme, from the choice of a paradigm to the selection of research methods. Given that Gray and Malins identify five paradigms, five approaches, and fourteen methods, the prospect of a matrix of (5 x 5 x 14) 350 possible ways of doing art and design research comes to mind. But this is not the line that they take. Rather, they describe paradigms, approaches and methods to indicate the possibilities that are available, and to stress the importance of identifying the most appropriate combination of elements for the research programme in question. Methodology, they maintain,

should be responsive, driven by the requirements of the practice and the creative dynamic of the art or design work. It is essentially qualitative, naturalistic and reflective. It acknowledges complexity and real experience and practice – it is ‘real world research’...

(2004: 72)

I think all these statements are true, but are they helpful? In my experience, one of the largest problems encountered by practice-based research students and supervisors is knowing how to locate ‘the creative dynamic of the art or design work’ within a research context. This is because the art or design work is often *so* dynamic, *so* complex, with *so* many requirements, that it is very difficult to know how to respond, to determine which methodologies are the most responsive.

Let us look at this more closely. Even though Gray and Malins do not formalize their paradigms, approaches and methods as a ‘matrix’, I shall nevertheless use the word, since it captures the array-like quality of their research overview. While their accounts of the three levels are informative and clearly described, they omit to offer any assessment of the connections and implications that occur between the levels. To give an example. The first level of Gray and Malins’s matrix is the paradigm: the set of epistemological and ontological preconditions or assumptions held by a research community which determines respectively what counts as knowledge or knowable, and what the nature of reality is taken to be for that community. Drawing on Guba (1990), they identify five

paradigms within twentieth-century thought: (1) positivism: there is an external reality which can be known directly through empirical measurement and verification; (2) post-positivism: there is an external reality but the perspectival nature of our perception means it can never be known directly, and so we must rely on multiple viewpoints and an expanded critical attitude; (3) critical theory: reality exists but, again, the perspectival nature of perception means it can never be known directly, and so insight is sought through critiquing the concepts and values at work in knowledge; (4) constructivism: reality exists as a mental or social construct, and knowledge is created through coherence or interaction between perspectives; and (5) the artistic paradigm, but this, Gray and Malins acknowledge, is still under development by the art and design research community (2004: 19-20).

Which paradigm should an art or design researcher adopt as the set of conditions which will determine what is accepted as knowledge? Gray and Malins turn to Guba again who (in their words) maintains that:

methodology is evolved through an awareness of what the researcher considers 'knowable' (what can be researched – what questions can be answered by research), and through an awareness of the nature of the relationship between the researcher (you) and the 'knowable'.

(2004: 71)

I am not convinced that this helps the situation, since it simply replaces one philosophical question – 'Which paradigm do I select as the epistemological basis for my research?' – with the question 'What is knowable?'. In order to answer 'what is knowable?', one will need to have a sense of what knowledge is, how it is formed, and what relationship the knower has with the 'knowable'; in other words, one will need a paradigm. So Guba's advice, as interpreted by Gray and Malins, simply leaves us back where we started, having to consider different theories of knowledge.

Is one paradigm more suited than another to promoting art and design research? Philosophically, the question is vital, since it cannot be simply a question of just

choosing whichever paradigm fits. Art and design are not episodes 'after the event', where the event in question is the formation of paradigms, with paradigms hanging in a line waiting to be picked. Rather, art and design are subjects, activities and commitments whose scope and impact have been formed as part of the history of ideas from which Guba's list of paradigms is drawn. That is to say, the view one has of the nature and meaning of one's practice as an artist or designer is intimately bound up with concepts of knowledge and reality as they are made available to us within the history of ideas. For example, it could be argued that an art or design PhD should, to a greater extent, be conducted from a constructivist position, since its emphasis on the social construction of reality affords the greatest scope for acknowledging the impact which artists and designers have in forming the world. A positivistic paradigm, the same argument might run, will be inclined to restrict the respects in which art and design can contribute to knowledge because, as Sullivan has already indicated, it will only acknowledge those aspects of art and design which are amenable to measurement and verification.

The question of paradigm choice is ultimately dealt with by Gray and Malins informing the reader that 'it is important to consider these issues and the implications they have for how you structure and describe your research proposal', and by implicitly endorsing the post-positivistic paradigms (2004: 72). The endorsement comes as part of their five methodological approaches, the second tier in their research matrix. These approaches are effectively ways of determining 'what can be researched [and] what questions can be answered by research' (2004: 71). Given that the concept of 'what can be researched' rests upon the concept of 'what is knowable', one's choice of methodological approach effectively becomes a commitment to a paradigm. And in offering these five methodological approaches, Gray and Malins promote the 'new paradigm research' or post-positivistic research from Denzin and Lincoln's *The Landscape of Qualitative Research* (1998), which includes overviews of 'critical theory, cultural studies, and feminist research methodologies' (2004: 92). This emphasis on post-positivism is not too controversial though, since it is the capacity of these paradigms (I am including critical theory, constructivism and the artistic) to acknowledge the quality of experience and the way in which experience, knowledge and the world are determined by interpretation that is valuable to the formulation of practice as research.

The five methodological approaches offered by Gray and Malins on the second tier of their matrix can be roughly divided between those where the context is determined by the practitioner, and those where the context is provided by an existing situation in the world in which the practitioner becomes involved. The practitioner-determined approaches are: (1) naturalistic inquiry (from Lincoln and Guba 1985, and Bunnell 1998) which happens ‘in real situations rather than in laboratory-controlled conditions’ and where the research strategy ‘unfolds from the practitioner’s interaction with the research question and context’ (2004: 72); and (2) working in the manner of the *bricoleur* ‘between and within competing and overlapping perspectives’ in order to create an ‘emergent construction’ that (in the words of Denzin and Lincoln, quoted by Gray and Malins) ‘represents the researcher’s images, understandings, and interpretations of the world’ (2004: 74). The situation-determined approaches are: (3) the diagnosis and solution of a problem ‘in a specific real-world context’ through action research, with ‘the co-operation of the inhabitants [or] participants of the potential action context’, for example, social reform, occupational therapy, product design (2004: 74-75); and (4) the soft systems methodologies developed by Checkland (1981) which involve systems users ‘in explorations of, and debate about, their system, which could be any kind of complex, changing situation or context’ (2004: 75). The final approach, (5) inquiry by design, sits between practitioner- and situation-determination on account of its focus on the design process. Design, it is argued, is a form of research in itself, due to the similarity between the ‘spiral structure’ of the design process – “‘imaging”, “‘presenting”, “‘testing” and “‘reimaging”” a design – and the research process of ‘raising a research question and developing a working proposition; developing and presenting an argument; [and] testing and evaluating it’ (2004: 76).

While these methodological approaches have been introduced by Gray and Malins as the means by which to determine ‘what can be researched [and] what questions can be answered by research’, their account does not explain how the approaches they describe create this sense of direction and achievability (2004: 71). With the practice-determined approaches, it will be up to the practitioner, their supervisory team, and their methodological approaches to decide what can be researched. However, it is not made

clear how naturalistic inquiry or *bricolage* might generate answerable research questions. All that is suggested is that (in relation to naturalistic enquiry) methodologies are ‘emergent’ from the research context (2004: 72), which is unhelpful given that the research context is the thing we are trying to design, and that (in relation to *bricolage*) the choice of research practices ‘depends upon the questions that are asked, and the questions depend upon... what is available in the context’ (Denzin and Lincoln, quoted by Gray and Malins 2004: 74), which is unhelpful for similar reasons. While it is undeniably useful, and possibly liberating, to learn that research can be designed along the lines of naturalistic inquiry or *bricolage*, the fact that the nature of both is claimed to arise from the ‘research context’ (which will be shaped by one’s methodological approach) means that Gray and Malins’s accounts of these practice-led approaches are effectively circular.

The situation-determined approaches fare a little better, but are still problematic. They fare better in the sense that the situation brings with it a problem to be solved. However, the danger is that the ‘research’ which results might *only* amount to problem-solving, where the ‘only’ indicates that the solution is a local, problem-specific one and does not have the ramifications necessary to qualify as new ‘global’ or subject knowledge. The local–global distinction is extremely problematic, and cannot be addressed fully here, other than to acknowledge the response included in the United Kingdom’s Research Assessment Exercise 2008 definition of research. This translates the local–distinction into the difference between ‘routine analysis’ and ‘new or substantially improved insights’ respectively (HEFCE et al. 2005: Annex B). Given that analysis, by definition, generates findings, we are faced with the question: at what point do findings stop being ‘routine’ and become ‘substantial’ and ‘insightful’? This question though is not addressed by Gray and Malins.

The third and final tier in Gray and Malins’s matrix is ‘research methods’: the means by which evidence is gathered for the knowledge-claim made by the thesis. To adopt Gray and Malins’s analogy: if your research project is pictured as a ‘route across the terrain of your chosen research area’, then your research methods are your ‘vehicles’ for ‘crossing the terrain’ (2004: 99). They identify fourteen methods: (1) practice, (2) observation, (3)

visualization, (4) photography, (5) video, (6) sketchbook, (7) maquettes, (8) reflective journal, (9) audio reflection, (10) 'sweatbox' or master class video documentation, (11) case study, (12) interview, (13) questionnaire, and (14) personal constructs. I do not have the space to go into detail other than to congratulate Gray and Malins for creating a list of methods which, although 'by no means definitive or *completely* comprehensive', as they admit, nevertheless deserves to be recognized as comprehensive (2004: 103). It is far more comprehensive than Hannula et al.'s five-point inventory of research methods (2005: 67-108). The only omissions I am aware of in Gray and Malins's list are: (a) ethnography, which is described by Hannula et al. (2005: 92-95); (b) autoethnography (the use of one's own experience as the basis of research, as explained, for example, by Bochner and Ellis 2002, Etherington 2004, Reed-Danahay 1997); and (c) a method, or a series of methods, which acknowledges the contribution that art and design theory can make to practice.

In keeping with their standpoint of saying 'here's what is possible – now you decide', Gray and Malins leave the question of method-choice to discussion between the researcher and their supervisor (2004: 103), although they do recommend a multi-method approach (which could equate to the *bricoleur* approach from their second tier, but the connection is not made) on the grounds that 'the more information we have from varying perspectives, the more able we are to test our ideas and eliminate bias that might arise from each method' (2004: 121). This is arguably the nearest we get to the assertion of a position in the art and design research debate from Gray and Malins. But to see this through, they would have needed to identify and describe some of the relationships that can be formed between the various methods they outline.

The book suffers from worse problems than the lack of position though, according to Love (2006). In his damning review (published in *Design Research News*, the newsletter of the Design Research Society), Love finds the book to be dominated from start to finish by sophistry: (in Love's words) the deliberate attempt 'to deceive or persuade readers to the authors' position through false reasoning, bad syllogism, and biased or manipulated evidence'. The whole book, he argues, is built around the fallacy of the excluded middle. This is the fallacy which proceeds along the lines: (1) 'All cats have four legs'; (2) 'All

dogs have four legs'; therefore, (3) 'All cats are dogs'. In terms of art, design and research, Love asserts, the fallacy is committed by Gray and Malins in the following way: (1) 'Research can be thought of in terms of a journey'; (2) 'Art and design practice can be thought of in terms of a journey'; therefore, (3) 'Art and design practices are research'.

But I am not convinced that Love's charge of the excluded middle fallacy can stand. Gray and Malins do not claim to argue deductively, that is to say, they do not try to establish their conclusion – the status of art and design as research – on the *logical* basis of both research and visual practice being members of the class 'journey'. Interestingly, Love does not cite page numbers for where Gray and Malins commit the fallacy *logically and explicitly*. This is because there is no such occasion in the text. Rather, Gray and Malin's reasoning is *analogical*: the legitimate procedure of asserting that if two objects are alike in some respects, then they may be alike in other respects. As Juthe observes, taken as logical deductions, the conclusions of argument by analogy do not follow, yet they allow 'the inference from particular to particular' (Juthe 2005: 24). It is the inference from one kind of thing to another which makes argument by analogy 'usefully suggestive' (Flew 1979: 11).

'Suggestive' is the key word here. One customarily appeals to argument by analogy not because one wants to reach an immediate conclusion, but because one wants the existence of one similarity to be the prompt or the motive to look for further similarities. And this is Gray and Malin's intention. Their reliance on the 'journey' metaphor is based on the understanding, from theorists such as Lakoff and Johnson (1983) and Ortony (1993), that metaphor and analogy are fundamental to the way we perceive and organize the world, especially in regions of experience which are new or unfamiliar (2004: 2). The error in Love's reading of Gray and Malins occurs when he writes: 'they assume that both visual art practices and research can be conceived of in terms of a shared metaphorical property, a journey. *They next assume* that this implies that visual art practices and research are similar. This is the fallacy of the [excluded] middle' (Love 2006; emphasis added). Although Love says 'they next assume', they do not in fact make any assumptions at this point. Instead, they explore their 'journey' analogy by

considering the various respects in which the journey-aspects of research can be applied to visual practice, as demonstrated by chapter titles such as 'Planning the journey', 'Mapping the terrain', and 'Interpreting the map'. 'Considering respects' is not the same as 'assuming'. In accusing them of committing the fallacy of excluded middle, Love overlooks the legitimacy of argument by analogy, and the generative role it can play in making inferences from one object to another.

However, where I do concur with Love's criticism is with regard to Gray and Malin's 'journey' metaphor. The problem is not with the logic that surrounds the metaphor, but with the metaphor itself. As Love maintains, it is too loose and encourages 'conceptual slackness'. For him, the slackness is at its greatest in chapter 5 on methods of evaluation and analysis. It takes the form of 'a complete lack of discussion on the role of reasoning or the study of causal relationships and explanation' (Love 2006). In terms of my criticism of the book, it is the ongoing problem of Gray and Malins omitting to provide any guidance on how a researcher might select appropriate approaches and methods for their work. They make the reader aware that criteria for evaluation 'are the means by which we focus, capture and distil value and meaning' and the means by which we 'make sense of research outcomes' (2004: 131). 'But how', they ask, 'do we know [which criteria] are appropriate?'. Their answer: 'the best way is to try them out!' (2004: 131). Once again, we are back with the sentiment: 'here's what is possible – now you decide'. This is not helpful advice for someone starting a practice-based research programme. The 'journey' metaphor makes it too easy to say 'Try going here or there; try this criterion or that', when what is really needed is thorough consideration of the factors which determine appropriateness at all levels of the research matrix.

Without a doubt, Gray and Malins succeed in constructing a near-comprehensive overview of the paradigms, approaches and methods that are available to art and design research. Their matrix will be valuable in encouraging researchers to reflect on the various choices and commitments which have to be made in designing an art or design research project. But as I have indicated, each decision regarding the paradigm and the approach to be adopted faces questions concerning the way in which art and design operate as research, for example, the questions of paradigm-appropriateness and of how

an approach, say that of the *bricoleur*, might actually steer research. These are not just theoretical concerns, but questions which will occur in practice for the researcher. As I state above, sometimes the art or design work is *so* dynamic and complex that it is difficult to know how to frame them within a methodology. But these kinds of question are not addressed in the book.

On the generation of knowledge through interdisciplinarity

All four studies of practice-based research point us in the direction of art's inherent interdisciplinarity. This is not just an aspect which the four happen to share. It is the claim which is pivotal to the theories of knowledge operating either explicitly or implicitly in all of the books. Unfortunately, the one tantalizing element in all of this which we are denied is an answer to the question: how does interdisciplinarity create knowledge? How does the examination of one set of objects or practices from a new, alternative perspective generate insight? Is it *simply* a case of seeing something differently, from a different point of view, and recording the perceptions which are had? I don't think so. I don't think we can talk about 'simplicity' here, for the act of looking at something from a point of view that is 'extra-disciplinary', that is external to the discipline as it is conventionally exercised, raises questions about the conventions of looking and, in particular, what counts as appropriate looking. This is not a call for the policing of disciplinary boundaries, but a drawing-attention-to the need for an account of how it is that a perspective from outside a discipline, something that is *inappropriate* by definition, can nonetheless be regarded as something which can generate new understanding, something that is presumably *appropriate*.

It is beyond the scope of this paper to pursue these questions in depth. However, I would like to make one suggestion briefly. Some progress might be made in fathoming how interdisciplinarity creates knowledge if we turn to the theory of knowledge advanced by Immanuel Kant. Experience, Kant argues, is never simply had or received, but is always shaped and determined by concepts, is always 'under a description'. For example, I am able to perceive a cup against the background of a table because the

concepts ‘cup’ and ‘table’ are active within my experience. In addition, Kant suggests that, as human beings, we have some freedom in exercising the concepts which are responsible for shaping experience, and that this freedom is necessary to accommodate the variety of forms we encounter in the world. There are two important points here for the interdisciplinary debate: (1) the contents of experience are always shaped by concepts within our experience, as opposed to being things which we merely have or receive pre-formed; and (2) there is scope for transforming the nature of the contents of experience by adopting different concepts.

How do these points help us? Where Kant talks of concepts, we can talk of disciplinary perspectives or cognitive viewpoints. His ‘concepts shape reality’ thesis impresses upon us the notion that, in adopting a new, extra-disciplinary perspective, the way things appear to us will change; objects will be falling under new descriptions. However, any research novelty we might want to draw from this situation will derive not from the fact that there are new descriptions; these are simply the consequence of a second disciplinary perspective being in operation. Rather, the research value will come from studying the changes in perception which occur with the move from one description to the other, from one disciplinary perspective to the other. It is not simply the case that we leave one way of shaping experience and move to another; it is the tension between the two that is decisive for our purposes. If one is in a context where concepts or perspectives shape the contents of experience, then adopting a new perspective means that the contents of your experience will change *and change in ways which may be surprising*. New, additional concepts – concepts that fall between the two disciplinary perspectives – may have to be introduced in order to make sense of the transition. Metaphors may have to be coined if conventional, literal descriptions cannot accommodate the transition state that is before us. It is what comes to light in the move from one perspective to the other that is the source of new interdisciplinary knowledge, on this Kantian model.

Let’s consider an example: a practice-based examination of the opposition between creativity and determinism within photographic technologies. This is research currently being undertaken by PhD student Mark Elmer at Cardiff School of Art and Design in

Wales, UK. According to Vilém Flusser, the medium of photography is confined by the settings made available by the camera (Flusser 2000). Elmer wants to challenge this claim. His intention is to identify and explore creative and critical spaces within photographic technology. In terms of the accounts reviewed in this article, Elmer's project is interdisciplinary in the sense that he is examining how photographic practice might intervene in a theoretical debate regarding technological determinism. The particular interdisciplinary occasions where novelty might arise, on the Kantian model, will be when the concepts and perspectives Elmer exercises as a photographer, on the one hand, have to engage with concepts and perspectives from the philosophies of photography and technology, on the other.

What form might these occasions take? In the first instance, I suggest that they will be questions which starkly combine the two perspectives, such as 'How can the mechanics of the camera become manifest in a photograph?' and 'How can the contrasting values of creativity and determinism be applied to a photographic image?'. These are potent questions for Elmer's research. They are also difficult ones. What would count as examples of camera mechanics being manifest in a photograph? Can the creativity–determinism opposition, which applies to technology, be applied to images? Difficult questions such as these should be embraced in a research context though, since responses to them, whether they are direct replies or ways of rethinking what is asked, will be exemplary forms of enquiry operating between two domains, working through how the possibilities of one impact upon the demands of the other. For Elmer, the questions are rich in suggesting: (i) ways in which the construction of photographs might be approached, (ii) criteria for the selection of appropriate case studies (the photographers John Hilliard and Steven Pippin, perhaps), and (iii) vocabulary which can be used in the selection of photographs for discussion and reference by Elmer.

All three avenues, I anticipate, will lead to discourse which, rather than remaining tied to the photography–determinism relation, will include new, in-between categories, for the simple reason that reality surprises us. Kant's model of concepts determining the content of experience does not amount to experience being reduced to concepts. Concepts determine experience, but experience exerts its own counter-pressure. In

exploring the relation between photographic practice and technological determinism, objects and options will be encountered which exceed the two starting terms of the relation. These might come, for example, from metaphors that are used in describing 'mechanical' photographs, or from the considerations which emerge once Elmer tackles the practicalities of creating an entirely 'mechanical' photograph, whatever this might be. It is through recording these metaphors and considerations, assessing how they might be worked into his future photographic practice, and, in turn, forming judgments on the resulting images that Elmer's research will proceed.

In terms of the possible future development of the interdisciplinary thesis, it has the potential to draw on the field of metaphor studies for accounts of how interaction between subjects can generate knowledge. Metaphor is traditionally described as a linguistic or poetic device in which one thing is described as something else, for example, time is a river. However, in recent decades, it has been recognized to operate beyond verbal language and to be active as a cognitive principle, where the process of relating one thing to something else is judged to be essential to the way we organize the world. There is extensive literature in the field which may prove useful in articulating the significance and impact of art's inherent interdisciplinarity, for example, Gibbs 1994; Lakoff and Johnson 1999; Ortony 1993. Metaphor theory has a Kantian dimension too. Philosophical studies of how metaphor creates new knowledge through the interaction between perspectives, all with reference to Kant, are available from Black (1979: 19-43), Cazeaux (2007: 13-34), Hausman (1989) and Ricoeur (1978: 216-313).

So, if we are to heed the direction set by all four books in this review, then the field of practice-based research should be looking to cultivate and to promote the inherently interdisciplinary nature of art. Although the books (with the exception of Gray and Malins) concentrate on art rather than design, it could be argued that design shares this nature, although it might manifest itself differently. Either way, the process of working between subjects or disciplines creates, and arguably necessitates, occasions for negotiation between domains, and it is the tangled network of resistances and new possibilities which emerges from the negotiation, in the form of artefacts and commentary, wherein the value of practice-based research lies.

The books deserve acknowledgment for introducing or alluding to the ‘interdisciplinarity’ thesis, but they also court disappointment for not going far enough in explaining how interdisciplinarity creates knowledge. For Carter, working across disciplines creates a ‘hither and thither’ of discourse, ‘materialised in the making process [as] an intellectual to-and-fro’ (2004: 9). But we do not get to see what form this toing and froing might take. Sullivan defines art as visual transcognition. Art, he declares, can produce knowledge that is ‘individually and culturally transformative’ on account of its combination of visual, interpretive, empirical and critical forms of knowledge. Sadly, just how the transcognitive process produces transformative knowledge is not described by him. No outright position is articulated by Hannula, Suoranta, and Vadén, but they hint at interdisciplinarity. They appeal to the fundamentally hermeneutic nature of experience, one mode of interpretation engaging with another, and suggest that artistic research should involve a layering of various research methods (2005: 38). But the technicalities of a hermeneutics of experience, and how it might support a layering of methods, are not explored. Finally, during their description of the paradigms, approaches, and methods available to practice-based research, Gray and Malins recommend a multi-method approach (2004: 121). If we take this to be their *bricoleur* approach, it would be a mode of enquiry working ‘between and within competing and overlapping perspectives’ in order to create an ‘emergent construction’ that embodies ‘the researcher’s images, understandings, and interpretations of the world’ (2004: 74). No explanation is given though of how an interpretation can ‘emerge’ through *bricolage*.

One source which can support the notion of interdisciplinary knowledge generation, I have suggested, is Kant’s theory of knowledge. On this view, concepts determine the content of experience, and the interdisciplinary tension between concepts creates occasions for new judgments and observations to be made. I have provided a brief account of how this theory might apply to practice-based research. A fuller study must remain the subject for another paper.

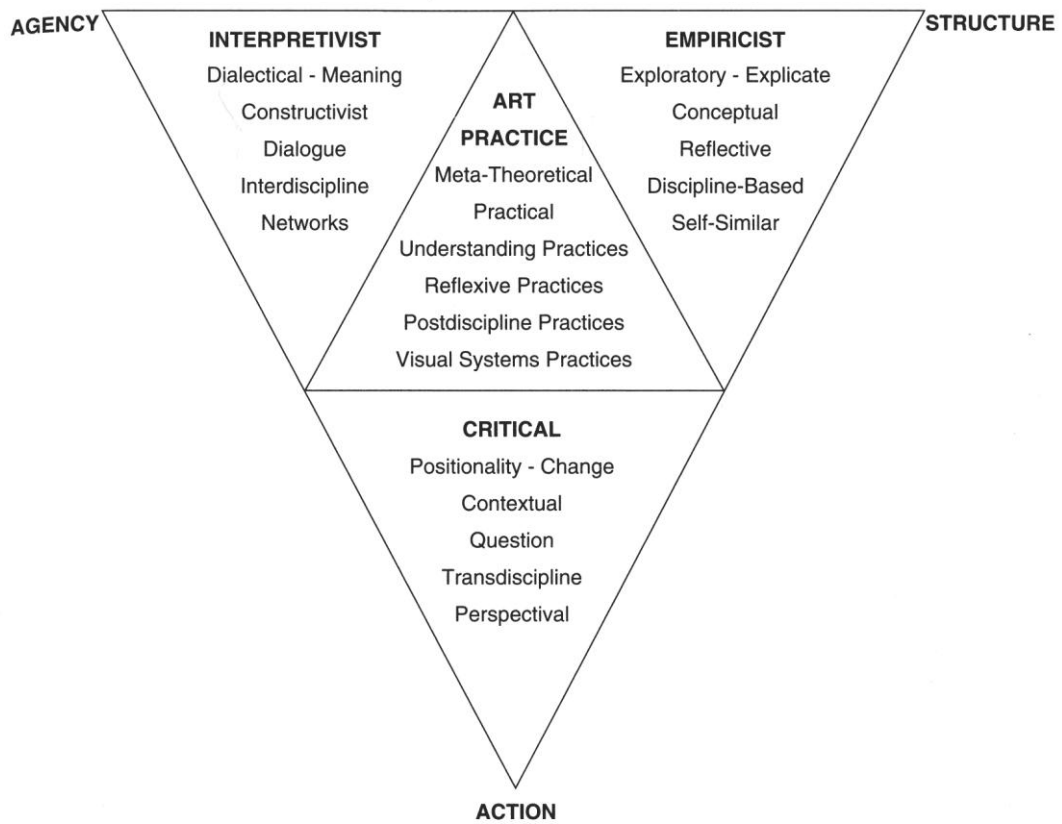


Fig. 1. Sullivan's transcognitive visual arts research framework (2005: 95). Reproduced with permission from Graeme Sullivan, *Art Practice as Research*, Copyright (© Graeme Sullivan, 2005), by permission of Sage Publications Ltd.

For inclusion on p. 16, near the paragraph which starts: 'Some clues as to how understanding is being formulated...?'

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