

Chapter 8

The 'Epistemic Object' in the Creative Process of Doctoral Inquiry

Carole Gray, Julian Malins and Maxine Bristow

Introduction

Within the framework of practice-led¹ doctoral research in the Art and Design sector, there has long been debate about the role of the artefact/creative works in the process of inquiry and in the final submission for Ph.D. examination. Their status can be ambiguous and the concept of 'exhibition' is – we would argue – problematic in this context.

Therefore, we want to suggest an alternative way of considering the role of artefacts/creative works in a doctoral submission, by discussing the liberating concept of 'epistemic objects' – their possible forms and agencies, and the alternative display/sharing of the understandings generated from these through 'exposition' not exhibition.

Whilst our experience and expertise lies within the sector of Art and Design, we suggest that some ideas in this chapter may resonate and be relevant to other creative disciplines in the revealing and sharing of doctoral research outcomes. This process can be difficult and provoke many anxieties for the practitioner-researcher and their supervisors, so some clarity on this might help everyone involved in the examination of doctoral work to approach it with integrity and confidence, and see it as a valuable learning experience for all involved.

From exhibition to exposition

In 1992 Allan Watson completed one of the first practice-led Ph.D.s, for which one of the co-authors of this chapter was the main supervisor. Watson's thesis, as argument, comprised:

- new three-dimensional work generated by choice and chance;

- a digital database of concepts, processes and materials called ARP – Art as Random Process;
- an illustrated written text articulating the process of inquiry, its context and contribution to knowledge.

The Ph.D. examination partly took place in a studio, where the artefacts created through this inquiry were displayed.

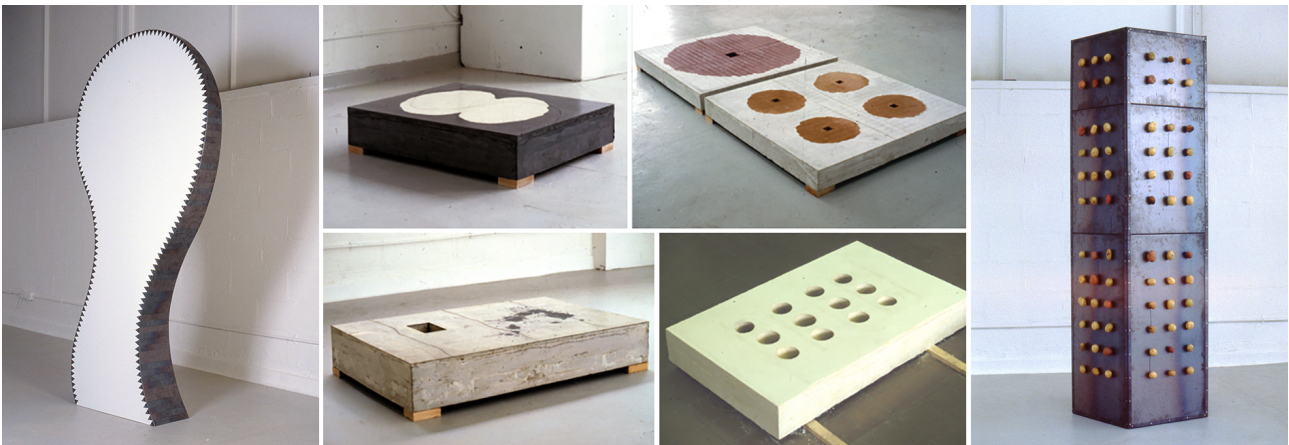


Figure 1: Artefacts presented in a studio setting (Source: Allan Watson 1992).

These artefacts visualized and embodied the research concepts, and most importantly enabled a direct almost somatic experience of his argument through materials in space. For want of appropriate language to name this display, the candidate and supervisory team fell back on the known word ‘exhibition’ – although we knew intuitively this was something else.

It was not until eleven years after Watson’s Ph.D. completion (and numerous others) that the first serious consideration of the role of the artwork in research was undertaken. In 2003 Michael Biggs proposed that in order to communicate this effectively, control must be exercised by providing a context for viewing/engaging. Biggs studied archaeological and museum display strategies, and drew on Peter Vergo’s writing about *The New Museology* (1989). Vergo contrasts ‘aesthetic’ exhibitions with ‘contextual’ exhibitions. The former might have minimal additional information other than the artefacts themselves, and the process of understanding them is largely experiential and personal. In the latter

artefacts are complementary to some accompanying 'informative, comparative and explicatory material' (Vergo 1989: 48). Biggs says:

If the aim of research is to communicate knowledge or understanding then reception cannot be an uncontrolled process. The interpretation of embodied knowledge presented in an un-contextualised way is an uncontrolled process. (Biggs 2003: n.pag.)

Therefore, clearly in a doctoral submission the context for a display of artefacts and its careful construction and control is crucial in its reading and reception. Vergo's concept of contextualized display was given a new digital publishing framework through the establishment of the online *Journal for Artistic Research* (2011). The contributions to the journal are named as 'expositions', in an attempt to get away from the orthodox notion of 'article' or 'paper'. Examples in the various journal issues to date take a range of formats – most highly visual and some interactive, accompanied by appropriate written material. Similarly the *International Journal of Education Through Art* publishes 'visual essays', which attempt to communicate inquiries through annotated visuals.

In the context of creative doctoral inquiry, the term 'exposition' seems very appropriate, as its suggestion of exposure and explication matches very well the key characteristics of good research – accessibility, transparency, transferability (in principle if not specifics). Anne Douglas suggests that an exposition should reveal 'stages of research thinking, diagrammatic mapping of the evolving research process and its evidence in product, evidence of failure and changes of direction' (Douglas 1997: 20). Exposition events might be a regular feature throughout the doctoral inquiry, thus helping to acquire and exercise the skills needed later in the doctoral submission for Ph.D. In contrast to the 'exhibition', if we accept that the role of 'exposition' in creative inquiry is the revelation of methodology – the laying bare of the process of inquiry – then this does not necessarily require the display of completed or resolved artworks.

We would argue that in the process of any inquiry, it is crucial to track and capture (through various means) starting points, developments, changes of direction, critical moments of understandings and misunderstandings, and analytical reflections. There

might be a spectrum of artefacts generated – some significant, some modest, some even deemed as ‘failures’ – as Paul Feyerabend in his book *Against Method* says, ‘failures are pre-conditions of progress’ (Feyerabend 1998: 164). This spectrum of artefacts might visualize, materialize, embody, speculate on aspects of understandings about the focus of the inquiry. If these artefacts are not ‘artworks’ – what are they?

Epistemic things’

Hans-Jörg Rheinberger gives us the liberating term ‘epistemic things’. A focus of his 1997 book is the basic question of how novelty is generated in the empirical sciences. He argues for the primacy of the material arrangements of the laboratory and develops a new epistemology of experimentation, in which research is treated as a process for producing epistemic things. In a more recent book he says: ‘An experiment [...] is an exploratory movement, a game in which one plays with possible positions, an open arrangement’ (Rheinberger 2010: 247). For an epistemic object to have the potential to develop scientific research, it must embody a degree of uncertainty to be useful. He asserts that epistemic things ‘are by nature made to be surpassed’ (Rheinberger 2010: 222).

The sociologist Karin Knorr-Cetina has carried out long-term (over 30 years) studies at CERN Switzerland, examining how theoretical physicists worked with each other (Merali 2010). Knorr-Cetina identified the laboratory as the site of knowledge making. Later in her ‘Objectual Practice’ chapter (2001), her argument is expanded and the term ‘epistemic objects’ elaborated. These are described as being characterized by the ambivalence of their ontological status as knowledge bearers, being both stable and mutable at the same time. They are stable in the sense that they comprise what the inquirer currently knows so far; and mutable in the sense that they are incomplete and ‘open’, allowing for further exploration by the creator and/or others towards new knowledge making. Francis Crick and James Watson’s 1953 materialization of the structure of DNA using a retort stand, metal plates and rods joined with electrical connectors might be considered an epistemic object.²

This openness or ‘lack in completeness of being’ gives the epistemic object a ‘capacity to unfold indefinitely’ (Knorr-Cetina 2001: 181). There are resonances here with what

Umberto Eco in 1962 called 'the open work', in that openness encourages engagement and interpretation. However, it does not mean that the originator (practitioner-researcher) relinquishes all control, rather s/he presents a framework within which various insightful encounters might occur (and this is taken up later in the chapter in relation to doctoral exposition).

An architecture company was the focus of Boris Ewenstein and Jennifer Whyte's study of knowledge practices in design (2009). In close observation of architects working together, the authors identified various forms of epistemic objects, from abstract concepts to concrete things, including sketches, drawings, plans, charts; photographs; project management tools – timelines, schedules, tables; virtual prototypes, scale models, and even machines and parts. They say that '[t]he object's effectiveness is defined by the context in which it needs to perform' (2009: 4). The way the team of architects worked with epistemic objects involved multiple iterations, re-workings, layerings – 'a veritable palimpsest of ideas and exploratory markings' (2009: 21). In this particular context, epistemic objects were enabling the negotiation and mediation of knowledge from different participants.

A more recent example of this process comes from Julian Malins' and Nil Melehat Gulari's design research generating innovation in small-to-medium enterprises (2011). In focus groups, individual employees select 'core value' cards – a given set of random images – to visually express particular values that they each associate with their company. This often reveals divergent perceptions of corporate identity and perceived goals, thus prompting discussion. Then through group dialogue around the images, each group negotiates an agreed set of core values, reflecting possible new future strategic company aspirations towards innovation. Depending on the group dynamics and different individual who take part, the underlying context for this process is 'open' and constantly changing, thus providing opportunities for new thinking.

Christof Richter and Heidrun Allert's research (2011) highlights the epistemic roles artefacts play in creative design and knowledge creation, in this particular example – engineering and design education. As in the architectural example, they identify similar forms of epistemic objects: notes, sketches, models, prototypes, simulations and

storyboards. Richter and Allert assert that ‘the epistemic role of artefacts is under-articulated and often limited to the idea of artefacts as mere carriers and representations of information’ (2011: 103). Rather, they propose that artefacts should be understood as ‘epistemic instruments capable to frame, explore, catalyse, inquire [...] probe and assess ideas’ (2011: 103). So the role of such ‘knowledge artefacts’ is not to represent what is already known, but on the contrary, to come to terms with what is not yet known. The epistemic object is defined by what it is not (or not yet) as much by what it is.

They cite Henrik Gedenryd’s 1998 Ph.D. thesis, in which the term ‘inquiring materials’ is introduced as the capacity of artefacts to generate new insights and in themselves be ‘productive things’. In this respect Antonio Gaudi’s stereostatic model for the Crypt of the Church of Colonia Güell (1898–1914) brought together a set of inquiring materials – a wooden board, cords, cloth, pellets, photographs. From each catenaric arch (formed by hanging the cords from the board) small sacks of pellets were suspended. The structure was photographed. The final shape of the church’s future architecture was revealed by turning one of the photographs upside-down– indeed a productive thing.³

Finally, Henk Borgdorff explores ‘Artistic practices and epistemic things’ (2012) that is the result of a conversation with Hans-Jörg Rheinberger. Picking up on the latter’s ideas about the dynamics of experimental scientific practice, Borgdorff considers how knowledge is constituted in and through practice in the context of artistic discovery. He says: ‘Epistemic things are [...] hybrid forms in which thinking and things are interwoven’ (Borgdorff 2012: 191). This has resonances with Paul Carter’s ideas in his book *Material Thinking* (2005). Focusing on the processes of creative/artistic collaborations, he uses the term ‘cross-weave of thought’ (2005: 5) out of which emerges a third apprehension, constituting ‘material thinking’. This concept recognizes the ‘creative intelligence of materials’ (‘Preliminary Matters’, XIII) in which ‘matter becomes mobile’ (2005: 182) and is ‘promiscuous, eager for recombination’ (2005: 188). Borgdorff (2012: 194) also considers artworks to be ‘generators of that which we do not yet know’ inviting us to think and thereby are epistemic agents.

Recent thinking on the concept of exposition

With these important contributions in mind, we now want to return to the concept of exposition as a means of revealing the process of inquiry for a doctoral submission. In their book *The Exposition of Artistic Research: Publishing Art in Academia* (2014), Michael Schwab and Henk Borgdorff put forward a new relationship to knowledge, where 'the form in which this knowledge emerges, and the mode in which it is communicated, makes a difference to what is known' (cover notes). Focusing on the possibilities for 'publishing', the book offers perspectives on 'exposition' from a range of practitioners and thinkers in art and the performing arts (e.g. music, dance, drama, etc.) on various approaches to exposing 'practice as research'. Building on this, in the editorial of issue 7 of the *Journal of Artistic Research* (JAR), Schwab offers a description of exposition that we cannot better, so we quote it extensively here:

Exposition is an introduction. Exposition need not tell what something is; rather, it can set the ground for a play to follow, which can be open-ended and need not be concluded in the publication itself.

There is a didactic element to the notion of exposition, as far as it teaches how and as what something may be seen without determining outcomes. One may even say that there is something inherently gentle to exposition considered as introduction, a relief, perhaps, from the obligation of being a 'work of art', in the serious sense of the word.

Although introduction suggests discursiveness, what is meant here is not so much explanation but a willingness to share materials and modes of thinking and doing. (JAR 2015: n.pag.)

This gives us an excellent idea of what the purpose of an exposition might be: a laying of the 'ground', an opportunity for exploration; 'gentle' in nature, it suggests a necessary humility; the sharing of thinking processes and the revealing of methodology; and perhaps most importantly it invites participation in order to enrich and expand understandings from the inquiry.

If this is the purpose of an exposition, then Henk Slager gives us a possible metaphoric structure for it. He identifies the use of archives as a currently used display format for

practitioner-researchers exploring 'art as research' and its presentation as knowledge (see *Critique of Archival Reason* exhibition curated by Slager 2010). In analysing new work by research-oriented international artists involved in this exhibition, Slager identifies that these particular works 'in different ways cut against the conventions of archival display'. In his chapter 'Counter-Archival Dissemination' (Slager 2014: 141), he says: 'Research-oriented artists currently produce rhizomatic presentation models while presenting various constitutive segments such as photographic material, drawings, performances, video and texts in a fluent integral manner'. This rhizomatic model offers an excellent vision of how a doctoral exposition might be structured and materialized.

Exposition – recent Ph.D. examples

We have had some difficulty in finding good examples of doctoral expositions. Certainly in the United Kingdom, most Ph.D. examinations are still private events, so any attempts at exposition usually remain within that event, unless the candidate chooses to make a public presentation of work before and/or after the examination. Many expositions go undocumented, are not archived and tend to be inaccessible. However, some excellent examples of doctoral research in progress and completed can be found in Henk Slager's curated exhibition *Nameless Science* (2008–2009). Matts Liederstam's Ph.D. 'See and seen: Seeing landscape through artistic practice' (completed in 2006) comprised an exhibition, a web site and a text. For the exhibition – still so named – a model of the space was created. Liederstam designed tables for studying the materials presented, and placed optical instruments on the tables to enable the viewer to actually experience the act of looking. The installation guided the viewer from one experience to the next, and involved the viewer in a negotiation process that constructs the way pictures are perceived in art history. This is clearly a carefully structured and user-friendly encounter with research for the viewer/participant, enabling Liederstam's argument to be experienced directly.

Maxine Bristow's doctoral research (completed 2016) included an 'attempt' at an exposition – *Attach/Detach*, sited in the Contemporary Art Space Chester, UK. Her inquiry aimed to re-position her practice from a historical allegiance to the medium specific conventions of textiles to the current 'post-medium' condition of contemporary art – in her case through a sculptural/installation practice. Drawing on Theodor Adorno's notion of the

'constellation' (Adorno 2007: 162), she conceived the thesis, including an exposition, as a series of interrelating theoretical, methodological, contextual and practice-based 'components'. The significance of the constellation is that 'it allows sensuous resonances to intuitively emerge and conceptual connections to be temporarily illuminated but they remain fluid and are not categorical understandings' (Bristow email to co-authors, 31 December 2016). Bristow's 'constellatory' exposition included:

- A collection of individual 'thingly'⁴ sculptural elements conceived in a way that could be configured and reconfigured within a series of staged mise-en-scène. Offering the opportunity for continual rearrangement, the physical form of the work remains essentially mutable. Meaning is similarly contingent, mobilized through the various correspondences set in play across the different elements and the subject of the experiential encounter.



Figure 2: 'Thingly' sculptural components (Source: Bristow 2016).

- Two parallel modes of visual documentation aimed to reveal the tension between subjective and material agency and the shifting relationship between the 'classificatory' (what Neil Leach described as 'knowledge-as-quantification') and the 'constellatory' ('knowledge-as-sensuous correspondence') (Leach 2006: 23). A four-metre retail-style concertina catalogue presented the individual sculptural components in the form of a quasi-taxonomy. The gridded linear sequential format and regular folded divisions of which suggested the temporal evolution of the Ph.D. and the rational coherence and classificatory grounding from which the improvised constellatory staging of the work takes its measure.



Figure 3: Concertina catalogue (Source: Bristow 2016).

- This was accompanied by a 68-page A4 perfect-bound catalogue that documented the (re)staging of the various sculptural components within different installational scenarios and exhibition contexts.



Figure 4: Catalogue documenting possible scenarios (Source: Bristow 2016).

- An illustrated written text that is itself a constellation of practice strategies, theoretical, methodological and contextual perspectives.
- A selection of supporting material including Ph.D. abstract, project maps, mind maps, photographic research, sketches, maquettes and reflective journals.



Figure 5: Examples of supporting material (Source: Bristow 2016).

There was also work-in-progress split-screen video footage that presented a more detached walk-through the exposition installation set against a more poetically ambiguous close caressing of surfaces.

For Bristow it was important that the exposition reflected the processually oriented nature of her enquiry and it was crucial in revealing a sensuous mode of knowledge production that couldn't be revealed through other means. It provided her with a further opportunity to reconfigure some of the sculptural elements from her 'thingly' taxonomy and, in allowing direct access to the practice, afforded authority to the performative nature of the experiential encounter and both the affective and cognitive dimension of materially embodied experience.

Exposing the tensions that were the focus of her research and maintaining the non-hierarchical dynamic fundamental to the constellatory methodology, the epistemic agency of the exposition resided in the precariously unfolding relationship between individual self-determination (of the artist/researcher and the viewer/holder) and an active opening up to what she describes as the 'productive indeterminacy' of matter/material in all its sensuous fullness and complexity. Here the resonance of an abstract sculptural language is privileged over representation for the way that it can accommodate contradiction and facilitate somatic and semantic correspondences yet at the same time continually elude subjective mastery and conceptual synthesis.

Bristow observes that on reflection the detached authority of the gallery context meant that the ideological conventions of the exhibition were perhaps still dominant and the (re)staging of the work lacked the speculative nature of previous manifestations within the

studio. The architecture of the gallery also created a clear separation between the staging of the practice elements and the display of what was perhaps still construed as 'supporting material'. With the benefit of critical distance, this could have been further mediated and given greater prominence.

Acknowledging these various individual attempts at exposition, more organized and explicit thinking is taking place. In this respect the 'Adapt-r' network breaks new ground in doctoral education (Adapt-r 2013). An EU-funded international network established in 2013 involving seven European and Australian universities,⁵ 'Adapt-r' hosts a Ph.D. research project database and organizes various residential events – Practice Research Symposia – that combine research methods training, supervisor training, research in progress reviews, seminar and examination 'auditing', exhibitions, and 'practitioners in conversation' sessions. Perhaps the most radical move is the totally open public Ph.D. examinations that are documented in their entirety on video and published on the web.⁶ Such examination events encourage the researcher to articulate the Ph.D. inquiry in the presence of artefacts and/or resolved creative works, thus enabling participants the direct experiencing of the researcher's argument and its constructive interrogation.

Exposition – a 'rhizome' structure?

In this final section of the chapter we offer practical generic advice on how, within the context of a Ph.D. examination, a doctoral exposition might be shaped and what it might comprise. As Biggs suggests, context is crucial – so the first thing to consider is where an exposition might be best communicated and experienced; we think this is conditional on the focus of the inquiry. For example, the authors know of various practice-led Ph.D.s whose outcomes and outputs have been publicly accessible within the context of contemporary art centres. For example, the 'emerging artworks' from Jessamy Kelly's Ph.D. research (completed 2009) were displayed in a Crafts Council Solo Showcase at the National Glass Centre, Sunderland in 2006. Kelly argues:

In exhibiting the artworks at Craft and Art galleries it was possible to test the viability of the new process routes and artworks against the work of others in the field. (Kelly 2009: 99)

Whilst this is an important aim and may provide ongoing contextualization of the research, within such contexts the public would naturally expect to see resolved artworks.

Alternative kinds of spaces might be considered depending on the nature of the inquiry and its findings, for example an industrial unit, a furniture workshop, a community centre, a heritage site, a museum, a garden centre, etc. In such contexts public expectations will be different, and a research exposition might provide a surprising engagement with the research issues that usually the public are not party to.

Having established a proper context for the doctoral exposition through choosing an appropriate physical space and creating a particular aesthetic, as Matts Leiderstam did, what are the possible elements that the practitioner-researcher might include to fully expose the process of inquiry? We take up Slager's analogy of 'rhizome' as one useful structure to consider. There may be many more imaginative options; however, according to Giles Deleuze and Felix Guattari (1993) the concept of 'rhizomatic' for representing and interpreting information is compelling, because of its non-hierarchical, non-linear, connective capacity. It allows for growth, fluid change and interaction. We offer the following as suggestions, not prescriptions, to be creatively interpreted. The exposition should ideally reflect the nature of the inquiry in form and content. Figure 6 presents a possible rhizomatic visualization of the probable components of a doctoral exposition.

Some detail is given in the figure for each component, so here we discuss the overarching concepts. It is now apparent that the exposition must be a controlled experience within an appropriate context, presumed to be a suitable physical space in which the researcher actively guides the participants. In this sense its careful construction is the obligation of the doctoral researcher, much like a contemporary curator will instigate and deliver an encounter with creative works in a gallery setting. However, the exposition is not an exhibition and the researcher must make this distinction, and provide criteria by which the materials displayed can be understood and evaluated. An abstract, key words and a glossary of terms will help to quickly orient examiners (and public) to the focus and parameters of the inquiry. There may be a number of means by which the creative inquiry can be contextualized in terms of key thinking and practice in the defined field, for example, a mapping of the context of inquiry, key quotes and key references. Increasingly, the use of social media tools as a means of sharing and testing

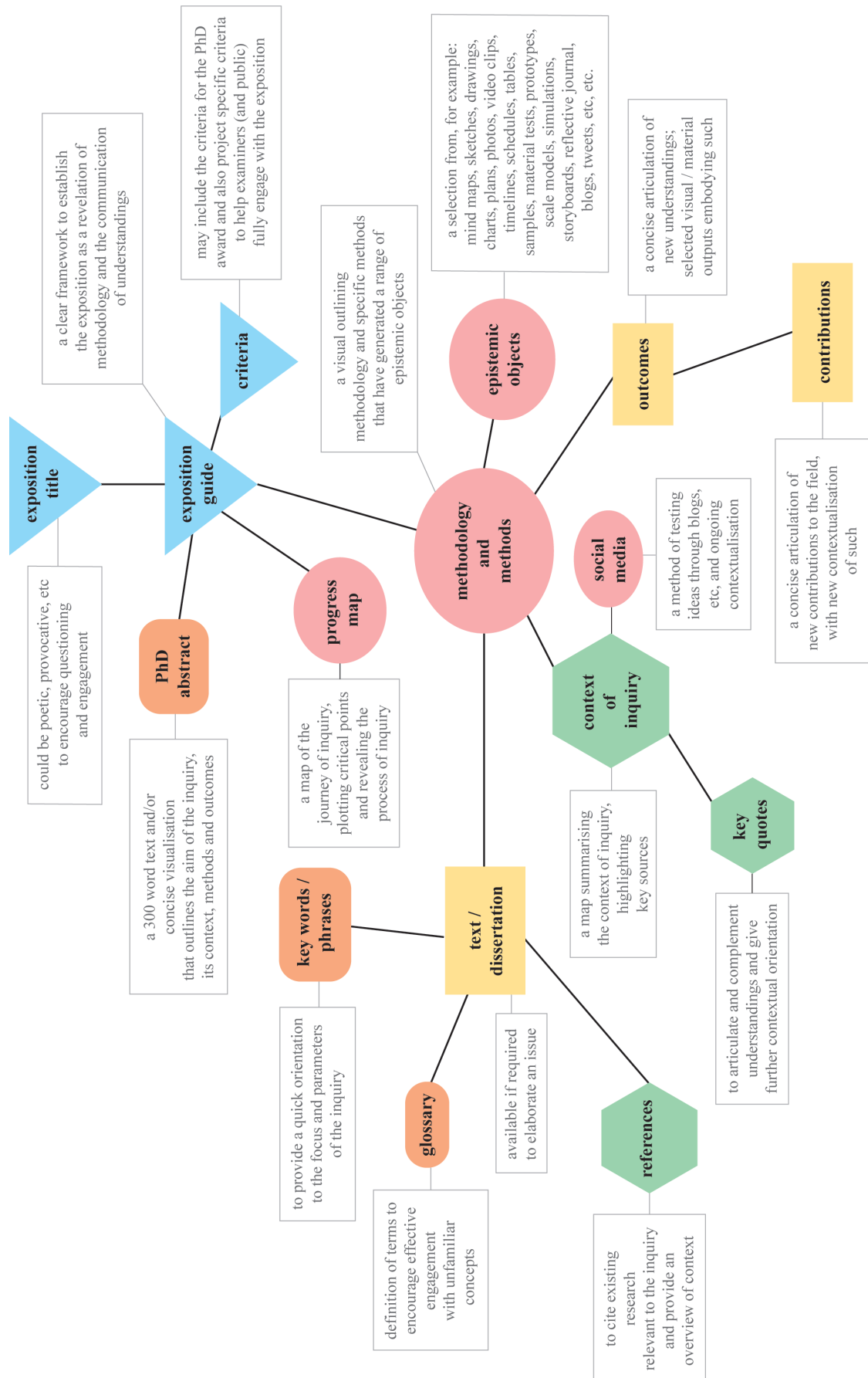
ideas about the questions and assumptions of an inquiry is a valuable feedback mechanism, as well as providing ongoing contemporary contextualization.

Conclusion

If we accept that the main function of the doctoral exposition is to reveal methodology, then this aspect must be given great emphasis. There might be a key visual (or set of) that maps the methodological approach and methods in the journey of inquiry, highlighting critical points of insights as well as misunderstandings. The latter might be materialized in a selected range of epistemic objects, some demonstrating what the researcher currently knows so far – knowledge constructions, and some embodying partial valuable insights, allowing for future exploration by the researcher and/or others – knowledge bearers. Epistemic objects, as Jeanne Bamberger and Donald Schön say, act as ‘a materialised “log“ of the making process’ (1991: 192) and are part of the Ph.D.’s aim of knowledge contribution to the field.

Finally, the outcomes of the inquiry must be clearly and concisely articulated. There may be a range of new knowledge – conceptual, methodological, aesthetic, technical, etc., and these might be embodied in various output forms. Some might be considered as resolved works, but as Schwab proposes (2015) they need not necessarily be ‘works of art’. The new knowledge contributions must be positioned in relation to the field of inquiry, and their value, or potential value be suggested.

Figure 6: Exposition – a rhizome of possible elements (Source: Gray and Malins 2017).



The exposition must be captured in some way for archival purposes, and post-examination included in the final submission for Ph.D. This then becomes accessible learning material for new researchers, and something on which to experiment and build.

The doctoral exposition should not be something that is 'tacked on' at the end of the research for the purpose of the examination. Rather it should be considered as an essential component of research training and exercised throughout the Ph.D. experience. We consider it as important and to be as carefully developed as the written text, which is always a 'partial' component of the final submission for Ph.D. The Ph.D. is constantly evolving and we should not be afraid to experiment – pushing the boundaries, challenging assumptions and searching for better ways of doing and articulating inquiry.

As Schwab admits there is a didactic flavour to exposition, and at best it should be a memorable learning experience for all involved – the researcher, the examiners, doctoral peers and public. Most importantly one would hope that a doctoral exposition would be a highly visual/haptic and engaging encounter with the research, exploiting the creative knowledge, experience and skills of the practitioner-researcher. From this perspective the exposition can be seen as yet another exciting opportunity to make a poetic statement.

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¹ We interpret the term 'practice-led' as a methodological approach (not only in art and design fields but also in architecture, engineering, nursing, etc.) in which:

- the impetus for inquiry comes from some form of creative practice (rather than theory);
- practice (including related key thinking) provides the context for inquiry and its critical positioning;
- methods for inquiry may be those already used in practice, adopted/adapted from a wide range of related practices, and even invented;
- new insights and understandings from the inquiry should be effectively shared with peers and public.

² For a visualization, see Science Museum (n.d.) <http://www.sciencemuseum.org.uk/broughttolife/objects/display?id=6145>.

³ For a visualization, see Gaudi Club image (n.d.) http://www.gaudiclub.com/ingles/I_VIDA/fotobras/colonia/1102.jpg.

⁴ The term 'thingly' or 'thingness' emerges as a practice strategy that allows for a sense of familiarity yet resistance to conceptual synthesis. In the introduction to his edited collection entitled *Things* (2004), Bill Brown makes a distinction between objects and things, suggesting that objects are delimited by concepts and cultural codes through which they become recognizable and meaningful. Things, on the other hand, exist in a suspended form of identity, in reference to the object but not in a way as to be able to necessarily identify it. Connoting a simultaneous sense of the general and particular, things operate on the threshold and suggest a liminality where they are immediately graspable but at the same time elude comprehension. As Brown observes, 'the thing really names less an object than a particular subject-object relation' (Brown 2004: 4).

⁵ The network includes KU Leuven, Belgium; RMIT University, Australia; University of Ljubljana, Slovenia; University of Westminster, London, UK; Estonian Academy of Art; Aarhus School of Architecture, Denmark; Glasgow School of Art, Scotland, UK.

⁶ For an example of a public doctoral examination in which one of the co-authors participated, see Adapt-r Practice Research Symposium Conference (2015) vimeo.com/130647624 Accessed 1 June 2018.