# Some consequences of the academicization of areas of design practice

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This paper aims to contribute a design-focused perspective on the ‘alternative paradigm research’ discussion. To clarify the aspect of ‘design-focus’ that we wish to refer to, we will use the term ‘areas of design practice’ to cover those activities that focus on the conception and production of artefacts, in contrast to the activities of theorizing and writing histories. The literature on academic research in areas of design practice encompasses a board range of subjects and terminology -- it refers to the creative and performing arts, the arts, design, etc., however what we take to be common in the literature is an interest in research involving the creation of original artefacts. In this paper, we cluster together the currently academicized, previously vocational areas.

We claim that researchers in different disciplines operate in different research paradigms owing to different worldviews. A worldview is determined by a set of foundational beliefs that are taken on faith, and a research paradigm is defined by axioms and assumptions that are a consequence of that worldview. For example, the scientific view of the world is that it exists independently from the individual and the individual’s thoughts about it; and it is possible to find out objective facts about the world by following certain procedures. This worldview conditions a research paradigm with an ontology of a real external world; that methodologically the data that is collected in procedurally appropriate ways will yield objective facts about that world; and that epistemologically the researcher stands in a disengaged relation to the world that is being investigated. The procedures that are regarded as appropriate within a particular research paradigm form the research models that are acceptable in that paradigm, and these research models determine what one should do in order to extend knowledge in a particular subject. Of course, the scientific worldview is not the only one, and this paper will contrast it to the design worldview as indicating the emergence of a unique research paradigm.

The relationship between a community’s worldview and the academic models that it adopts may be functional or dysfunctional. We claim that the relationship in the areas of design practice is often dysfunctional. This is because the academic model has not developed authentically in relation to its fundamental beliefs, but has done so in response to external forces for academicization. When pushed into the academy, areas of design practice did not possess their own academic models that were effectively linked to its worldview. We claim that, as a result, these areas simply co-opted research models from other disciplines.

The paper proposes a rationalistic approach for investigating the relationship between worldview and research paradigm -- between fundamental beliefs, theoretical concepts and methodology in research models. The rationalistic approach enables a critique, which reveals that there are indeed problematic issues with adopting academic models from other research paradigms in an uncritical way, and concludes that areas of design practice should be investigated as an example of a distinct worldview.

## The academicization of design practice

At the University of Hertfordshire in the UK, we have a cluster of projects called ‘research into practice’ (http://r2p.herts.ac.uk). The researchers on those projects have been working for the last ten years on a number of problems related to the same topic, i.e. the emergence of something called ‘practice-based research’ (PbR). There are different names for it, and some people are very sensitive about the different nuances that these names connote. Broadly speaking, what they have in common is that they all refer to what it is to undertake research in an area like painting or musical composition, architecture or design; namely creative and formally vocational areas. PbR is sometimes claimed to be unique to areas of creative practice and often the researchers themselves assert that the artefacts produced have an essential role in the research, and as a result, that it could not be conducted or communicated without these artefacts. However, we have characterized the models adopted in PbR as arising either out of ‘exploratory practice within the traditional model of academic research, [or] practice as a generator of relevant questions’ [1]. In our view, this describes a polarization of two roles for practice: as explanation and as generation of knowledge. Although other authors have addressed the design process as a new model for knowledge generation, our previous findings indicate that the mere presence of creative practices does not significantly distinguish this kind of research from other available models [2].

The similarities and differences between design and other academic subjects are reflected in national research assessment procedures. For example, in the UK Research Assessment Exercise (RAE), design was assessed together with art under a single unit of assessment whereas in ‘Excellence in Research for Australia (ERA)’, design is a distinct discipline (Design Practice and Management) within the cluster ‘Humanities and Creative Arts’. In general, viewed trans-nationally and trans-disciplinarily, in PbR there is an interest in research that is not historically led or to do with technology, but to do with the actual production of the stuff itself. What we consider in this paper is what happens to these professional activities when they are pushed or pulled into the academic context.

The atelier and the master-apprentice models have been persistent teaching models in areas of design practice. It is common to find these in almost any country around the world in which the teachers of advanced studies in the institutions are also active professional practitioners [1]. Until recent times these have proven to be very successful educational models. However, the contemporary environment is changing substantially in response to the academicization of formerly so-called vocational subjects. This academicization can be seen as a natural consequence of creating a market for knowledge. In a market, the generation of knowledge and the control of knowledge becomes something of value: not just of cultural value but of commercial value as well. Both kinds of valorisation create an environment in which competition and exchange thrive. In addition, the commercial value of research as a generator of income for Universities and individuals is now a strong force. For example, the UK Arts and Humanities Research Council (AHRC) awarded over £63 million for research in 2008/9 [3]. It is therefore understandable that Universities and individuals should be motivated towards research.

At a theoretical level, academicization involves the adoption of the dominant hegemony and the worldview that supports it. The largely capitalistic description of how the academy adopts new concepts of knowledge has been theorized by Bourdieu [4], identifying the interest that the academic has in the artificial division, sub-division and apparent creation of knowledge as an industry. If knowledge can be a business, then the academicization of knowledge changes the nature of that business from something broadly altruistic and with shared ideals into something more overtly commercial, like any other marketable product. However, this is not the only way of theorizing the exploitation of knowledge. If one sees this more as the exercise of control than of exploitation, then one might prefer the explanatory structures offered by Foucault [5], which show the arbitrariness of inclusion and exclusion in the academic canon. What these alternative explanatory frameworks show is that there is more than one point-of-view from which to attempt a theoretical explanation of phenomena such as the academicization of knowledge. Indeed, the visibility or invisibility of phenomena, and the need for explaining them, arises within a meta-level concept called a worldview [6].

Academicization is not just a theoretical concept -- there is tangible evidence of this process. At a practical level we can find indicators of these changes such as the move of design schools into universities, the funding made available through research councils who also broaden their remit into practice, availability of doctorates, etc. For example, in the UK the majority of art and design schools were located in polytechnics as part of the vocational education sector. But in 1992 the polytechnics were legally incorporated as universities, which had the immediate effect of increasing both the opportunity and the competitive necessity to compare areas of design practice with all other university based subjects. The so-called ‘creatives’ had to compete for resources, and were also now in an academic environment in which new levels of study were available. Since the highest level of qualification in universities is the PhD, this, rather than the MA, became the target terminal award. But the PhD is a research degree and therefore completely different in its aims and objectives from the (British) BA or MA.

There are disciplines that have conducted academic research for longer than others, and have therefore helped to shape the notion of what constitutes academic research. When we look back at their period of academicization it may seem that there was always a harmonious relationship between their worldview and their research models. Ideally, the situation is that the worldview of an academic community determines the research model that the community adopts and that, therefore, the worldview and research model develop coherently. This is not, however, the case of disciplines such as the ones in areas of design practice, that have only recently joined the academy owing to forces for academicization. In response to the immediate needs for an infrastructure for knowledge production, we claim that these disciplines built a collage from the resources in other areas, only modifying them superficially to force them to fit together. To some extent this is understandable because they did not have models that were exclusive and specific to their own needs [7]. Given this context, in areas of design practice we claim that there is a dysfunctional relationship between the worldview and the research models that have been adopted. In terms of the forces at work in the process of academicization in areas of design practice, these push towards the academy and at the same time towards the contemporary and dominant models of research that belong to other academic areas.

At a practical level, creatives now find themselves having been trained for one type of activity but asked to perform another. The type of training that creatives have hitherto received regarding research has been pragmatically driven, and has lead to the expectation that they are able to find out what they need to know about a subject to enable them to operate efficiently within that subject as ‘guest workers’. However this type of research is not academic research. This type of research is finding out something that one does not know, whereas academic research is finding out what nobody knows [8]. The former type of research has an important place in the professional worldview in which creative practitioners design as part of a cultural network of the production and consumption of artefacts. The latter worldview is quite different, and consists of the production of journal articles, books, theories, etc. as part of an academic network of the production and consumption of academic knowledge.

In our analysis, under pressure for academic productivity, Universities, funding councils and others have hastily adopted apparently productive models from traditional subjects and, perhaps simplistically, mapped onto these, concepts from design practice. For example, what was hitherto known as ‘experimental method’ in the sciences became labelled as ‘studio activity’ in art and design [9]. But this hasty mapping did not seem to take account of the difference in worldview between these traditional subjects and areas of design practice. The worldview of design practice includes many meaningful activities for creatives, but amongst these is not always prediction and control.

## Worldviews and research paradigms

In our work, we are currently looking at theories of worldview and research paradigms. In doing so we make reference to the work of Guba [10], Guba and Lincoln [11], and Heron & Reason [12]; and earlier work by Goodman [6] and Kuhn [13]. The reason we focus on these theories is because we feel that areas of design practice -- as relative newcomers to academia -- entered a context in which there were already some established worldviews and research paradigms that derived from other more traditional academic subjects. It would be an interesting development if we could show that areas of design practice brought with them a new worldview and research paradigm. Conversely, it would be almost as interesting to see whether areas of design practice could be happily fitted into existing worldviews and research paradigms.

The terms ‘worldview’ and ‘research paradigm’ can be further described. A worldview is basically a set of beliefs that one holds about the nature of the world and one’s place in it, that determines the activities one would undertake as a researcher. If one thinks, for example, of the model from classical physics, one may observe that the classical physicist believes in an external world, and that facts can be found out about that external world. Because it is external, it is independent of the emotional responses and interests of the researcher. It is an objective world and one can say objective things about it. One can find evidence for it, and anyone else can find this combination of evidence and objective statements. As a result, they will all conclude broadly the same things about the nature of the world. The more repeatable the outcomes, the more the statements and claims are held to correspond to what is actually out there. Such a worldview creates a research paradigm in which certain activities are relevant: reaching for evidence and setting up repeatable experiments become meaningful. If one compares this to the world of literary theory, one may conclude that the literary theorist does not approach the world in this way. They do not necessarily believe there is something objective out there, for example, the fundamental interpretation of a text. Their worldview is much more likely to be engaged with the reading of the individual person and with the subjective experience of the reader in constructing the text. According to this worldview, the individual’s interpretation is at least as meaningful as anything that one might claim the author put into the text.

The fact that the world may be regarded as a construction of the individual contributes to Goodman’s concept of ‘world-making’. Goodman regards worldviews as a representational problem whereas Guba and Lincoln refer to the relationship of the researcher to the world. Guba and Lincoln [11] originally identified four main worldviews, but responded to the criticisms of Heron and Reason and later described five [14]. This amendment suggests that there may be many more worldviews between the extreme Realist position of the classical physicist, to the anti-Realist position of the literary theorist and others. According to Guba and Lincoln [11], worldviews centre around three principal questions: an ontological, an epistemological and a methodological question. The ontological question asks about the nature of the object of study, about the nature of the world and whether it is out there or inside the observer. The epistemological question asks about what kind of relationship one can have with that knowledge; and the methodological question asks what one can do to find out more about this object of study. According to which of the many ways these questions may be answered, so there are as many appropriate research paradigms in which there is a connection between the worldview and the research paradigm that is constructive and functional, and in which one could deem that research actions are appropriate.

This use of the term paradigm differs from Kuhn’s [13] earlier use. For Kuhn, a paradigm is a large-scale set of interdependent concepts that determines a view of the world across a wide range of subjects. It forms a way of thinking that pervades enquiry in all fields until it is replaced by a new paradigm. For Kuhn, paradigm shifts occur when the existing way of thinking becomes stretched to breaking point and is substituted by another paradigm. For Guba and Lincoln, paradigms do not shift. For them, a paradigm is a way of addressing the world according to a worldview. At any one time there are many different paradigms in operation, presenting the possibility of what Gage [15] calls ‘paradigm wars’.

As one introduces different responses and answers to the ontological, epistemological and methodological questions, so one defines a range of possible worldviews and paradigms. In this paper we mainly contrast Realist (Positivist) and anti-Realist (Constructivist) paradigms. Issues such as the role of evidence become very strong on the Realist side and as one goes further towards the anti-Realist position, the role of evidence changes. It is not that evidence stops being meaningful, it is that evidence stops being significant. The anti-Realist does not look for evidence in the sense that the Realist does, or at least the meaning of the term evidence changes radically as one moves into more interpretative or Constructivist paradigms.

We felt that the worldview with which areas of design practice were confronted when they entered the academy was dominated by concepts from the Realist position [16]. This is perhaps just one more phase of a general historical shift. With the entry of new subjects into the Universities over hundreds of years, the dominant paradigm has changed. Nonetheless, when we looked at the kind of regulatory framework that Universities set up -- that was supposed to be generic for all subjects -- and the language that the research councils were using, we found that they contained a strong Realist component. For example, the use of the terms ‘question’ and ‘answer’ by the AHRC in their ‘definition of research’ [17], could have been made less Positivistic by the use of the terms ‘issue’ and ‘response’. The former are not necessarily appropriate for areas of design practice.

As one goes further towards Constructivist anti-Realist paradigms (in which the individual’s experience becomes not just an unavoidable nuisance but is constitutive of the kind of content that one thinks there is in a subject like design), so one moves away from what seems to be the preferred model of the Universities. Hence it became increasing difficult for designers to express what it was they were doing in terms that would satisfy the Universities for the award of a PhD, for example. In the UK and elsewhere in Europe, one can see individual institutions struggling with this, and struggling with what it is that designers could do for which universities would feel able to award a PhD, or for which research councils would feel able to award a research grant. We speculated that areas of design practice represent an extreme alternative to this traditional model. Even the most liberal institutions have perhaps only moved about part of the way across this possible range and therefore areas of design practice are still relatively difficult to encapsulate within these structures. It would be significant should PbR turn out to be something novel -- to be a new research paradigm arising from a new worldview.

We have described a model of the production of knowledge in academia in which there exist simultaneously several recognized research paradigms as well as, possibly, some emerging paradigms that are yet to be recognized. What we want to claim about this situation is that for each worldview, there is a unique research paradigm that would have arisen authentically from that community’s worldview by mobilizing meaningful activities from the outset. By authentic we mean that the actions are recognized as meaningful by that community, that they address research questions that are topical and result in outcomes that have a significant impact on those problems for that community. A design research paradigm will be authentic to the extent to which it is faithful to the values of the design practice community. Internal paradigm coherence exists between worldview and unique research model.

However, it is very difficult to make connections across paradigms. When one identifies changes in response to the epistemological question for example, it is difficult to map one paradigm onto another. Not only is there a terminological shift, there is also – and perhaps more instrumental – a conceptual change too. As described above regarding evidence, it is not just that evidence becomes less important, it falls off the map; it is simply not a concept that one would introduce. This problem has been described by Hirsch [18] as being the difference between ‘meaning’ and ‘significance’. The former is something straightforward, incorporating the common sense distinction between meaningful and meaningless utterances. The latter incorporates the impact or relevance of the content for the interpreter. Thus an anti-Realist argument relies on persuasiveness and utility rather than evidence [11]. The concept of evidence in this paradigm simply becomes something one does not really want. One wants something else, and not just another word for evidence, but a whole different concept and a whole different network of relations between this and other concepts in that paradigm.

The case of subjectivity and objectivity is useful to unpack as an illustration of how Hirsch’s differentiation of meaning and significance can be used to describe research paradigms. In the Realist paradigm we are presented with an ontologically independent world, i.e. one that exists independently of the perceiving subject. Such a view is also the so-called ‘common sense’ view that the world does not cease to exist when one is not observing it. This response to the ontology question establishes the possibility of certain epistemological relations between the perceiving subject and the world, and in particular it establishes the possibility -- albeit an ideal one -- of objectivity.

Our use of these two antonyms -- ‘subjective’ and ‘objective’ -- needs some clarification. The term ‘subject’ is used here in the philosophical sense of the person who is observing the phenomenon, hence our use of the phrase ‘the perceiving subject’. As a result, those things that pertain to the philosophical subject are ‘subjective’. Unfortunately, ‘subjective’ can also mean ‘biased’, ‘flawed’, etc. and be intended pejoratively, especially when contrasted with ‘objective’. We will use the term ‘objective’ to mean ‘pertaining to the philosophical object’. In the case we are considering, the philosophical object is the world. Because in the Realist model it is separated from the perceiving subject by a distance and becomes an object of consideration by the philosophical subject, it can be labelled objective. The possible separation of the subject and the object is a consequence of a Realist ontology. In philosophical terms, within the Realist model, the term subjective is technical and not pejorative.

Maintaining the distinction between subject and object allows for an Objectivist stance that results in the possibility of observing phenomena from a disengaged point-of-view. Indeed, since the subject and object are independent, this distance becomes not only possible but also desirable and ultimately inescapable. Disengagement is therefore a Realist ideal. Having established this relative positioning, it becomes meaningful to speak in terms of evidence. Evidence is symptomatic of underlying causes and causal relationships with real-world objects, which are described by us through theoretical explanations. This superstructure of theoretical explanation based on evidence and critical rationalism is both meaningful and significant in the Realist model. It is meaningful because we can understand the way in which these concepts are fitted together even if we do not believe or subscribe to the particular model of the world that it describes. It is meaningful even to the anti-Realist. What is different is that this account of evidence is not significant to the anti-Realist. This statement needs some unpacking:

In the anti-Realist model there is of course still the concept of evidence. It is meaningful in the same way that it was in the Realist model, that is to say, the Realist and the anti-Realist dictionaries would define it in the same way. However, what the Realist and the anti-Realist make out of the term -- its significance in their worldview -- is quite different. Being an anti-Realist does not entail denying that which the Realist holds to be the case and, furthermore, differences of meanings and definitions cannot adequately account for the disputes between Realist and anti-Realist. Instead we must look to the way in which elements are compiled and related to form a worldview.

Owing to the separation and desirable distance, disengagement and objectification of the external world, the Realist breaks all contact with the world. The Realist can only hypothesize about it and look for corroboration of those hypotheses. Evidence supplies that corroboration because the Realist believes it has a causal connection with that which it indicates or for which it is a symptom. However, evidence could be seen as simply brute data that requires contextualization in a narrative in order to clarify the causality that gives it significance. It is exactly this narrative -- intended as contextualization by the Realist -- which the anti-Realist sees as fiction. The requirement for describing in addition to showing, introduces the opportunity for interpretation, as demonstrated by different scientific theories corresponding to basically the same set of data. Thus there is always an input from the perceiving subject even in the most apparently objective accounts, leading to a weakness in the objectivist claims of the Realist. The anti-Realist accepts this subjective element, and indeed elevates it to a greater status in the worldview than evidence. For the anti-Realist, the subject always interprets because they must construct the world, because, in turn, what is seen, heard, etc., must be mediated through interpretation. The raw data is meaningless without a narrative that contextualizes it. As a result, the claim of evidence becomes less important because it shows nothing per se or, like statistics, it can be made to show anything.

We have seen that the two accounts of ‘evidence’ -- the Realist and the anti-Realist – differ, not in the meaning of these terms, but in their significance. For the Realist, evidence is something that shows us about the world from which we are disconnected. For the anti-Realist, the fact that we need to narrate the connection between evidence and the world shows that we construct the world. As a construction it is no longer distant from the subject, or even separate from the subject, but at best a projection of the subject. Thus the significance of evidence changes and it no longer provides a bridge because there is no longer a gap to be bridged.

The connection between the worldview and the research paradigm, between the belief set and the research actions that are taken that correspond to that belief set, can be described as functional or dysfunctional. In well-established research paradigms such as the scientific method, hundreds of years of refinement have led to a very functional connection. But in more recently academicized areas such as those of design practice we identified that there was a dysfunctional relationship between the actions that were being taken (the methodological responses) and the beliefs that were being claimed (the ontological and epistemological responses).

There has been some discussion in the literature about whether cross-paradigmatic comparison results in incomprehension, owing to the incommensurability of the elements in the various paradigms [13, 19, 20]. Our research suggests that incommensurability is an inaccurate account of the problem because one cannot simply compare an element in one paradigm with its counterpart in another paradigm. However, Guba and Lincoln [11] have shown that there is a meta-level at which the structure of research paradigms and worldviews are comparable, i.e. they are structurally similar. This structure comprises the three core questions of ontology, epistemology and methodology. The resulting taxonomic tables present rows containing responses to each question, thus defining each column as a worldview with a unique research paradigm [14]. This implies that some degree of comparison may be made horizontally, across columns, i.e. cross-paradigmatically. In our view this is misleading owing to the conditions described in the case of subjectivity and objectivity. The mere presence of similar terms in cells in a single row misleads us into thinking that the significance of these terms is comparable. Indeed, since it is the purpose of the taxonomy to facilitate comparison, the presence of terms with the same meaning but different significance makes comparison paradoxical.

In our discussion above, we claimed that the possibility of the presence of the term ‘evidence’ in the Realist and the anti-Realist paradigms does not mean that the term in each case is comparable. We believe that this difficulty is a major contributor to the mutual misunderstanding and even incomprehension across paradigms. Such misunderstandings would be more easily avoided if, for instance, there were not terms with similar meanings in different paradigms. If such terms were completely different across paradigms then we would not be prompted to make such comparisons because these would be more difficult to make and would involve the selection of concepts based on their content and function. However, since many terms are shared across paradigms it is tempting to think that they hold a similar role and have similar significance. It is then doubly misleading if, as we claim, these terms share the same meaning but not the same significance. Again, as in the case of ‘evidence’, a discussion may be had between the Realist and the anti-Realist owing to common meanings, but masking different assumptions of significance. It would seem inconceivable to the Realist that the fundamental importance of evidence not be recognized by the anti-Realist given that each appears to understand the term as having the same meaning.

## Breaking into the epistemological problems of design research

We diagnosed that there was often a dysfunctional relationship between the design practice worldview and the research models that were commonly adopted for the development of academic research in these areas. Furthermore, we reasoned that we needed a different, non-paradigm-specific way of breaking into these problems. We adopted a rationalistic approach [21], which had the advantage of, rather than embedding itself in a particular research paradigm, standing outside the paradigm and identify features of something being research before it is labelled as belonging to a particular paradigm. In this respect the rationalistic approach adopts a meta-position comparable to the one adopted by Guba and Lincoln when describing the common structure of research paradigms. In the latter there are three core questions for which different worldviews provide different answers. Likewise our rationalistic approach originated from the axiom of accumulation, to which different paradigms provide different responses, even in the most extreme anti-Realist approaches.

We identified four characteristics that were indicative of something being a research activity and have structured them in a network of interdependent research-defining concepts. These four concepts can be expressed as the possession of a question and an answer, the presence of something corresponding to the term ‘knowledge’, a method that connected the answers in a meaningful way to the questions that were asked, and an audience for whom all this would have significance. The audience has quite a strong role in our model of research activity because it determines the meaningfulness and significance of the question, and whether the actions that are undertaken actually generate something that is relevant for that community in response to the question. The audience is composed of the greater academic community as a whole, within which there resides a smaller, more specialized academic community that is in a situated position from which to judge the meaningfulness and significance of the research [22]. We found that these four characteristics were ubiquitous, and were transferable to most subject areas. This is a development of other kinds of classification and conceptual framework-building that have been attempted before, including the ‘CUDOS’ system of Merton [23], and others in the philosophy of science.

However, the four concepts of question and answer, method, audience and knowledge seemed to lack something when applied to the design practice community. These did not seem to respond to some of the key concerns that we felt and heard from our colleagues who were part of this community and making claims for it. They had some additional concerns that they felt were not adequately represented, i.e. that there were characteristic features of the design worldview that were not accommodated by these four traditional research characteristics. Again adopting a rationalistic approach we constructed an interrelated network of four further issues that seemed to be specific to research in areas of design practice, and cognate disciplines. These four subject-specific issues referred to the role of text and image, relationship of form and content, the role of rhetoric and manifestation of experience.

These four subject-specific issues emerged because, for example, creative practitioners seemed to want a particular role for the image, designed object or system, i.e. broadly for the creative component often manifested though an artefact or that was distinct for being non-textual. This was unlike the kind of relationship that text and image had in other subject areas where the image was merely an illustration of something that was otherwise described in text. The design practice community claimed something more instrumental, where the image or equivalent was either generating the question, or was an instrumental component in the response to the question, or formed an integral part of the communication of the outcome without which it was incomprehensible. Removing such an artefact would have a catastrophic effect on the research. Similarly we came to the conclusion that the novel form of the outcome -- the fact that one ended up with a designed object or piece of architecture -- was perhaps misleading. It was not the artefact which was novel, but the type of content that came along with it which was significant [8].

This issue of the relationship between content and form seemed to involve questions of rhetoric, i.e. members of the design practice community were joining an academic structure with an established vocabulary and with structures that direct action, that were not necessarily compatible with the kind of vocabulary that they were using. In addition to what is meant by what is said, there is also an aspect of rhetoric that refers to the conceptual repertoire -- which in turn is an aspect of the worldview -- and that defines what one thinks can be said. And finally, the role of personal experience in both the production and the consumption of the designed object was much more central in many design philosophies than it would be in the Realist model. In classical physics, personal experience and philosophical subjectivity are undesirable and to be controlled and excluded from a research program. On the other hand, in the anti-Realist design areas we saw that personal experience and the subjective aesthetic response was the beginning of the interpretation of the object, more specifically, it was something that was fundamental to it and not something that got in the way of one’s understanding of it.

## Areas of design practice as a new paradigm

With the academicization of areas of design practice, researchers in these formally vocational areas were forced to produce new academic knowledge. We have observed that this was often achieved by adopting strategies to bridge the traditional interests of academia and the interests of design. The four research characteristics define the academic worldview whereas the second set of four subject-specific issues defines the design practice worldview. The adoption of bridging strategies indicates that the community feels the lack of an authentic design research model. This leads to our new paradigm perspective, in which there could be a design research paradigm that arises authentically from the worldview of the community by mobilizing meaningful activities from the outset. Rather than seeing design as a problematic area that needs to be incorporated into established research paradigms, we see evidence of a unique design worldview that still lacks a specific research model. This research model should emerge from a coherent relationship with the worldview of the design practice community. The research model will be authentic to the extent to which it is faithful to the worldview of the design practice community.

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