Chapter 6
Practice as Research: A Cybersemiotic Overview of Knowing

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Abstract The rise of science in the last 400 years, in the academy and in socio-economic life in the West, has culminated in a crisis in the human endeavor of 'knowing'. Western policy makers have promoted the upgrading and uptake of science in the name of short-term economic goals by way of downgrading forms of 'knowing' that do not demonstrate immediate applicability to problems inherent in capitalism (Cobley P, Am J Semiotics, 30(3–4):205–228, 2014). Thus, pursuits such as those associated with the arts and humanities have been marginalized for their supposed failure to conform to standards of applicable knowledge, while mathematics and other 'theoretical' disciplines are increasingly yoked to the demands of producing new technologies. Partly in response to this crisis, the last two decades has seen the growth of a considerable amount of theorizing and a vibrant field concerned with 'practice as research' (PaR) or 'practice-led research'. This field treats artistic practices as forms of 'knowing' which can complement, supplement, enrich and provide alternatives to scientific 'knowing' without being subordinate to it. Arising from early observations on reflective practice (Schön DA, The reflective practitioner: how professionals think in action. Basic Books, New York, 1984; Kemmis S, 'Action research and the politics of reflection' In: Boud DR. et al. (eds) Reflection: turning experience into learning. Falmer Press, Falmer: pp 139–163, 1985; Boud DR, et al. (eds) Reflection: turning experience into learning. Falmer Press, Falmer, 1985), work on PaR and practice-led research, has gone some way to establishing a more explicit understanding of practice in the arts and elsewhere as fixtures in the academy, through, for example, validating practice-based PhDs.

To a great extent, the work in this area during the last 20 years – in relation to practice in general (Schatzki K-C, von Savigny E (Eds.) The practice turn in contemporary theory. London: Routledge, 2001; Borgdorff H, In Dutch J Music Ther, 12(1):1–17 (originally published in 2006 in the Sensuous Knowledge series, 02 [Bergen: Bergen National Academy of the Arts]), 2007; Smith H, Dean RT (eds) Practice-led research, research-led practice in the creative arts. Edinburgh University Press, Edinburgh, 2009a; Barrett E, Bolt B (eds) Practice as research: Approaches

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to creative arts enquiry. I. B. Tauris, London/New York, 2007) and in relation to specific practices such as creative writing, performance, dance, experiment, community arts, etc. – exemplifies a philosophy of knowing. Yet, in doing so, this work struggles with various theoretical perspectives that have usually arisen out of traditional conceptions of disciplinary boundaries. Possibly the most sympathetic philosophy of knowing in relation to the cause of PaR and practice-led research – a perspective that is absent from the literature on the topic - is offered by cybersemiotics (Brier S, Cybersemiotics: Why information is not enough!. University of Toronto Press, Toronto/London, 2008; Brier S, Entropy 12: 1902–1920. https://doi.org/10.3390/e12081902, 2010). As cybersemiotics has long contended, the emphasis on knowing as an 'engineering problem', addressing a "syntactic-structural aspect in cognition, thought, and communication", has led to "a decreased interest in the cultural-societal and historical dimensions of the meaning of human cognition and communication" rendering "the social sciences, humanities, and arts much less important in finding the processes of the construction of meaning than most researchers within these domains themselves believe" (Brier S, Cybersemiotics: Why information is not enough!. University of Toronto Press, Toronto/London, 2008, p. 56–57). Cybersemiotics proposes a thorough *transdisciplinary* approach to this problem, comprising a marriage of evolutionary perspectives on cognition and biology with a formulation on self-referring autopoietic observership derived from semiotics and second-order cybernetics. This paper introduces a cybersemiotic perspective on the capacity of arts and other practice for knowing, suggesting pathways for developing PaR and practice-led research, as well as reviewing the literature of this new configuration in cybersemiotic terms.

Keywords Practice-as-research · Semiotics · Cultural studies · Knowing · *Umwelt*

6.1   Introduction

In the last 400 years or so, the rise of the natural sciences in Western culture has resulted in them setting the benchmark for what knowledge should consist of and how it should proceed. Physics, in particular, has offered a dominant role model. It has established the standard for determining what is material in the universe as well as how materiality might be measured. Yet, in the face of this apparent hegemony of knowledge, there has been a curious development, both in the academy and in the general sphere of human investigation. In some countries and in some education systems, it is now possible to gain a PhD 'by artistic practice' – that is, by submitting a portfolio of art works (fine art, music, film, dance or other performing arts, creative writing) in which the main element is the artistic work – rather than any conventional written account of it - that has been carried out. Furthermore, in those countries where the research conducted by incumbent professionals of Higher Education and other knowledge-producing institutions is subject to audit, works of art of any kind may be offered for assessment as exemplars of research endeavor.

Given the prominence of the natural sciences in contemporary industrialized society, it is unsurprising that the environment in which artistic practice is identified as research is fraught. There remain pockets of criticism leveled at the idea that practice can be considered as equivalent, in its own knowledge production, to scientific procedures (see, for example, Elkins 2014a). Indeed, the instituting of measures for assessing practice as research has taken decades of struggle. Aside from its acceptance by institutions, the promulgation of the very idea of practice exemplifying research has required strenuous discussion, with the most sympathetic parties unable to decide what it should be called, what its priorities are, whether it overturns natural sciences' procedures or whether it should work within the procedural parameters set by the natural sciences. Nevertheless, what is clear is that there has been widespread acceptance, within sometimes hostile intellectual and educational policy arenas, that practice – and arts practice in particular – constitutes a kind of 'knowing' of the world. That is, there has been an understanding that practice can furnish individuals and social formations with new knowledge and original insights.

This initially fragile consensus did not arise out of nowhere and is by no means fully evolved. In what follows, some of its development will be discussed, including why its theoretical co-ordinates are so intimately related to cybersemiotics. Most importantly for the moment, it should be noted that,

(a) the idea of practice as (potentially) constituting research arises from a formation of intellectual forces that also forged cybersemiotics;
(b) cybersemiotics amounts to a potential unifying perspective on, or even a manifesto for, arts/practice research; and,
(c) in seeming contradiction of a), the intellectual reference points that underpin much of the rationale for, and assessment of, practice as research in many countries are very different to those of cybersemiotics.

The jumbled – or, to put it more academically, *overdetermined* – theoretical development of these issues in research has had its consequences. Where practical fixes have needed to be found quickly and unified perspectives have been eschewed, either as too time-consuming or ideologically undesirable, it has meant that some problematic areas in conceiving practice as research have remained. It will be argued, then, that not only did cybersemiotics' ethos contribute to the vision of practice as research, but cybersemiotics also offers the unified perspective that is lacking in the relatively fragmented approaches by which scholars have tried to implement the assessment of practice. Furthermore, and importantly, cybersemiotics reveals new angles on some of the more specific challenges of elucidating practice's knowledge potential. In particular, the aim in what follows is to provide an introduction to the idea of practice as research and an introduction to how cybersemiotics bears upon it. Yet, in addition, this essay will argue that, somewhat surprisingly, much of the literature on the research value of practice has undertheorized the concept of 'knowing'. The very character of what is entailed in research, it will be suggested, has tended to fall by the wayside amidst the environment of struggle in which the attempt has been made to assess and define practice. In order to understand these points, some words should first be offered on what practice as research has been understood to be (and how it continues to be understood) and how this stage has been reached.

6.2   PaR – where it Came from and Giving it a Name

There can be little doubt that working with the idea of practice as research amounts to operating in an emergent and contested field. One indicator of this is that there is still no accepted term to denote this enterprise. Among the main field-defining texts, there is one collection of original articles which is titled with reference to "research in the arts" (Biggs and Karlsson 2011), while another one contains both "practice-led research" as well as "research-led practice" in its name (Smith and Dean 2009a). Haseman and Mafe (2009, p. 212), like Sullivan (2009), favor 'practice-led research', but they note synonymous designations "including creative practice as research, practice-based research, studio research and performance as research" (cf. Smith and Dean 2009b, p. 2). Haseman (2006) also refers to "performative research", whose complications will be revisited below and is not to be confused with "performance-as-research" (Midgelow 2019). Liamputtong and Rumbold (2008) are concerned with arts-based and collaborative research methods, while Leavy (2009), an advocate of qualitative research in general, refers simply to "arts research". One project involving a research centre for ethnography of artistic practitioners refers to "artist-led research" (Johannson 2017). Borgdorff (2007), in an essay that is probably one of the clearest regarding these matters of definition and is available in a number of places on the World Wide Web, notes the various expressions used in the literature to denote artistic research. Ultimately, because of its intertwinement of research and practice, Borgdorff opts for 'practice as research', along with Barrett and Bolt (2007), Nelson (2013), May (2015), Scott (2016), Midgelow (2019) and others. For reasons that will hopefully become clear in what follows, 'practice as research' (or 'practice-as-research' or PaR) will be used here.

One issue that is beyond dispute is that PaR has arisen as a cause for debate at a particular time and in particular circumstances. That is no coincidence. In terms of publications in English discussing PaR, they are most densely concentrated in the first decade of the twenty-first century. One reason for the relatively smaller amount of publications in the following decade is that teachers and researchers have been busy implementing the principles discussed in such publications whilst demand for PaR PhDs increased and auditing of PaR by agencies quasi-autonomous of Western governments proliferated. The inspirations for this burgeoning debate were numerous intellectual and policy developments. Published reflections on the value of practice were already growing in number, the most notable of these being the influential volume by Donald A. Schön (1984) which, in fact, does not focus on artistic practice. In addition, especially from the 1980s onwards, qualitative methodology became increasingly widespread in a range of subject areas across the Western academy: not just in the social sciences (which also continued to rely on quantitative methods, too), but also in the humanities and the arts. In communications and media studies, qualitative method became *de rigeur* (Cobley 1994); likewise in cultural studies, which used oral history methods as well as other forms of qualitative enquiry such as focus group interviewing. Although such method for the arts did not become the fixture that it was in parts of the humanities, it nevertheless made

significant in-roads where artistic practice was being incorporated into the academy (see, for example, Leavy 2015). For while reflection on both practice and method was taking place, the landscape of Western knowledge was also shaping and responding to it through economic and social policy as well as socio-economic developments.

What strongly determined the evolution of PaR was a series of changes in the educational policy landscape. Much of the theoretical and practical discussion of PaR was carried out in UK and Australian Higher Education, as well as in specific countries in Europe (for example, in Sweden – see Kälvemark 2011 – and France - see Allegue and Miereanu 2009). The United States' educational system has had a different history and approach in respect of how it has dealt with PhD topics; this, arguably, has not forced it into the same kind of struggle for PaR discussed here. What the United States had also earlier experienced, however, was the massification of Higher Education, a phenomenon that, as a global whole, only started to take hold as student numbers in Europe grew hugely. As part of this growth, European institutions underwent mergers and incorporation. One feature of my own career during this period involved teaching a UK equivalent of liberal arts in a Polytechnic which then gained university status in 1992 and incorporated a noted art school and a respected college of furniture and music technology. In order to be administered, let alone assessed, the different components of this higher education institution had to find some measure of equivalence across subject areas. In some ways, this was assisted by the introduction of a government-run assessment of research in universities. Pioneering in this process, from 1986 onwards, the UK government set up the Research Assessment Exercise to audit the research endeavor in institutions of Higher Education. This enabled or coerced – depending on how one views the matter – practitioners and artists to offer their work to be assessed on equivalent terms as 'traditional' research (that is, verbal reports of experiments and investigations in the sciences or theoretical/empirical enquiries in the social sciences and humanities). A further drive for equivalence came from the Bologna Process in the European Higher Education Area after its launch in 1999; this is an ongoing attempt to foster alignment of Higher Education offerings (such as courses and the terms of assessments, standards, length of degree programmes) across European countries. Meanwhile, practice was becoming increasingly central to the 'employability' of graduates in the labour market as the 'creative industries' (theatre, film, dance, art galleries, museums, and many more, at all levels of functioning) increased in size as job recruiters and contributors to the Western economy (see Kälvemark 2011, p. 10–12).

For many working in and around practice in education and research, these policy and social developments dovetailed, either nicely or problematically, with a number of 'turns' which had become fashionable in the grouping together of academic writings and educational approaches. Among these were the 'linguistic turn' (Rorty 1967), the 'ethnographic turn' (Culyba et al. 2004), the 'affective turn' (Wulff 2007) and, of course, the 'practice turn' (Schön 1984; Boud et al. 1985; Schatzki, Knorr-Cetina and von Savigny 2001). The 'cognitive turn' (May 2015), by contrast, has garnered, as will be noted, relatively little interest in this sphere, apart from the adoption of general, vague principles of 'embodiment'.

Two currents of thought, infrequently named as 'turns', provided an often unspoken inspiration for PaR. The first was the rise of Cultural Studies, which balanced a critical perspective with a more 'culturalist' one (Curran et al. 1982, p. 26–28; Bennett 1986, p. xii-xiv, xviii; Turner 1990, p. 30–32) in which, potentially, *all* cultural practices could be taken as objects of study that would expose their ideological, knowledge-bearing or affective dimensions. The second was 'postmodernism', a current of thought that was recognized in artistic and social circles as well as educational ones. Along with its academic twin sibling, 'poststructuralism', postmodernism cast doubt not only on the absolute primacy of particular practices over others, but also on the legitimacy and persuasiveness of many 'discourses' – in art, law, identities, politics, religion – that attempt to perpetuate hierarchies, power and control. In *The Postmodern Condition* (1984) Jean-Francois Lyotard reported that there was now widespread skepticism towards those "metanarratives" (sometimes called "grand narratives") such as Marxism and capitalism in politics, Christianity in religion, and so forth, that promised a defined, future conclusion for Western society. In the face of such perceived failure of the big narratives, it was clear that there was a renewed interest in smaller narratives and practices, both socially and artistically.

Arguably, the key impetus that PaR takes from postmodernism and Cultural Studies was offered already, prior to both of them, by semiotics. As a study that could extend to *all* signs, semiotics effectively leveled the 'playing field' of thought and practice. It effectively de-valorized *all* cultural artifacts while opening up avenues for interrogating the vicissitudes of signs, without undue biases, across the entirety of known existence. The concept of the 'text', invented concurrently by Roland Barthes (1977) and Juri Lotman (1974) in the early 1960s (Marrone 2014), indicated not a hierarchy of 'high' and 'low' culture but a fabric of devices, usually designed through habitual sign use, which would reach a particular audience. The 'linguistic turn', inaugurated by Richard Rorty's 1967 influential collection, seemed to complement semiotics, and certainly poststructuralism and postmodernism, in suggesting that the world is 'constructed in discourse' with humans' apprehension amounting to a mere figment induced by figures in language. As Robin Nelson (2013) puts it in the context of PaR, "Emphasizing the plurality of cultures and perspectives and social constructionism, [postmodernism] rejects essentialist accounts of identity, suggesting that not only is 'reality' constructed in discourse but the very identities of the subjects inhabiting it are mutable" (p. 54).

With pluralism entailing that more and more smaller practices gained attention, some started to abandon semiotics for fear that it amounted to a grand narrative even as it had moved some considerable distance from the idea of the world 'constructed in discourse'. The larger, more generalized perspective that semiotics exemplified, therefore, did not feed into PaR, although the relativism entailed by some variants of postmodernism, plus the idea of construction, did. Certainly, the integrated perspective represented by cybersemiotics would be likely to be resisted by those partaking of the former tradition, even while cybersemiotics was a facilitating voice in the struggle to recognize different kinds of knowing.

6.3   Knowing in PaR: Materiality, First Person, Reflexivity

The central idea of PaR is that artistic practice can constitute a form of knowing that is as crucial to humans' apprehension of the world as the grand narrative of science has been. Nevertheless, the nature of the knowing in PaR remains a topic for dispute even while debates about it have faded and universities have forged ahead with PaR PhDs and assessments of artistic research. The first point that is obvious is that there is a distinction involved in the use of the terms 'knowledge' and 'knowing'. 'Knowledge' is often used by research councils or awards bodies, as well as university PhD criteria, in outlining the requirements of PaR: that it 'contribute to knowledge' or present 'new knowledge'. As a noun, 'knowledge' here suggests a definitive outcome, an object that consists of an easily discernible result. Clearly, such a view of knowledge is consonant with traditional scientific research and its mode of presentation. Knowledge as presented in traditional research involves a rationale for the study, a literature review, a discussion of methodology, a layout of the data, an analysis of the data, a conclusion on the results and suggestions for further research. The process is not unimportant; but the product is crucial. Furthermore, the product is all the more acceptable if it can be quantified in some way.

The second point about 'knowledge' is that, even as a constituent of the product, it is not necessarily helpful or a 'good' in itself. In one of the most well-known formulations of this argument, Nicholas Maxwell (2014) has shown that knowledge-inquiry, or the much-vaunted 'knowledge for its own sake', has become "an intellectual and humanitarian disaster" (p. 20). As he demonstrates (Maxwell 2007, 2004, 2014), the development of the natural sciences and then the social sciences, from the late eighteenth century and nineteenth century onwards, became geared to producing knowledge which would then beget further knowledge. It was not orientated towards the production of 'wisdom' in the service of solving the problems of life and procuring what is 'good' for the world. Knowledge, instead, had betrayed the original principles of the Enlightenment.

There are some hints in PaR of Maxwell's discontent with knowledge-inquiry as opposed to wisdom-inquiry. However, the practical business of getting on with making PaR PhDs possible and assessing large amounts of researcher practice has arguably meant that discussions around knowing have decelerated in recent years. Some in PaR discussions have resuscitated an old distinction of knowing offered by Christopher Frayling in respect of 'research into art', 'research for art' and 'research through art' (Borgdorff 2007; Mottram 2009). Many have tried to co-opt Polanyi's notion of 'tacit knowledge' to recapture some of the unspoken and unconsidered aspects of practice, including those that are lodged in bodily work. Alternatively, they have utilized Ryle's distinction between 'knowing that' (associated with knowledge) and 'knowing how' (associated with skill) (e.g. Bolt 2007; Borgdorff 2007). Nelson's work is a good example of a combination of these perspectives in practice. "Key to my approach to PaR", he writes (Nelson 2013, p. 39), revealing the influence of postmodernism and poststructuralism, "is an acceptance that knowledge is not fixed and absolute. Though I accept that 'the scientific method' with its

capacities of experimental testability, repeatability and falsifiability has proved valuable, the fact is that it does not produce absolute truths". He goes on to distinguish between "know-how" (e.g. the skill of riding a bike), "know-what" (the critical reflection involved in knowing what is being done or has been done) and "know-that" (the equivalent of "traditional 'academic knowledge'" [2013: 45], the results). Ultimately, Nelson emphasizes "doing-thinking" and "doing-knowing" in PaR; the idea is that in the very act of creating or crafting practice there is an enactment of knowing. Specifically, he cites (Nelson 2013, p. 52) Marina Abramovic's designation of the way knowledge comes from experience as 'liquid knowing'.

This conception of 'knowing' as arising from the experience of practice, including the physical experience of the practice even as it happens, is understandably widespread in theories of PaR. It is sometimes expressed in terms of the work being 'performative' (Haseman 2006; Borgdorff 2007). Indeed, Nelson (2013, p. 66) refers to "the performance turn" and Bolt (2016) to a "performative paradigm". However, while Nelson (2013) states that "artistic praxis is performative in that it impacts upon us, does something to us, changes us in all manner of ways (aesthetically, perceptually, ethically, emotionally, even physically)" (p. 56), he does not embrace the designation itself because PaR already implies the 'doing' that the iteration of practice constitutes. This is certainly one of the reasons that PaR is the term used in the current essay, although the argument does not work for all commentators (Haseman, for example, as a proponent of the performative, rejects PaR in favor of the term 'practice-led research'). Yet, while the 'performative' does address the 'doing' of research in the pursuit of practice, it is worth remembering that the general idea comes not necessarily directly from the original 1962 distinction of performative and constative utterances proposed by Austin, but from the influential poststructuralist writings on identity of Judith Butler. As such, 'performative' practice is, once more, aligned with identity formation and construction in discourse.

What practice performs – the process of its knowing - is also bound up with its materials. For many advocates of PaR, then, a 'materialist' perspective is required. Paul Carter (2007) notes the marriage processes when he states that "the distinct focus of creative research, is located neither after nor before the process of making but in the performance itself" (p. 19). In his book, *Material Thinking* (2004), Carter discusses a number of artistic initiatives in which he has been involved and the way in which he considers them to be practices where the meaning of the artwork is not detached from the matrix of its production. Any conception of the work that practice does, in this perspective, should be evaluated or interpreted not just with reference to the final product but also in the interaction of materials, including the bodily involvement of the practitioner. Bolt (2007) largely concurs with Carter's 'material thinking' and specifically invokes the concept of 'handlability' – derived from a philosopher beloved of the poststructuralists, Heidegger – to offer some explication of the materiality of bodily involvement. She writes,

> I would agree with Carter that it is in the joining of hand, eye and mind that material thinking occurs, but it is necessarily in relation to the materials and processes of practice, rather than through the "talk", that we can understand the nature of material thinking. Words may

allow us to articulate and communicate the realizations that happen through material think-
ing, but as a mode of thought, material thinking involves a particular responsiveness to or
conjunction with the intelligence of materials and processes in practice. Material thinking
is the logic of practice (Bolt 2007, p. 30).

What can be seen in this exchange is an admirable striving for means to recognize,
appraise and find the proper proportional place for nonverbal communication in
human interaction. In this aspiration, discussion of materiality in PaR shares some-
thing with contemporary semiotics. However, it is less clear that poststructuralism,
with its emphasis on linguistic signification, however playful, will be able to assist.
What 'materialism' offers to PaR besides a focus on materials is an attempt to deline-
ate the role of the researcher. Possibly poststructuralism has some limited purchase
here. In traditional, natural and social science approaches to research, as has been
noted, the focus has been on the product and the methodology (see, for example,
Brewster 2009, p. 126). Indeed, Haseman and Mafe (2009, p. 212), suggest that the
traditional researcher has had to conform to "methodological 'hygiene'". The PaR
researcher, by contrast, is very much caught up in the vagaries of the situation and
her/his own agency. Schön (1984, p. 308) notes that "research is an activity of prac-
titioners. It is triggered by features of the practice situation, undertaken on the spot,
and immediately linked to action". More emphatically, still, Sullivan (2009, p. 52)
states that "the artist intuitively adopts the dual roles of the researcher and the
researched, and the process changes both perspectives because creative and critical
inquiry is a reflexive process". He adds that a viewer or reader is also "changed" by
an encounter with an art object/research texts because the encounter can challenge
and bring into play "new possibilities". What PaR theorizing does quite appositely,
then, despite the contested terrain on which it operates and the different approaches
it encompasses, is to tie up materiality, reflexivity and what, in cybersemiotic terms,
one would call 'first person experience' – either of the practitioner or audience
member. As Midgelow (2019, p. 112) sums up,

PaR involves thinking through doing, unpacking assumptions about the practice through the
practice, such that the researcher enters into a dialogue with her emerging materials and the
creative processes develop through internally derived, often non-linear, logics. In this way
the knowledge that is embodied in movement is not simply pre-cognitive, nor is it a demon-
stration of a pre-theorized intellectual position.

Yet, there is the feeling that amidst attempts to marry these concepts and perspec-
tives, the purview in which the marriage occurs is quite limited and possibly even
parochial. What PaR theory seems to lack is a broader overview of practice within
the domain of signification and cognition in general. That is, its considerations of
materiality do not always pay close attention to semiosis in the technologies that
comprise practice, including technologies that are part of the human body. Moreover,
its peregrinations on first-person experience and reflexivity do not situate the semio-
sis of practice within the extensive domains to which they belong. So, it has been
seen that discussions of PaR are usually conducted within a frame of reference that
includes cultural studies, postmodernism, poststructuralism and so forth. Invoked
authors include Merleau-Ponty, Butler, Lyotard, Derrida, Heidegger and Deleuze,

recurring, along with Polanyi, favored posthumanists (Haraway) and, sometimes, references to the whipping boys of 'Continental Philosophy', such as Descartes and Plato. Absent from discussions of PaR is the significant literature on nonverbal communication from the last 70 years, the equally large amount of literature on non-human animal communication (very much concerned with nonverbality, of course) developed over the same period, writings in contemporary semiotics (particularly biosemiotically-orientated work), second-order cybernetics, philosophy of science, media and communication theory, or distributed perspectives. Authors *not* invoked include the late Latin philosophers, Edward T. Hall, Kendon, Peirce, McLuhan, Luhmann, Maturana, Uexküll, Sebeok, Gibson and many others. Of course, as mentioned, instituting PaR has been a struggle and so strenuous has it been that, on top of that and on top of the workload of the modern academic generally, it is probably unreasonable to expect recurrent excursions outside academics' disciplinary or theoretical comfort zone. However, given how germane the aforementioned areas are for PaR, opportunities are being missed. One of the main such opportunities, perhaps, is in respect of working to provide a unified theory of PaR.

6.4   Cybersemiotics and the Knowing of PaR

Of course, unifying theories are rather anathema in poststructuralist perspectives. However, consider two related issues that are omnipresent in PaR: 'embodiment' and 'nature'. The first is named frequently, but the second is comprehensively eschewed, even when implicit in discussions. The problem that has not really been worked through in relation to 'embodiment' concerns its fecundity. Frequently, PaR theorizing refers to 'embodiment' with reference to the materiality of practice, the fact that it often involves bodies and performance (Midgelow 2019; Brewster 2009; Borgdorff 2007). Yet such reference misses the opportunity to use the insight that has developed in the literature associated with 'cognitive science' where the idea of 'knowing' has been thoroughly released from its Cartesian mooring and repeatedly shown to be inseparable – as a process, act or instinct – from the bodies where such knowing must occur. As Hoffmeyer (2018) has recently explained, phenomena such as 'causality' are really only carried through the experiences of the body; yet they are assumed to be in the head because they are processes of knowing or understanding. In PaR theorizing, though, there is a frequent elision in the literature between *embodiment of phenomena in art practice* and *embodiment as knowing in the body*. There is acknowledgment that knowing might be embodied in practice; but seldom is there an explication or fruitful expansion of that observation. Two exceptions are: Melrose (2011), who makes a similar point to the one here, suggesting that 'embodiment' has become a shibboleth; and Nelson (2013), who makes the general proviso that, "By using the term embodied we mean to highlight two points: first that cognition depends upon the kind of experience that comes from having a body with various sensorimotor capacities, and, second, that these individual sensorimotor capacities are themselves embedded in a more encompassing biological, psychological and cultural context" (p. 48).

The vexed matter that Nelson is opening up can be seen in the first of the three contexts he mentions. For not only is the human body an issue, but knowing in all kinds of bodies must be germane to a theory of practice which touts its materiality as decisive. If this is the case, then nature as a whole – not just as it applies to the context of humans in society, but as the crucible of knowing in all species – cannot be dismissed as a mere construct in discourse. If PaR operates predominantly at the level of the nonverbal, then there seems to be little sense in failing to consider the status of nonverbality as a massive phenomenon comprising non-human animals. In contrast with much PaR theorizing, cybersemiotics (Brier 2008), embedding much of biosemiotics, compels a vision of life, consciousness and cultural meaning as constituted by the continuities of nature and evolution. It does this as a fully-fledged contribution to philosophy of science rather than a shrill protest at the traditional scientific hegemony. It certainly challenges physicalist science, with its ideal of third person knowledge. Yet it does so with an interest in elucidating the potentially neglected kinds of knowing that are involved in first person embodied consciousness – that is, the feelings and affects that are undergone, rather than just a 'third person' assessment of the mechanics and structure of the practice.

Cybersemiotics is therefore an example of what might be called a 'science of knowing'. The phrase comes from a paper by Kalevi Kull (2009) in which he identifies "Φ-sciences", characterized by universal laws and quantitative methods, and "Σ-sciences" concerned with local semioses and using qualitative research to investigate its 'objects'. In the latter, the point is to take into account the 'knowing' of both the organism and its environment. The organism is not treated as a mechanism or a function of its own physical engineering, but as a life form with senses or proto-senses. Yet, where Σ-sciences take account of the knowing of a non-human species, it is clear that humans cannot 'know' *on behalf* of the organism - they can only produce a 'copy'. That copy has customarily been verbal: sometimes in speech, but often in writing for more extensive dissemination. In these cases where a human makes such a copy in an account of a non-human organism, the human's physical apparatus for knowing dictates that anthropic knowing will be different from the knowing of the non-human with its much different physical apparatus. That is acknowledged in Σ-sciences because their focus is not at the level of the individual agent, finding out what each individual organism knows; instead, it is at the level of the species, positing the organism's knowing in particular instances (including first-person experiences or equivalent) based on what is generally understood of the species' capacity for knowing.

Now, in the case of the human artistic practitioner, attempting to know about non-human animals, similar problems prevail. In the case of the same practitioner attempting to know about other humans, it is still not automatically true that an accurate picture is easy to ascertain. However, at least humans share the same physical apparatus for knowing. As a result, a human-human account of knowing has the potential to be more insightful than a human-non-human animal one. That does not mean that it avoids having to deal with problematic relationships, of course. The social sciences, with their own human-human accounts, constantly attempt to negotiate the complexities of human agents and their environment. In PaR, the situation

is similar, in that taking 'knowing' into account will include the relationship between the materiality of the practitioner's working objects as well as the many first-person factors that make up the context of the practice. Moreover, PaR has certain advantages of knowing over the social sciences. PaR has facilitated a nonverbal 'copy' as well as, or opposed to, the verbal 'copy' upon which traditional research has relied. This enables PaR to 'report' on human phenomena of emotions, feelings, experiences and bodily sensations that cannot be expressed well in verbal form. Similarly, the sensitivity to nonverbality may profitably serve art-based human investigations into non-human knowing.

In the science of 'knowing' called biosemiotics which informs so much of cybersemiotics, the theory of *Umwelt*, introduced by the Estonian-born German theoretical biologist, Jakob von Uexküll is therefore central (Uexküll 1992, 2001a, b, 2010; Deely 2009; Kull 2001; Brentari 2015). *Umwelt* is the means by which organisms "capture 'external reality'" (Sebeok 2001, p. 21–2) in response to semioses. Most importantly, though, an *Umwelt* is composed by the circulation and receiving, insofar as it is physically allowed by an organism's sensorium, of signs. Thus, the *Umwelt* of the dog, partly derived from its acute ability to hear high-pitched sounds, differs qualitatively from that of the human whose hearing is focused on a lower pitch. The key point about the human *Umwelt* is that it is intricate and varied in comparison to other animals. Yet, it shares some aspects with other species. The concept of *Umwelt* is very useful in approaching an understanding of species' worlds; in the case of humans, though, it allows the investigation of the cultural propensity for projecting *possible* worlds: fictional projections, artistic projections, ethical projections, as well as those associated with logic and science. For cybersemiotics, too, the concept of *Umwelt* is crucial and is discussed, among other ways, with reference to Reventlow's study of sticklebacks (Brier 2008, p. 168).

As part of cybersemiotics' contribution to philosophy of science, *Umwelt* offers a powerful reminder that the senses of a species and its members are by no means to be neglected in gauging their knowing. This is not a difficult idea, nor is it problematic to see the matter in species terms: after all, no great feat of imagination is required to realize that a dog's sense of smell is central to its knowing. Likewise, *Umwelt* could be indispensable to PaR: Brett Buchanan (2008) has shown how the work of von Uexküll has informed that of Heidegger, Merleau-Ponty and Deleuze; rather than grappling with the way that such difficult neologised concepts as 'handlability' obscure von Uexküll's observations, it is surprising that PaR theory has failed to consult the original source of discussion on the senses and tactile dispositions. Of course, considering the connection of knowing to all living nature, whether through the concept of *Umwelt* or not, rather upsets the idea that the world is constructed in the human phenomenon of discourse. At the very least, in an *Umwelt* view, the world will be constructed through the senses, including those shared with non-human animals.

6.5 Transdisciplinarity and the "Cybersemiotic Star"

Much as *Umwelt*, as a concept, cuts through the thicket of confusion surrounding the relation of human senses to the apprehension of the world, it cannot represent the final word on organism, environment, cognition, signs and reality. None of these are issues to be settled by one discipline. For this reason, cybersemiotics is transdisciplinary, tracking those areas in the humanities and the sciences where there have traditionally been materialist, organismic orientations in understanding phenomena and where there have been semiotic, cognitive orientations, also seemingly dictated by the phenomena with which they have been most concerned. As Kathrine Johansson notes (2016, p. 7) in the *Cybernetics and Human Knowing* special issue on arts and cybersemiotics, human understanding of materiality has primarily been derived from the discipline of physics but the task is to link ontologies from the physical and technical sciences to the development of narratives concerning society and culture, as well as first-person experience. Nelson (2013), too, recognizes that "Hard knowledge and liquid knowing need not be seen as two sides of a binary divide" (p. 60). The task of linking ontologies, then, requires a commitment to transdisciplinarity, particularly to address the failure of all disciplines to recognize and adequately account for the first-person experience of fundamental feelings or qualia; indeed, this last observation could quite easily be incorporated into a manifesto for PaR in the section where 'knowing' and 'feeling' are discussed.

Cybersemiotics attempts to address the slow progress made, even among theories of embodiment, in understanding the role of emotions. It thus recasts the status of 'knowing' *contra* the computational information-processing paradigm. That is to say, cybersemiotics contrasts with – although does not abandon - those forms of third-person knowledge-enquiry where 'meaning' has no place. In physics and information theory, for example, what humans or other organisms know or feel about a process or an object is of absolutely no consequence. What is important to physics and information theory's enquiry is the 'third person' assessment of how something works or how it is physically constituted. Yet, as cybersemiotics insists, such a perspective is limited because, after quantum theory, even particles cannot be guaranteed to act in the ways that engineering would predict; and, after the notion of *Umwelt*, animals and humans cannot be defined as machines that are divorced from the configuration of their sensoria (Brier 2008).

So cybersemiotics has attempted to produce a perspective in which are synthesized the insights into systems, including living systems, which are offered by the traditional scientist pursuits of engineering and physics. These include observations on how matter and energy behave. Yet such observations are thoroughly tempered by philosophical and epistemological outlooks that embrace meaning, consciousness and culture. From the matter/energy perspective is gained the dimension of materiality; from the systems perspective, it is shown how embodiment – the fact that a body is needed for knowing to even take place – unites evolution and meaning; from the cultural perspective is given the domain of interpersonal

interaction and communicative relations; and from the inner world perspective the role of affect and first person experience is made visible. Brier's (2010, p. 1907–1911) "cybersemiotic star" sums up the synthesis.[1]

It is an approach to knowing which not only promotes forms of knowing – such as PaR - alternative to those of traditional science, but actually provides co-ordinates for thinking about the place of such forms of knowing in the universe. It is not simply a blanket antagonism towards physicalist views. Indeed, rather than providing another small narrative, what is probably most important about cybersemiotics for PaR is that it dares to provide a unified theory of PaR's central concerns.

6.6   PaR and Mediation Beyond the Human

Having so many seemingly discrete areas to cover, it is no surprise that the quality of knowing in relation to PaR is still under-explored, even though the institutionalization of practice is already somewhat underway in the Western academy. Elkins (2014b), in particular, is cautious, questioning whether definitions of research are settled – and whether that is a good thing – and whether 'knowledge' is sufficiently defined for adequate proceedings to assess PaR. Aside from cybersemiotics, one of the rare instances in which the quality of knowing within a wider perspective of human knowledge efforts is broached comes in an (again) admirably clear essay by Borgdorff (2011). Borgdorff rightly identifies PaR as being "at the interface of phenomenology, cognitive sciences and philosophy of the mind" in its concern with "non-conceptual knowledge and experience as embodied in practices and products" (p. 43). As with cybersemiotics, he then goes on to consider the wider context of human knowing: the humanities and its approaches; social sciences' qualitative research; and science and technology. Ultimately, he sees the concerns of PaR converging with those of phenomenology, focusing "attention on the nature of perception and the constitution of intentionality and normativity, beyond an ontology in which the world was thought to be independent of our situatedness" (Borgdorff 2011, p. 59). The non-conceptual bearing of PaR he sees as "materially anchored" but ultimately transcending the materiality of media (p. 52). It would be churlish to criticize Borgdorff's exposition, for it is exceptionally clear-headed and certainly much advanced on other work in its addressing of the broader realm of human knowing. Yet, still, it could go further.

Borgdorff's observations on the relation of PaR to traditional science's forms of knowing are betrayed by the second part of his subheading: "Science and technology". He notes (Borgdorff 2011, p. 52) that art practices are technically mediated practices, involving such paraphernalia as musical instruments, the physical properties of art materials, the structure of a building etc. He also refers to some affinities between scientific and artistic experiments (including demands of

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[1] See Chap. 2 in this book for a visual representation of Søren Brier's "Cybersemiotic Star".

reliability, validity, replicability and falsifiability). Moreover, it is true that he refers to bodily technique in dance. What is absent, however, is a more synoptic vision of mediation, allowing more opportunities for development. In the perspective of the Toronto School, as well as in cybersemiotics, the idea of technology would not be restricted to media that are external to the body; rather, the body is a technology in itself, in its movements and ambulations, for example, and also in sensory modes such as sight and hearing. The human shares some of these putative modalities with other animals and, furthermore, humans have extended them into new technologies: writing, print, painting, photography, digital computers and so forth. As Danesi makes clear in his contribution to the present volume, cybersemiotics significantly supplements biosemiotics in analyzing the continuity of knowing across the natural and artificial realms – that is, into the world of non-human organisms and machine knowing. This continuity is important in and of itself for PaR because the *context* of practice – for example, what technologies of the body or beyond are integral to the practice - is susceptible of severe underestimation. In addition, there is the danger of inculcating a view of practice that fosters a humanist conceit about the human's place in the world: separate from, and above, non-human animals and machines. Elsewhere (Cobley 2014, 2016), I have argued that the defense of the arts and humanities has been crippled by this conceit. More practically, it is important to consider the continuity and commonplace nature of knowing across life and into technology.

Now, perhaps more than ever, creative practice is being transformed by the low entry points for artistic enterprise. More affordable technologies mean that practitioners who would have been excluded from participation owing to various social factors, are able to produce estimable photography, film, typeset books, electronic music, light installations, and so on. One hesitates to suggest that this is a democratization on a par with the abolition of the high/low culture distinction effected so many years ago by semiotics, principally because many social and institutional barriers remain. Yet neglecting to consider it amounts to a serious oversight. In addition, in PaR's ruminations on materials, there is perhaps the need to more fully embrace the changes that are being wrought by ubicomp (ubiquitous computing, where environments are transformed into and navigated by way of computing interfaces) and the Internet of things (where devices, including household utilities, are controlled remotely and digitally). For de Almeida (2016), "the blending of information and communication technologies, with living and non-living matter, with human and non-human flesh produces a new kind of hybridization that has not been fully analyzed" (p. 27). For the present discussion, these two last points are indications of why PaR needs the kind of understanding, offered by cybersemiotics, that reveals knowing's much more comprehensive heritage, its cultural evolution and its prospects.

6.7   Continuity and Connection, Process and Practice

One further observation that must be made about a comprehensive, connected and continuous view of knowing concerns the senses and media. Although PaR has not necessarily been restrictive in its embrace of practices, without a more unified perspective on practice it is prone to isolate senses and media. In some discussions, there is the implication that certain senses fit with certain media and certain media fit with certain art practices. Such a view is inevitable when only shorthand accounts of practices can be given as commentaries on PaR attempt to be inclusive. Yet, there would seem to be a need for more circumspection on the reach of senses and media, in a way that a unified theory such as cybersemiotics allows (see Brier 2008, p. 68). Can it really be the case that only one sense or one dimension of tactility is involved when, for example, someone plays music? Just listening to Glenn Gould's grunting on recordings of him playing Bach's Goldberg Variations is enough to remind one that the senses do not operate in isolation. For those who saw him play live, his distinctive posture over the keyboard will have also been registered. The senses, then, can only *theoretically* be taken one by one or as indicative of one modality. In practicality, their connectedness and continuity, as well as their simultaneity, needs to be registered. So, too, can media or materials only be considered as potentially invoking the multiplicity of embodied modalities that exist in any putative, singular modality. Invariably, senses and media are not susceptible to anchoring in stable relationships or delimited and reified entities.

These references to connection and continuity in knowing rather than knowledge and outcomes, inevitably raise the question of what value is to be given to 'product' as opposed to 'process' in practice as research. This is an issue in much PaR theorizing and must be so because writings on PaR are frequently compelled to address institutional imperatives regarding what is actually to be audited or assessed. However, from Schön onwards there has been some disquiet over the fact that universities remain "committed, for the most part, to a particular epistemology, a view of knowledge that fosters selective inattention to practical competence and professional artistry" (Schön 1984, p. vii; Kemmis 1985). Barrett (2007, p. 4) invokes Bourdieu's concern "that because knowledge of the condition of production comes after the fact and occurs in the domain of rational communication, the finished product, the *opus operatum*, conceals the *modus operandi*". Because of the institutional imperative, such as the need of students to gain PhDs to mark their innovation and toil, understandably many seek to underline the importance of product. Nevertheless, many continue to emphasize that the process in practice needs to be considered closely *as well as* just the product. Nelson (2013, p. 64, 67), for example, insists that process should not be ignored and to do so in favor of simply assessing a product is to completely miss the point of PaR. This is not just a matter of the 'process' being analogous to 'methodology' in traditional work; it is because, as has been seen, the process in PaR is iterative and performative in itself, as Haseman (2006) and others assert. Carter (2007) is more forthright, still: "To understand the social value of what we are doing", he writes, "we need to study the process of creativity, rather than its outcomes" (p. 17).

In presenting PaR from a unified, cybersemiotic point of view, concerned with the quality of PaR knowing rather than administrative requirements, it has to be argued that process and product is somewhat of a false opposition. The first reason for this is relatively straightforward. It is because the kind of reified 'knowledge' encapsulated in the 'outcome', the 'contribution to knowledge' demanded in PhD regulations and by research councils, can only be a mere token of the wisdom-inquiry that Maxwell desires to see as the goal of universities. The greater part of the wisdom will reside partly in the response of audiences to the practice and partly in the process - procedures and explorations inherent in the practice. The second reason is less straightforward, but the point needs to be reiterated in strenuous terms, for it is the subject of obscure allusions in PaR commentaries whilst continuing to be counterintuitive to target-orientated policy-makers and educationalists. It is that the outcome of practice *is* the process. That is, as Carter states, the social value is to be found in the process. This is to say, in cybersemiotic terms, that process entails new paths into the further reaches of the human *Umwelt*. As I have argued elsewhere (Cobley 2016), it is human destiny to project new futures, through fictions, planning, ethics and the anticipation of new worlds: through exploration of the *Umwelt* that is afforded to humans by their sensoria. The 'product', if it truly constitutes new knowledge, should be focused on 'knowing how', learning how to learn, a means of navigating new regions of the species' potential.

The future-orientation entailed in the idea of 'process as outcome' is indebted here to von Uexküll and the contribution of his biosemiotics to cybersemiotics. Yet, also running through cybersemiotics is a commitment to the hylozoistic view that Peirce shares with Aristotle, the idea that all matter is in some sense imbued with life. Cybersemiotics shares with Peirce, among many other things (Brier 2017), the conception of matter as possessing an inner aspect of living feeling (effete mind) (Brier 2008, p. 27), qualia as central to human knowing (Brier 2008, p. 363) and an emphasis on semiosis as a process rather than the sign as an 'objective' product (Brier 2008, p. 32). These issues are very much complementary since they all suggest that knowing is a process that, yes, is certainly embodied, but, no, is not to be understood as inhering in humans alone or their brains. Peirce makes the point that, "Thought is not necessarily connected with a brain. It appears in the work of bees, of crystals and throughout the purely physical world; and one can no more deny that it is really there, than the colors, the shapes, etc., of objects are really there" (4.551).

In this light, process is absolutely integral to the discussion – not just as opposed to or supplementing the 'product' in PaR, but in the much wider sense witnessed by the growth of knowing. If PaR is really to fulfill its remit, then fidelity to this broader existence of knowing is essential. What the unified perspective of cybersemiotics allows is not just an apprehension of how *process* can be the ultimate goal of *process* rather than a reified outcome; it also offers the benefit of understanding and guiding practice in evolutionary terms.

6.8   Conclusion

This chapter has not so much been about how to teach and examine and assess PaR. It has taken the opportunity that cybersemiotics affords to open some discussion of the quality of knowing in practice as research. In reviewing some of the PaR theory, developed during a period of opportunity but also great duress in the academy, it has found that some of the debate in the area has been forced to be truncated and narrow. The most available intellectual tradition upon which PaR could draw was, perhaps, not best suited for the purpose of establishing a new paradigm in higher education and research. Whilst practice was able to take advantage of the dismantling of cultural hierarchies that had been inaugurated by semiotics, PaR theory was not always in the best position to capitalize on it. PaR theory inherited from the 'cognitive turn' the helpful insight that knowing is not a faculty lodged in isolation in the brain or mind, but requires a body and is distributed not just across that body but also often beyond it too. Yet, PaR also placed humans at the centre of knowing. This was understandable given that it was human practice that was at issue; but apart from failing to conceive of knowing in its broader nonverbal context, across species, it also inherited from the 'linguistic turn' and postmodernism the rather dubious belief that the world is 'constructed in discourse'. Such a narrow, anthropocentric purview, based on discourse and local knowledge (as opposed to 'grand narratives') has reached its apotheosis – and nemesis – in liberal appeals to human exceptionalism as a defense against government axes falling on the arts and humanities.

Cybersemiotics, it has been argued, as an intellectual champion of practice since at least the launch of the journal *Cybernetics and Human Knowing* 25 years ago, still has much to offer in advancing the cause of PaR. In its unified theory of knowing, it can guide PaR theory out of some of the cul-de-sacs and overgrown clumps in which it has found itself after pursuing materiality, mediation, modality, embodiment and nonverbality, sometimes as discrete entities and sometimes in an undertheorized fashion. More importantly, it has been argued that PaR is critical at the present moment, for reasons that cybersemiotics is better placed to elucidate. PaR amounts to an indication of the peril in which humans will place themselves if they neglect practice and the arts by dint of failing to see their role at the forefront of human knowing. Seeing PaR in a context that comprises what is known about matter and energy, the functioning of systems, continuity of phenomena across nature, cultural interaction and first-person experience – that is, in a cybersemiotic view – enables an understanding of PaR as knowing that is in complex relations with other knowing. PaR need not simply be posited as a neglected poorer cousin or even as an anti-science position. Instead, it can stand up as an almost immeasurable contribution to the furthering of the human *Umwelt*. If such terminology is too obscure or not to an audience's taste, then it can be said that practice contributes to human evolution. The problem, of course, is that arguments about long-term benefits are often difficult to make.

Cybersemiotics in respect of PaR, as Johansson (2016) observes, seeks "new important questions that are not necessarily utility-based, and based on a simple, short-sighted frame" (p. 6). Product and short-term value are in demand in the contemporary world, of course; yet, neither the arts, nor the humanities or practice are able to regularly deliver on such demands. The work to make the processual aspect of PaR more appreciated will continue to be very arduous. Merely posing the argument that practice furthers the *Umwelt* or that the process can be the outcome of practice is challenging enough. However, cybersemiotics' placing of PaR knowing within the context of ways we have enhanced knowing as a species to date, at least exemplifies one common experience of the higher learning: that the more you learn, the more you realize you need to learn. Borgdorff (2011) articulates a similar argument: "Especially pertinent to artistic research", he writes, "is the realization that we do not yet know what we don't know. Art invites us and allows us to linger at the frontier of what there is, and it gives us an outlook on what might be" (p. 61). What the outlook for PaR will be depends upon how much humans are prepared to know.

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