

14 Valuography

Studying the making of values

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Proposing valuography

Many profound concerns in the life sciences and medicine are linked with the enactment, ordering, and displacement of a broad range of values. In the introduction (Chapter 1, Dussauge et al., this volume) we put forward three concerns regarding how stakes are made, the intertwining of values and the epistemic, as well as the relationships between economic and other values. We further articulated a pragmatic stance on the study of value making in society at large.¹ In this conclusion, we propose a number of analytical and methodological means to deal with these concerns.

We propose the word *valuography* to indicate a programme of empirically oriented research into the enacting, ordering, and displacing of values. We think of *valuography* as the study of value practices following the same broad ‘ethnographizing’ and estranging move that several scholars have previously suggested. For example, Peter Dear (2001) has suggested ‘epistemography’ to designate ‘an enterprise centrally concerned with developing an empirical understanding of scientific knowledge’ (Dear 2001: 131) and Steve Woolgar has suggested ‘technography’ to refer to the analytically sceptical study of technology (Woolgar 1998). In a similar vein, Michael Lynch recently proposed ‘ontography’ for ‘historical and ethnographic investigations of particular world-making and world-sustaining practices that do not begin by assuming a general picture of the world’ (Lynch 2013: 444).² We take *valuography* to be an

¹ By the notion of pragmatism, we refer principally to John Dewey (1913, 1939) and his followers and to their tying of values to practices, specific situations, and subjectivity. In Dewey’s view, values do not precede action, but are instead inseparable from their active articulation, for example, in the form of practices of valuation; see, for instance, (Dewey 1913, 1939; Joas 2000; Muniesa 2012) as well as the introduction (Chapter 1, Dussauge et al.) to this volume.

² Other similar examples are Steve Woolgar’s proposal of ‘scalography’ for studies of the cultural specificity of the concept of scale (Woolgar 2012: 36) and Michael Lynch’s proposal of ‘ethigraphy’ for the study of how some things come to be considered ethical (mentioned in Lynch 2013).

empirically oriented and analytically sceptical research programme of values as enacted.³

We argue that a valuographic programme makes it possible to take an interest in values while moving away from the question of what values ‘really’ are. This stance remedies some central problems that arise with approaches depending on stabilized understandings of value and values.⁴ In this chapter, we will also discuss why our proposed form of methodological agnosticism for the study of values does not translate into a programmatic nihilism.⁵ At its heart, a valuographic research programme encourages us to examine how certain things come to be considered valuable and desirable, as well as how certain registers of value are ordered and displaced. We further argue that a valuographic research programme as envisioned here has to symmetrically examine whatever is included as well as excluded as pertinent values in a given process (cf. Galis and Lee 2014). Finally, the sceptical attitude encourages a sense that these matters could be, and sometimes indeed are, otherwise (Woolgar 1988).

Valuographic tactics: Multiplicities and instabilities matter

Our valuographic research programme embraces the idea that values do not exist as transcendental entities, impinging themselves upon our actions. We take as a starting point the fact that we can examine the taken for granted and putatively stable and demonstrate how things can be otherwise. This entails moving into positions that enable us to see values as enacted, ordered, and displaced rather than as fixed and constitutive forces. In short, our programme

³ Using the word ‘enacted’ is, as Lezaun and Woolgar note regarding the study of ontologies, helpful in that it ‘emphasizes the generative power of the practices involved in the constitution of reality’ (Woolgar and Lezaun 2013: 324).

⁴ Here, approaches using the lenses of, for instance, ‘capital’ or assets come to mind, as well as some uses of the notion of moral economy. In these approaches, values are primarily used to denote a given set of values that guide action.

⁵ Central tenets of science and technology studies (STS) articulate a broadly agnostic stance on the study of science and technology. This agnostic stance entails, among other things, a reliance on the principle of symmetry (Bloor 1976), which implies a neutral examination of what is considered scientific knowledge. Rather than trying to identify various sources of bias only in what are later identified as subjective knowledge claims, this principle encourages the symmetrical examination of whatever participates in establishing what come to be considered objective or subjective knowledge claims. This does not, however, imply a value-free approach to science; instead, Bloor and the SSK (sociology of scientific knowledge) programme often endeavour to include an analysis of society and science that rehabilitates weak actors (Pestre 2013: 208 ff.). The repurposing of such tenets in developing a broadly pragmatic approach to the study of values thus brings with it a certain agnosticism vis-à-vis values.

is an invitation to study the making of values. Below we outline a few approaches to apprehend values-in-the-making. We list a number of approaches, sites, and situations in which what are considered values can be rendered unstable. We wish to grapple with ways of attending to value articulations provoked by such instability, to ask questions about how these practices are configured, and to address how the configurations of practices in turn shape the values in play.

Attending to the multiplicities of values, the frictions that arise from them, and the concomitant articulation work performed by involved actors offers a key entry point to examining the instability of values.⁶ The simultaneous presence of various values, and the articulations that this multiplicity evokes, can be explored in a wide variety of sites and situations.

What appears to give a particularly strong foothold for the making of valuographies is the drawing of attention not primarily to the ordering consequences of any stabilized values, but rather to the numerous and multi-faceted frictions that come into view due to simultaneous efforts to enact different values.⁷ One example here is the frictions between efforts to enact biocapitalist values pertaining to ‘production, profit, and novelty’, and efforts to enact genetic values pertaining to ‘reproduction, management, and responsibility’ in the conservation of endangered species (see Chapter 8, Carrie Friese, this volume). Furthermore, attending to the multiplicity of values in play exposes frictions between efforts to enact different notions of what is considered the proper method and goal of research (see Chapter 11, Francis Lee, this volume). Below we give a few tactical tips on how to attend to the multiplicities of values: where to look; how to investigate; what to look for.

HEEDING THE SETTLING OF COMPENSATION

The establishment of various forms of compensation provides a framework that allows the examination of values. Compensation could concern goods pricing (e.g., cod pricing as discussed in Chapter 9, Kristin Asdal, this volume) or the rewarding of individuals or organizations (e.g., physicians, researchers, and/or hospitals and clinics, as examined in several chapters in this volume) for services rendered. Compensation could also take the form of promises of future settlement (e.g., efforts to create a market for malaria vaccine described in Chapter 7, Daniel Neyland and Elena Simakova, this volume); or non-financial

⁶ There is a clear affinity here with the methodological tool of *ontonorms* proposed by Annemarie Mol (2013).

⁷ The notion of moral economies in science (see the introduction, chapter 1) is, in several ways, a helpful sensitizing mechanism for appreciating that many values are simultaneously in play. However, Daston’s (1995) notions of values and moral economy instead evoke attention to stability rather than unsettledness.

forms of reputational reward such as ‘the good guy benefit’ (Chapter 7) and co-authorships (see Chapter 2, Sergio Sismondo, and Chapter 12, Claes-Fredrik Helgesson and Linus Johansson Krafvé, both this volume).

Another fruitful line of inquiry would be to attend to regulatory struggles to settle what ‘fair market value’ might be, as in delimiting bribes and fair compensation for so-called Key Opinion Leaders (Chapter 2) or in providing Dutch health care (see Chapter 6, Teun Zuiderent-Jerak, Kor Grit, and Tom van der Grinten, this volume).

We argue that the struggle over compensation provides an excellent opportunity to examine many different values. Although compensation at times involves financial considerations, it never exclusively concerns economic value. Clearly distinguishing between the financial and non-financial rarely appears to make analytical sense when it comes to trying to understand the particular practices of settling compensation. Even establishing the prices of goods for market exchange is far better appreciated if we break Parson’s pact (for an illustration, see Beckert and Aspers 2011; see also introduction (Chapter 1, Dussauge et al., this volume) and Stark 2000).

Highlighting situations in which compensation is negotiated and established alludes to valuation as a promising ‘flank movement’ (Muniesa 2012), countering the notion of values as transcendental and fixed entities that impinge upon actions. In brief, the practical grappling with compensation appears to epitomize a situation in which what are considered values might become unsettled. Investigating such situations directs attention to the agencies, relationships, settings, procedures, and devices involved in enacting, ordering, and displacing values.

STUDYING DEVICES AND THEIR CONSTRUCTION

Devices provide a second type of approach in making valuographies. This draws on the primary assertion that devices are far more than mere neutral props in the making of values (see, e.g., the algorithms for allocating transplant organs discussed in Chapter 5, Philip Roscoe, this volume).⁸ Examining the

⁸ One central tenet of STS has been to make epistemology and ontology into empirical research programmes by drawing attention to the role of technical practices. The detailed scrutiny of the role of such practices and of the required mechanisms has provided another generalized and central way to substantiate the notion that ‘things could be otherwise’. The examination of the role of mechanisms in transporting and transforming observations has, for instance, been central in studying the shaping of scientific knowledge (see, e.g., Latour 1999a).

The role of devices in shaping reality has also been widely addressed in STS. This is particularly clear in the study of markets, where it has been argued that the use of calculative devices might help shape the market to conform better to the theory that informed the device (i.e., the performativity thesis of MacKenzie and Millo 2003). More broadly, devices have been invoked to help us understand how markets and market actors are shaped (Callon et al. 2007). In this, the notion of *agencement* has been

deliberations on the construction of different valuation devices can position a study to make sense of how various values are articulated, translated, and transplanted into devices, and of the subsequent practices of which they would become part (this is largely in line with the notion of market devices suggested in Muniesa et al. 2007).

An infinite number of devices can be explored in making valuographies. Devices can appear in the guise of kinship charts and studbooks for breeding that construct the 'genetic value' of endangered species at zoos (see Chapter 8, Carrie Friese, this volume). They can be bureaucratic devices for establishing a malaria vaccine market (see Chapter 7, Daniel Neyland and Elena Simakova, this volume). Even policy documents can act as devices guiding the innovation of both markets and biological species (see Chapter 9, Kristin Asdal, this volume).

For valuographic purposes, it is crucial to note the *translational*, or reconfiguring, quality of devices. To cite an example, devices for allocating transplant organs reconfigure values, where notions such as good clinical practice, equity, and utility are shifted through models, simulations, and algorithmic protocols (see Chapter 5, Philip Roscoe, this volume). A device, as Roscoe puts it, 'not only dictates who receives, but also what matters' (see Chapter 5). A further illustration is how market devices for allocating hospital care have actually enacted values other than those intended by the policy (see Chapter 6, Teun Zuiderent-Jerak et al.). While the policy aim was to increase incentives for quality improvement through diversifying Dutch hospitals, deploying the device produced the very opposite result, producing a set national standard for care quality. The devices seemed to undo the very values that they were supposed to strengthen.

EXPLOITING CONTROVERSIES

Controversies are prime arenas for surveying the articulation of various conflicting values, simply because central registers of value often are at stake in such situations.⁹ They provide access to conflicting articulations of what will serve as

proposed to envisage actors as made up of and shaped by assemblages of human bodies, tools, devices, algorithms, etc. (Callon 2005). The notion of *agencement* directs attention to the socio-technical arrangements in actors' capacity to act and to the attribution of meaning to action (MacKenzie 2009b). In STS-informed social studies of finance, this notion has been used to examine how actors' actions and meanings are shaped by their being equipped by material and conceptual devices embedded with notions and algorithms from financial economics: 'At its most basic, a human being equipped with a financial calculator is a different actor from one without one' (MacKenzie 2009b: 23).

⁹ Using controversies as an evocative resource is akin to how the study of controversies has been used in STS to examine the making and unmaking of knowledge claims (see, e.g., Collins 1981). Regarding values, this approach is related to the notion of examining disputes to access different modes of justification (Boltanski and Thévenot 1999).

central values and—through the dynamic course of the controversy—settle what come to be the most important values.

Controversies about values can treat topics ranging from what ought to be proper conduct and the proper use and distribution of resources, to what information and knowledge is valuable. Conflicts can range from disagreements in medicine about what are considered proper interactions between physicians and the pharmaceutical industry (as explored in Chapter 2, Sergio Sismondo, this volume), and conflicts about how to properly use available coastal water in cod farming (as examined in Chapter 9 by Kristin Asdal), to disputes about gathering information about fetuses that were part of the development trajectory of prenatal diagnosis (Chapter 10, Ilana Löwy, this volume).

The study of controversies also provides insight into the mutability of values. Both the values enacted and the topic of controversy can undergo significant changes during a controversy. The unstable quality of the values enacted in a controversy is well illustrated by conflicts over publication priority, for example, as examined in Chapter 4, Sven Widmalm, this volume. Widmalm describes a large and prolonged conflict over what should be considered proper conduct for scientists. The controversy was settled in a manner that saved the face of the purported violator while demonstrating the vigilance of the scientific community. In short, while the unfolding controversy enacted values related to the proper and improper conduct of a scientist and a journal editor, the settlement enacted the value of a trustworthy and vigilant scientific community.

This example illustrates, first, how conflicts evoke rich articulations about the values at stake and, second, how the course of the controversy might shift the most important registers of value. Shifts in the values that appear central in controversies underline the general valuographic point of seeing values as enacted in social processes rather than as fixed and transcendental forces.

TRACING THE TEMPORAL INSTABILITY OF VALUES

Most things change over time. Another approach to making a valuography is accordingly to scrutinize enactments of values over time, how they change, come into conflict, and are reordered.¹⁰ The instability of values over time

¹⁰ This approach echoes a recurrent strategy in STS, in epistemological explorations of how knowledge is historically situated, which examines how what constitutes scientific knowledge changes over time. Nuclear missile accuracy, to cite one example, is, as Donald MacKenzie demonstrated in his historical sociology *Inventing Accuracy* (MacKenzie 1990), very much a contingent and precarious achievement shaped by a complex set of processes of diverse political forms. Steven Shapin's *A Social History of Truth: Civility and Science in Seventeenth-century England* (Shapin 1994) provides another telling digest of such a position.

powerfully counters any notion that values are transcendental and fixed entities.¹¹

Longitudinal studies are the obvious gateway to examining changing enactments of values over time. These can, for instance, examine the development and transformation of prenatal diagnosis and the values enacted in the shaping of this technology by various groups (see Chapter 10 by Ilana Löwy). Another temporal gateway to examining the enactment of values is to study efforts to shape the present by projecting possible and desirable futures (see, e.g., Brown and Michael 2003). For valuographic purposes, this can be explored by examining attempts to create a market to stimulate medical development (see Chapter 7 by Daniel Neyland and Elena Simakova); by studying efforts to shape the future role of genetics in endangered species conservation (see Chapter 8 by Carrie Friese); and by exploring efforts to realize a future and market for farmed cod (see Chapter 9 by Kristin Asdal).

An appreciation of temporality attuned to studying values in practice can expose the various shifting values in play and how their enactment and displacement shape and solidify programmes of action in health care and life science. ‘Gerundizing’ the notion of moral economies in science (Daston 1995)—studying the actors’ ‘moral economizing’ (discussed previously in Chapter 1, the introduction to this volume)—is in our view precisely well adapted to examining such shifts in the enactment and ordering of values.

MAKING COMPARISONS

Employing comparisons, such as examining the enactment of values in different settings or situations, is another valuographic approach. Giving a study a comparative outlook enhances the possibility of appreciating multiplicities of values.

One exemplar study that implements a nearly valuographic research programme, using a comparative approach, is Marion Fourcade’s (2011b) study of how the (economic) value of damaged nature was determined in oil spill catastrophes, one in Alaska, USA, and two in Brittany, France. Fourcade traces, in detail, the valuation practices, actors, and techniques involved, and demonstrates not only that damaged nature was attributed quite different economic values at the two sites; more importantly, she demonstrates how and why different registers of value and techniques were in play in settling these values. The benefits of comparative studies for making valuographies is more generally emphasized in a recent general review and discussion of the emerging field of the comparative sociology of valuation (Lamont 2012).

¹¹ In history, the Annales School springs to mind as particularly emphasizing the need to attend to the beliefs and values of the time examined in order to understand the past (see, e.g., Burke 1990). However, their view of values emphasizes fluidity much less than does the approach proposed here.

Using a variety of sites and situations could provide comparative leverage in valuographic work. One can compare different research endeavours, for example, examining the variety of arrangements used to transfer data in different large-scale clinical registers (see Chapter 12 by Claes-Fredrik Helgesson and Linus Johansson Krafve). Comparative leverage can also be gained by comparing how long-term research collaboration between a leading researcher and a pharmaceutical company is presented differently by the two collaborating parties (see Chapter 3, Christer Nordlund, this volume). Finally, one can compare how the same large-scale research endeavour is assessed differently by two funding bodies (see Chapter 11 by Francis Lee). Comparative leverage allows one to examine how and why different registers of value can be in play in similar or related sites and situations.

The main advantage of the comparative approach is that it provides a powerful way to investigate how value enactments can indeed be ‘otherwise’ in different settings. It provides material for making a valuography that challenges the idea that certain values are ingrained in the very nature of the setting investigated. In short, comparisons invite us to think about sites and situations that are similar, yet evocatively different.

A REFLECTION ON VALUOGRAPHIC TACTICS

The central valuographic starting point is to investigate values as enacted in specific sites and situations, rather than assuming that they are fixed, constitutive forces. Emphasizing ways to examine values has offered a method to move beyond the question of what values ‘really’ are. However, two matters related to such a move merit comment.

First, it must be stressed that the list of tactics useful in making valuographies is certainly not exhausted by the five mentioned above. Indeed, there is a great need to develop additional ways to examine values-in-the-making. These additions would increase our appreciation of how values come to be settled in various sites and situations. Such work on a valuographic toolbox is important for increasing the ways we can examine the multiplicity of values and the variety of situations in which this can be done.

Second, it must be stressed that reliance on various valuographic tactics provides for an appreciation of values as enacted. Exploiting these tactics in examining the unsettledness of values in controversies or in the settling of compensation will doubtless provide important insights into values-in-the-making. However, we must avoid the temptation to too eagerly transpose what such valuographic inquiries yield into grand theories about values in general. A certain degree of modesty is not only becoming, but is helpful in truly appreciating or grappling with the multiplicity of values in various sites and situations.

Valuographies and matters of concern

The valuographic approaches suggested above facilitate the investigation of values in a number of sites and areas pertaining to the production of scientific knowledge or the making of highly specialized valuations through employing sophisticated calculative devices. In the introduction (Chapter 1, Dussauge et al.) to this volume, we formulated three main areas of concern in relation to the making of values in the life sciences and medicine. These were concerns related to how stakes are made; the intertwining of values and the epistemic; and the relationships between economic and other values. We can now think of these as providing direction and meaning to the development of a strong critique, given the possible weakness that might come from a purely pragmatic stance.¹² It is time to return to these concerns, and to highlight how a valuographic research programme might help direct and stimulate attention to these pressing concerns.

POWER AND POLITICS

Enacting values is one way of producing *stakes*—i.e., matters of concern or care. What is supposed to be at stake, and what is at stake, in the life sciences, techno-science, and society at large is the object of intense politics. Being attentive to the multiplicity of values that are enacted provides critical and analytical leverage regarding issues of power and politics in the life sciences, techno-science, and society. Switching to emic registers of values fosters sensitivity to the myriad ways in which values are implicated in politics and power struggles. What seem to be coherent and rational processes of valuation are always already political battlefields. The aim with our programme is to show how a number of different values may be at stake in seemingly technical and mundane decision making regarding matters such as efficiency, safety, and quality of care.

Furthermore, addressing stakemaking in practice allows us to understand how matters of concern or care are constructed on at least two levels: first, there can be *conflicts about what the concern is*; second, there can be *conflicts about the correct way of assessing* a stake along a settled register of value. Here we acknowledge that actors will have varying stakes in different issues, as well as different ways of assessing these issues. For example, in the 2011 Fukushima disaster, the stakes differed greatly between actors—families worried about

¹² Luc Boltanski (2013) has discussed the various merits of a *critical sociology* and a more pragmatic *sociology of critical practice*, arguing that the latter, while well attuned to appreciating the struggles of ordinary actors, ‘did not succeed in fostering a form of critique of more salient potency that could supply actors with the resources needed to reinforce their critical will and their critical efficiency’ (Boltanski 2013: 48).

radiation doses; tour operators worried about the dropping number of tourists; and local governments worried about the depopulation of their constituencies (see Chapter 1, introduction to this volume). These are worries of the first kind, concerning what is at stake. But in Fukushima there were also worries of the second kind, concerning what constituted a safe radiation dose. Should the inhabitants of Fukushima stay in their area and continue with their lives, or should they go, leaving behind their lives and starting anew?

The performance of values is also a matter of stakemaking. This makes the valuographic approach to examining the unsettledness of values a gateway to examining the making of stakes and hence the politics of life sciences, techno-science, and society at large.

ECONOMIC AND NON-ECONOMIC VALUES

Distinctions between what are deemed economic, cultural, and medical values are made in practices. It is therefore pertinent to examine how certain matters come to be considered economic values and how they might come to be juxtaposed or subordinated to—or indeed take the place of—other values. Using a valuographic approach, we can address how economic value is *made* through complex entanglements with values that are not ‘economic’.¹³

Our point is that the study of values-in-the-making simultaneously allows us to appreciate the enactment of different registers of value. With a valuographic approach to the practices of life science, techno-science, and society, value hierarchies are not seen as predetermined. The importance of different values is something settled as part of the action, rather than being something that exogenously settles the action. This further implies that the practices of making (or unmaking) distinctions between different registers of value in themselves become subjects for empirical investigation. For example, how are financial, medical, or scientific values related to drug development? Are they differentiated or seen as interlinked? (See Chapter 7 by Daniel Neyland and Elena Simakova for a study of this.)

The notion of *relational work* proposed by Viviana Zelizer (Zelizer 2005, see also Bandelj 2012) to address the varied practices by which people in intimate relationships differentiate and maintain social ties can provide inspiration here. It is precisely this kind of pragmatic attention to such practices that can allow a valuographic research programme to examine the enactment of economic values alongside other values. In the life sciences, techno-science, and society at large, the composition of values—i.e., the making of distinctions

¹³ Of course, the very categories ‘economic’ and ‘other’ are clumsy placeholders used in studying the making of these categories in practice. See the introduction (Chapter 1, Dussauge et al.) of this volume for more discussion of this matter.

between values, the hierarchical ordering of them, and the establishment of possible commensurations—provides a good position for examining how the economic is made to matter in society. With inspiration from Stefan Helmreich (2008), the valuographic approach allows us to move beyond notions wherein economic value, capital, and assets are seen as stable signifiers of value, to instead compose empirically sensitive and analytically sensible accounts of how economic and other values are made and differentiated in practice.

KNOWLEDGE AND VALUES

Different registers of value are enacted and ordered alongside any project of knowledge production. New knowledge and technologies might inspire efforts to articulate and enact certain values and to displace others. There is an urgent need to challenge the idea, cherished in many instances, that scientific knowledge is unconnected from values.

A valuographic research programme entails asking how values are enacted in sites of knowledge production such as laboratories, government statistics offices, and market-research enterprises. While retaining an interest in knowledge production and an emphasis on knowledge as a precarious and contingent achievement from the sociology of scientific knowledge (SSK); (see e.g., Bloor 1976), a valuographic research programme needs to depart from the traditional inclination of SSK to treat the values (and interests) of a certain set of powerful actors as determinants of the knowledge produced. Our concern directs our attention to how values and knowledge are precarious outcomes of contingent practices rather than assuming that values are the impetus shaping knowledge (see Chapter 13, Isabelle Dussauge, this volume, for an example of this).

A valuographic approach can, in our opinion, sensitize investigations to the multifaceted relationships between facts-in-the-making and values-in-the-making. In this way, we can benefit from the contribution of SSK to establishing scientific knowledge production as a crucial area for critical empirical study, extending its scope to examine how knowledge production involves enacting values and making distinctions between what are deemed values and what are deemed facts. In short, a valuographic research programme permits the empirical investigation of value enactment in matters of epistemic concern.

VALUOGRAPHIES AND WORLD-MAKING

Annemarie Mol (2013) recently discussed how the enactment of particular versions of objects simultaneously enacts particular ‘ontonorms’, normativities, and registers of values. Using the case of dieting, she examines how food

is treated so as to affect the registers of value enacted: activities that treat food as calories enact foods as fuel (calories) and valorize restraining oneself from supplying more to the body than is consumed. Activities pertaining to the 'food pyramid' cast food as mere nutrients, enacting a register of values related to the cognitive control of ingestion. In short, what food is made to be mobilizes various metrics and values concerning what constitutes proper and good dieting behaviour.¹⁴

The 'turn to ontology' (Woolgar and Lezaun 2013) opens avenues for exploring how the enactment of ontologies is interrelated with the enactment of values (Mol 2013). In short, this turn lets us explore the intersections between an ontographic (Lynch 2013) and a valuographic research programme. Such links can appear in the form of overt interventions, for example, when devising devices for allocating transplant organs (see Chapter 5 by Philip Roscoe); in more mundane forms, for example, in tending tomato plants in an effort to make them productive (Heuts and Mol 2013); or indeed as emergent in co-modification processes that transform something into a valuable commodity (Chapter 9 by Kristin Asdal). Practices enacting and shaping certain realities can in many ways be linked to the enactment of values. This means, we believe, that an empirically oriented ontology research programme would benefit from an empirically oriented research programme examining values.

Commitments and challenges: How can a valuographic research programme matter?

We have illustrated above how addressing contingency—i.e., matters that 'could be otherwise'—is a compelling research strategy for examining how values are enacted. It should be increasingly clear that a valuographic research programme addresses classical concerns of politics in the life sciences as well as in techno-science and society at large.¹⁵

¹⁴ A key part of turning ontology into an empirical research programme within STS has been to examine how things and realities may be multiple and far from as unified as is often assumed. Entities not only 'can be otherwise' but can, in various practices, simultaneously be otherwise—that is, they can be enacted to be distinctly different versions of themselves. Arteriosclerosis, to cite one example studied in detail by Annemarie Mol, can in this way be treated as something that is done, stabilized, and constrained differently in different clinical practices (Mol 2002). The basic idea here is to investigate how objects (both mundane and scientific) are made multiple and the consequences of doing so. This, then, is an ontological version that stands in contrast to a more epistemologically oriented approach investigating how objects are perceived differently from different perspectives.

¹⁵ To us, it seems as though the devising of constructivist perspectives on facts and technologies can only prise open the black box of politics to a certain degree. Calls to address the politics of techno-scientific work abound, addressing matters of concern (Latour 2004), matters of care (de la Bellacasa

Now we wish to ask what a pragmatic *commitment* might look like—without reifying stable value categories stemming from the nineteenth century. This question relates to our three broader concerns with *stakemaking*, the *economic*, and the *epistemic* outlined in Chapter 1, the introductory chapter of this volume and above. Our starting point has been the life sciences, but we believe that a pragmatic take on our three concerns—our three commitments—is relevant to understanding a society saturated with debates and controversies pertaining to values more broadly.

We propose an analysis of the making of values—perhaps guided by our three concerns—to gain analytical purchase on the slippery politics of today's society. We suggest that the analysis of values-in-the-making provides a tool useful in apprehending the complexities of politics and power in a society increasingly characterized by intricate webs of relationships—often economic or scientific—alongside opaque valuations that increasingly depend on 'judgment devices' that materialize credible knowledge (Karpik 2010). We also propose that, by approaching values-in-the-making, we could begin to understand the proliferation of valuations in society (Kjellberg et al. 2013)—even in popular cultural phenomena such as reality shows and competitions.¹⁶ Our point is that value practices are a diffused and important aspect of social life and how politics are done. We propose that analysing value practices in light of our concerns—in stakemaking, in the economic, in the epistemic—could allow us to engage more fully with the politics of a society increasingly obsessed with values.

Characterizing and understanding values in a society that works through assemblages of contracts, machines, and networks is a complex and difficult matter. Classic social analysis applying a Marxist reading of values becomes increasingly problematic in a society where local workers are subcontractors for global franchises, pension funds (for the same workers?) are ravenous capitalists—mediated via diffused ownership, and an identity of belonging (to the working-class?) fills people with discomfort (on the discomfort of belonging, see the introduction in Karpik 2010).¹⁷

As outlined in Chapter 1, the introductory chapter, we wish to carefully approach values-in-the-making without succumbing to our own—or others'—pre-stabilized analytical categories. By following the value practices of contemporary society, by

2011), concerned groups (Callon and Rabeharisoa 2008; Galis and Hansson 2012), standpoint epistemologies (Harding 1991), situated knowledges (Haraway 1988), and ontological politics (Mol 1999). It seems as though looking at the construction of facts and artefacts does not satisfy the thirst to understand the politics of techno-science.

¹⁶ We want to thank Jonas Bååth for bringing to our attention how widespread the performance of valuation has become in popular culture, as seen in shows such as *Hell's Kitchen* or *American Idol*; (on valuation as a voyeuristic spectacle, see Muniesa and Helgesson 2013).

¹⁷ This uneasiness with Marxist social analysis corresponds to uneasiness with approaches attempting to grapple with biocapital in the contemporary life sciences (Helmreich 2008).

following the making of stakes, the drawing of boundaries, and commensurations of value, we might gain a different understanding of the politics of power that complements a classical analysis of labour, capital, and assets (cf. Birch and Tyfield 2012). This move would entail tracing organizations, processes, devices, the shaping of actors, and translations of values. It would further entail describing the multifarious conflicts over values that penetrate and permeate welfare systems, global corporations, NGOs, and public discourse.

REFLECTING ON THE ONTOLOGICAL POLITICS OF VALUOGRAPHY

What does an analysis attempting to eschew pre-stabilized analytical categories hide? What are the consequences of an emic valuography as a ‘social and political posture’ (Pestre 2013)? Having an emic outlook on the world is not innocent. Doing emic analysis—backgrounding the agency and categories of the researcher—is a choice rife with politics. The risk of an emic perspective is that we might fashion our analysis in the form of Boyle’s ‘modest witnessing’ in attempting to efface our agency from the analysis (Haraway 1997; Shapin 1984). As Dominique Pestre has argued, and as has been debated in social science for decades, in performing an emic analysis we are creating a certain story:

[...] we select our players (and forget a lot) and endow specific properties (at the expense of others) because we cannot not simplify things, because we have limits, because we have an idea of... what ‘understand’ means—because, as humans, we cannot grasp everything (and even less in a narrative, which is necessarily linear) and we want to, consciously or not, emphasize certain points, some connections, some reconfigurations. (Our translation, Pestre 2013: 210)

What Pestre points out is the need to acknowledge our situated and partial perspectives (see also Haraway 1988). In any analysis, researchers need to strategically find ‘the right balance between the views of the people they study and their own’ (Löwy 2010b). We advocate treating the agnostic approach as a critical device for empowering the weak and revealing the constructed nature of weakness (cf. Galis and Lee 2014). In this sense, our valuographic approach to contingency is a call for questioning the power of taken-for-granted values in the world. In liberal democracies, there seems to be an increasing technocratization of values (e.g., the increased use of cost–benefit analyses or algorithms for political decision making) and thereby of choice. By questioning the taken-for-granted value enactments in society, we wish to bring to light the political nature of valuation, desire, and values.

The second issue we want to raise is that an agnostic approach to values-in-the-making must not embrace nihilism. Our argument for a methodologically emic stance on a valuographic research programme has deliberately been

combined with emphasizing concerns related to stakemaking, the economic, and the epistemic. We care deeply about the liberal democratic technocratization and depolitization of values, i.e., the moving of choice, value, and politics to arenas dominated by notions such as efficiency, optimality, risk minimization, and market competition. We want to question our and society's taken-for-granted notions of value by staying sensitive to the making of value. As in all social science, choosing one's valuographic concerns—i.e., empirical area, emotional motivation, and methodological choice—will determine the nature of one's research. As Galis and Lee have argued elsewhere, 'constructing stories is a political activity. So choose your starting point wisely' (Galis and Lee 2014).

The third issue concerns the risk that a pragmatic and emic approach might provide insufficient resources to allow actors to perform a substantial critique (see Boltanski 2013). Our emphasis on our concerns is intended to provide direction here. In addition, we appreciate the usefulness of remaining unfaithful and only partially committed to an emic register of analysis. In our view, the researcher must move strategically between using the emic device to subvert pre-stabilized values and unfaithfully using other devices to demonstrate how 'macrologies' structure values-in-the-making—to recall Pestre's (2013) invocation of Gayatri Chakravorty Spivak. In the ideal case, a valuography goes hand in hand with the strategic demonstration of violence and of the oppression of the weak.

Modes of intervention

How could a valuographic programme add to the issues it addresses? How would it intervene in stakemaking? What repertoires of intervention, mattering, and care does a valuographic research programme allow for? Here we join a number of scholars in asking how a pragmatic stance on values in technoscience, epistemology, and ontology can intervene in the fields that we study: How can we as social scientists provide a situated intervention into the value practices of contemporary society (Zuiderent-Jerak 2015, in press)? How can we as researchers of techno-science matter (Law 2004)? How can we interfere or 'diffract' (Haraway 1992)? How do we do an ontological politics intertwined with a logic of choice (Mol 1999, 2008)? How can we care (de la Bellacasa 2011)?

For us, one way to approach these questions has been through thinking about stakemaking through values. How are stakes made? How are they agreed upon? How are they disagreed on? How are boundaries drawn around stakes? The corollary also becomes: How can we as researchers intervene—and care about—stakemaking? Below we outline four modes in which a valuographic research programme might intervene in stakemaking, in how values

are made. These are not mutually exclusive, nor are they to be seen as exhaustive. Rather, they must be seen as provisional placeholders for the myriad ways in which a valuographic research programme could inform and contribute to politics in a society consumed with values and valuation. These modes are: rebalancing, caring, interfering, and inspiring.

Through these moves of intervening in values-in-the-making we also wish to make clear that a pragmatic and agnostic research agenda is not at the same time a nihilist agenda. A caring commitment to exploring the making of values in practice does not mean nihilism; rather, it means a commitment to exploring how value practices are implicated in power relations, oppression, the drawing of boundaries, commensurations, and their effects.

REBALANCING STAKEMAKING: EXPERIMENTS AND NUDGES

Balance–rebalance. Our first mode of intervention attempts to nudge, to rebalance, to redirect—ever so slightly—the delicate enactments of value that occur and recur ubiquitously. The question is how we, as researchers, can participate in stakemaking, how boundaries between different sets of values are drawn and redrawn in practice, how commensurations are made and unmade. This requires, first, the continuous identification of critical issues as well as the likewise endless work of transforming such issues into solvable problems. Such a style of civilized multi-problematization (see Callon 2009) might very well benefit from an interdisciplinary approach incorporating valuographic elements.

With Teun Zuiderent-Jerak and Georges Canguilhem (Zuiderent-Jerak 2015, in press), we might consequently ask how we can work with situated interventions to shape and produce new kinds of actors—new agencies of normativity—that point creatively and constructively towards the future, rather than conservatively to the past.¹⁸ In line with Zuiderent-Jerak’s proposal of ‘situated intervention’, this mode of intervening would entail getting closer to local practices and their ‘normative surfeit’ and attempt to nudge them in another direction through experimental interventions. Such interventions could, for instance, attempt to work with the difficulties of translating questions of quality into quantifiable, portable numbers in health care (see Zuiderent-Jerak 2015, in press).

¹⁸ The notion of shaping agency alludes to the concept of *agencement* (Callon 2007), which captures the understanding of agency as an assemblage. This also permits the understanding that equipping agents gives them new capacities to be agents in the world.

CARE ABOUT VALUES: VISIBILITIES AND OTHERINGS

Care. Our second mode of intervention moves with the affective register. We can examine, and intervene in, the drawing of boundaries between cognitive and affective values. Following Bellacasa (de la Bellacasa 2011), such a mode of intervention would involve a commitment to values which are neglected. This is a mode of intervention that intertwines notions of nurturing care to give visibility to values that are oppressed, othered, made invisible, and made pathological. The intertwining of agency, affects, and values becomes highlighted.

In this mode of intervening, the social scientist might ask questions attuned to feminist discussions of standpoint and situated knowledges (Haraway 1988; Harding 1991): What values are we as social science researchers to nurture? What values need to be supported and cultivated? How is the enactment of values intertwined with the making of affect and cognition? How are values assigned to a cognitive or affective register of value?

INTERFERENCE IN STAKEMAKING: THE ACTIVIST MODE OF INTERVENING

Interference. Our third mode of intervention moves in the register of the activist. An intervention based on this mode would be an explicit call for action, a call to consciously and with commitment join the fray of enacting and ordering values in society. Intervening becomes a matter of joining in and participating in the enacting, ordering, and displacing of values in certain directions.

In this mode of intervening, along with Vasilis Galis and Anders Hansson (Galis and Hansson 2012), we might ask questions about different modes of activist intervention in value making. Questions of intervening in value making become matters of conscious interference—of action research. In the activist mode of intervening, consciousness of and commitment to value making become the crucial matters. What side should we take in controversies? How can we as social scientists and activists take sides in the committed creation of specific values?

INSPIRATION IN STAKEMAKING: THE PROMISSORY MODE OF INTERVENING

Inspiration. Our fourth mode of intervention involves galvanizing, energizing, stirring—so that things can indeed become otherwise. An intervention in this mode attempts to create value momentum, to participate in making the

promissory moves of shaping the trajectories of assemblages of values, actors, and devices by devising provisional imaginaries of values. The sociology of expectations might be to inform a conscious effort to make certain futures possible.

In this mode of intervening we might ask questions about how to inspire to action, to imagine a different future. Rather than just analysing the promissory moves in life science, this mode of intervening could entail developing new promissory futures. The intervention might move ever closer to politics. What values do we want enacted in the making of future developments? What values can we imagine for a promissory and imagined future?

Coda

This book is based on the premise that debates and practices in the life sciences and medicine are saturated with values and that there is a pressing need to consider values as things to be explained and explored rather than accepted as given entities with explanatory power. In this final chapter we have provided some suggestions for making one's own valuography: we have outlined a number of approaches that can be used to examine the making of values, to examine the contingencies in their enactment, ordering, and displacement; we have proposed a few key concerns that can provide a direction for making an important valuographic inquiry; and we have, finally, briefly put forward a few ways in which a valuographic research programme can be made to matter in the world.

All of the above has been guided by our broad proposition that a developed pragmatic understanding of values can better address a set of crucial concerns in the dynamics of the life sciences and their place in society.

Our first such concern is related to the composition of values and the making of boundaries between them—be they economic, cultural, or epistemic. For the life sciences, one theme might be how something comes to be considered as both an economic and a non-economic value. Our argument is that understanding the processes by which these compositions and boundaries are made is crucial for understanding the dynamics of and challenges related to the life sciences.

Our second concern is related to the enactment and stabilization of values in relation to the epistemic, which, for instance, can be related to valuations performing what comes to be considered worth knowing and, equally crucially, according to what specific metrics. Again, we argue that understanding the processes by which this is done is crucial for understanding central dynamics and challenges in the life sciences and medicine.

Our third concern relates to how valuation practices are intertwined with the making of stakes in the life sciences. We claim that understanding

the processes by which this is achieved is fundamental for understanding the dynamics of the life sciences, their practices of power, social order, subjectivities, and affects.

In this chapter, we have explored these themes, by way of identifying the contours of a valuographic research programme as well as the ways in which we, as scholars, on the basis of such a research programme, can take up its central challenges. Not only can we take an interest in how scientists, regulators, analysts, and publics regularly strive to define what is considered proper conduct in science and health care, economically and socially valuable, and worth knowing. Starting to outline a valuographic research programme also translates into exploring various ways we can aspire to make valuographies that matter.

We have, finally, argued that the life sciences and medicine are not the only arena that we can expect to find saturated with values in play in debates and practices. We hope this volume contains enough inspiration, currency, and leverage for both the study and making of values. There are enough challenges and concerns for us all—scholars, scientists, regulators, analysts, and publics—to address.