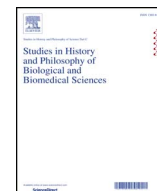




Contents lists available at ScienceDirect

## Studies in History and Philosophy of Biol &amp; Biomed Sci

journal homepage: [www.elsevier.com/locate/shpsc](http://www.elsevier.com/locate/shpsc)

# A brain worth keeping? Waste, value and time in contemporary brain banking

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## ARTICLE INFO

### Keywords:

Brain banking  
Collection science  
Neuroscience  
Waste  
Scientific archives

## ABSTRACT

If a temporal rather than spatial concept of *waste* is adopted, novel categories emerge which are useful for identifying and understanding logics of temporality at play in determining what is kept in contemporary brain banks, and reveal that brain banks are constituted by more than stored materials. First, I apply the categories analytically on a recent UK brain banking discussion among professionals. This analysis highlights the importance of *data* in brain banks, as well as the centrality of ideas about pasts and futures in the discussions. Secondly, I investigate the case of a seven decades old, Danish brain bank which had been reduced to its physically stored material for 24 years, before being reinstated in 2006. This case demonstrates the importance of material and conceptual *infrastructures* that co-constitute a collection, as they make up an experimental system that is crucial to maintaining the collection's continued relevance and usefulness as a scientific institution.

## 1. Introduction

What makes a brain worth keeping in a collection? Are there limits as to how many brains we should keep – for how long? When is a brain no longer worth keeping? And why does it lose its value? Might it regain value, once lost, if kept long enough? Are we keeping it for the sake of the past or the future? What makes the collection itself valuable, and is it more than the sum of its collected parts? When is a collection useful, and when does it become obsolete?

The scope of this article is to demonstrate how a temporal concept of *waste* may be used analytically to better understand the temporalities at play in contemporary brain banking. By temporalities I mean the ways in which ideas about pasts and futures subtly structure practices and discourses, and how in turn collection practices inform the future as they (re)construct the past and present.

Recent decades has seen a rise in historical and social studies of the neurosciences (e.g. Anderson, 2008; Beaulieu, 2004, 2001; Borck, 2009, 2005; Dumit, 2004; Gere, 2004; Lock, 2015; Martin, 2013; Rees, 2016; Rose & Abi-Rached, 2013; Stahnisch, 2014, 2003). Most of these have, with good reason, focused on the cognitive neurosciences and neuroimaging, which are and have been the most prominent kinds of neuro research since at least the 1990's. I am inspired by these authors, but my focus here is on a very different aspect of the neuro-complex, one that may be better understood through another research tradition. I do hope, however, that this article may also serve to highlight brain collection and the neurosciences affiliated with it as an understudied field both historically and in the social sciences.

I place this article within the academic study of collections, especially medical collections and museums. This field as well has been developed considerably in recent years by insightful scholars (Alberti, 2005, 2011; Hallam, 2016; Kohler, 2007; Knoeff & Zwijnenberg, 2015; Parry & Gere, 2006b, 2006a; Strasser, 2012; Tybjerg, 2015, 2014), all of whom have inspired this article directly or indirectly. Even more recently, a very convincing book has shown that archives and the practices surrounding them are central in many sciences across the disciplinary spectrum (Daston, 2017). The neurosciences are no exception.

The article proceeds in three steps. Section 2 introduces the theories that inform my understanding of *waste* and *collection*, which are the concepts that will structure the following analyses. It also presents briefly the materials I have chosen to study and argues for their usefulness in the scope of this article.

In section 3, the concepts are put to work in an analysis of concerns about *keeping* in a British brain banking context. The aim here is twofold: First, to demonstrate the applicability and usefulness of the concepts introduced in section 2, and second, to tease out some easily overlooked concepts of temporality and their importance in determining waste and value. This is done with a particular view to materials stored in brain collections.

Section 4 applies itself to a discussion of the brain collection *itself* as something more than the physically stored material. Specifically it points to the importance of infrastructures and experimental systems that also go into constituting a collection. By so doing, this section also expands the conceptual understanding of the temporalities at play in brain banking, and the ways in which *waste* is useful for understanding

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<https://doi.org/10.1016/j.shpsc.2017.12.002>

Received 24 November 2016; Received in revised form 1 September 2017; Accepted 1 December 2017  
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said temporalities.

## 2. Theories and case material

Brain banks, I will argue throughout this paper, are explicitly tied in with figurations of pasts and futures through these organising concepts: *waste* and *collection*. In this section I will introduce the key theories and concepts that I make use of in the subsequent case analyses. Section 2.1 introduces a temporal concept of *waste*, as opposed to a merely spatial one. Section 2.2 further explores this concept by defining three analytical types of waste. In section 2.3 I present the theories that inform my understanding of *collections*, the collecting sciences, and the collectors themselves. Finally, in section 2.4 I argue for my choice of case material.

### 2.1. Waste as a temporal concept

In a definition that has become commonplace in studies of waste (see Viney, 2015; Thill, 2015; Kennedy, 2007; Waldby & Mitchell, 2006; pt. 2), Mary Douglas has claimed that dirt is “matter out of place” and our attempts to be neat and clean do not relate so much to the things themselves but how we arrange, separate and order our psychophysical environments” (Viney, 2015, p. 1). As such, waste and practices of collecting (selecting what is kept and what is not) can be co-constitutive. Waste is that which is not worth keeping. William Viney complicates Douglas’ spatial understanding of waste and introduces temporality, arguing that “Waste is also (and in both senses of the phrase) matter out of time” (Viney, 2015, p. 2).

Viney argues that ‘waste’ as both verb and noun plays a key role in our temporal understanding of the world. He introduces two distinct temporal categories: *use-time*, the time of useful things:

The uses projected and achieved through [things] inform the limits of their time. In this way, use-time is explicitly future orientated, absorbed in the possibility that I might realize some latent or potential utility, but, in being so, [these things] become committed to a future in which a temporal limit remains an immanent part of their use. [...] Use-time is a time of wearing, emptying, digesting, breaking or exhausting – it is a somewhat entropic time, a time of diminishing potential, a time orientated to and by an end (Viney, 2015, pp. 7–9).

Opposed to this is *waste-time*, an “anachronistic tense, one that commingles pasts and presents and leaves things lingering, loitering and persisting above and beyond the time of its functionality” (Viney, 2015, p. 178). Our lives are fundamentally structured by narrative; an order which naturally assumes an end. However, when things end (when they are no longer a meaningful part of a narrative), they do not disappear, but rather *become* waste, which then has to be disposed of, removed. Waste, as Viney understands it, is “both a material continuity and a temporal discontinuity” (Viney, 2015, p. 29). Waste, then, is matter out of time before it is out of place. Stuff enters the ontological category of waste by being wasted: material and word are co-constitutive, but both depend on temporality.

### 2.2. Analytic categories of waste

In order to better make use of the category in my analyses, I will now divide it into more specific subcategories: *constitutive waste*, *virtual waste*, and *ontological waste*. They are informed mainly by Catherine Waldby and Robert Mitchell’s analyses of the meanings of waste in tissue economies (2006, pt. 2).

Constitutive waste is that kind of destruction which is productive – the kind of waste invoked in saying ‘you can’t make omelette without breaking eggs’. Waldby and Mitchell understand it as: “waste that is the precondition for producing ‘the new’. [Waste that] is not in and of [itself] valuable but only manifest[s] *potential value*; [it is] waste, in

other words, that promise[s] value.” (2006, p. 109). The kind of value referred to here is called “biovalue”, which “refers not to the stable and known properties of tissues but to the capacity of tissues to lead to new and unexpected forms of value.” (2006, p. 108). In biovalue terms, objects are not valuable in and of themselves, but only as medium of monetary or epistemic value. Biovalue exists in many kinds of waste and non-waste material. The defining property of constitutive waste is that *potential* or *promise* is invoked in favour of productive destruction.

Virtual waste refers to some imagined loss, present or future. It is a concept picked up from a set of American congressional hearings addressing that innovation was presumably: “going to waste as a result of bureaucratic red tape and illogical government regulations” (Senator Birch Bayh, quoted from: Waldby & Mitchell, 2006, p. 102). This common trope in American ideology can as easily be applied to the value of tissues as to innovation. Virtual waste, it must be specified, “[cannot] be measured directly, of course, and so the specter of the future loss of inventions function[s] as a virtual image” (Waldby & Mitchell, 2006, p. 102).

If virtual and constitutive forms of waste regards the potential that certain objects may or may not hold, ontological waste is of another, perhaps more primary, kind. As we are dealing in this instance with human tissues, some of them may be inscribed with ontological meaning for a subject. This kind of meaning is not covered by the term ‘biovalue’, but is considered inherent in the objects themselves. Waldby and Mitchell observe that “human tissues are more likely to be classified as waste as they lose ontological significance” (2006, p. 84). They are thinking here of such neutral kinds of tissue as hair or nail clippings, or stuff that is outright threatening to the subject’s stability, what has been termed ‘the abject’: faeces, puss, and cancerous cells. Such materials must be disposed of, lest the person itself wastes away. What Waldby and Mitchell seem less interested in (though not oblivious to), is the temporal changes objects may undergo *pace* Viney, and the possibility that ontologically significant tissues may *become* waste, given enough time: “waste is every object, plus time” (Thill, 2015, p. 8).

### 2.3. Collecting sciences: finders and keepers

A collection, according to John Elsner and Roger Cardinal, “is the unique bastion against the deluge of time” (Elsner & Cardinal, 1994, p. 1). While this may be true of personal collections and some (older) museums, it certainly is not so for medico-scientific research collections; they seem rather to be vehicles for change. Recently, Bruno Strasser (2012) and Karin Tybjerg (2014, 2015), have argued for a revision of the standard narrative in the history of biology and medicine, respectively, in which experimentalism and the laboratory revolution has been considered the main causes behind scientific development since the late nineteenth century. Strasser and Tybjerg argue on the basis of different historical and contemporary cases that collections (be they natural history collections, medical museums, or modern bio-banks) as well as their related “ways of knowing” (see Pickstone, 2000), collecting and comparing, have played much larger roles in the recent histories of these sciences than they are usually ascribed.

Robert Kohler (2007) has made a useful distinction between scientists that are “finders” and those that are “keepers”. Though Kohler equates all collecting scientists with keepers (Kohler, 2007, p. 432), I borrow his vocabulary to distinguish between two ideal types of brain collectors. Kohler’s distinction rests on the value of the collected objects: whether they have an “intrinsic value as objects”, or “they are simply unprocessed data, and in yielding up those data they are *used up*” (Kohler, 2007, p. 432. My emphasis). Note that Kohler’s distinction fits naturally with Viney’s vocabulary of use and waste. *Finders*, in my analysis, will be those actors that see primarily the use-time of an object, or for whom the most immediate form of waste is *constitutive waste* or, as Waldby and Mitchell defined it, destruction for the sake of (scientific) progress. For finders, collections that are not in use will most often constitute an unproductive kind of waste: waste of time,

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