

FRIEDERIKE SCHMIDT

## Retracing the Mobile Object

### Digitising Biographies of Aboriginal Material Culture

This essay aims to give an overview of the potential benefits of applying mixed-method design to examinations of the processes by which items of Aboriginal material culture were acquired in Australia during the nineteenth and twentieth centuries. When examining the history of European museum collections of Indigenous heritage material, researchers have tended to ask both general and specific questions. Often, they have sought to identify quantitative patterns, asking general questions like *What caused the appropriation of Indigenous Australian artefacts?* Answering quantitative questions requires the use of, ideally, open-access standardised digital data which enables the possibility of reanalysing and reassessing previous results. However, researchers might also want to answer more specific questions, such as *What were the causes of the appropriation of the Dja Dja Wurrung bark etching acquired by John Hunter Kerr in 1854?* This would obviously require the employment of a qualitative approach (HICKS 2010, 26; WILLIS 2003, 44; LIEBERMANN 2005, 436). The core of the digitisation idea put forward in this essay is the translation of written information from museum databases into numbers. This is achieved through numerical coding of museum database contents. This numerical coding is a necessary step in the generation of a dataset for subsequent statistical analysis.

Both qualitative and quantitative methods have their advantages, which can be realised by applying them jointly. Quantitative investigations can provide insights that allow us to assess competing explanations and identify which avenues of qualitative investigation appear most likely to generate new knowledge of the phenomena that are the subject of investigation. Case studies, for example, can improve the appropriateness of measurement procedures and potential statistically based modelling. In short, combining the two methodological approaches has the potential to generate analytic outcomes that are greater than the sum of their respective modes of inquiry (LIEBERMANN 2005, 436).

This essay starts with a brief overview of the methodological principles of mixed-method design. It then discusses the benefits of using such combined procedures. Subsequently, it identifies possible ways of applying mixed-method design, and finally it outlines a current doctoral project as an example of the implementation of a mixed-method analysis of the appropriation of Aboriginal material heritage.

## Mixed-method design

In recent social science and humanities research, it has become more common to combine qualitative and quantitative approaches in causal analysis, with beneficial outcomes. This is largely due to the increasingly interdisciplinary nature of research in the social sciences and humanities, which brings together fields with diverse methodological backgrounds to address complex research problems (CRESWELL/CRESWELL 2017, 203). These combinations of qualitative and quantitative research methods are now commonly referred to as mixed-method research (CRESWELL/CRESWELL 2018, 213–214; KELLE 2007, 282–283).

Generally, four factors need to be taken into consideration when employing a mixed-method approach: i) timing, ii) weighting, iii) mixing and iv) theorisation. Firstly, there is the question of when data should be collected. A researcher can choose between sequential and non-sequential design. In non-sequential design, qualitative and quantitative data collection occur concurrently, whereas in sequential design data collection takes place in several phases, starting with either quantitative or qualitative data (when the data for either qualitative or quantitative analysis is collected depends on the initial intention of the researcher, although it is not always possible to collect data over an extended period of time). Secondly, there is the question of what weight to give to qualitative and quantitative approaches. Generally speaking, within a non-sequential design neither method is given priority and both are equally weighted. In sequential design, however, the method selected for the first phase of data collection is prioritised, and thus the research question determines which approach is given priority. A third factor to consider is the mixing of methods itself: when does it take place, and how does it occur? The first question is usually rather simple to answer: mixing can occur during data collection, analysis or interpretation, or all three stages. The second, however, is more complex, as Creswell explains:

Mixing means either that the qualitative and quantitative data are actually merged on one end of the continuum, kept separate on the other end of the continuum, or combined in some way between these two extremes (CRESWELL 2009, 207–208).

In other words, data gathered by these two different methodological approaches needs to be either i) connected, ii) integrated, or iii) embedded. In connected design, qualitative and quantitative data are gathered separately, then conjointly analysed in the final phase of the research. In integrated design, all data (qualitative and quantitative) are collected concurrently and then merged. Embedded design primarily collects one type of data, and uses the other type to provide complementary information.

There is also a further matter to consider: the theoretical framework informing the study. This will obviously determine the types of questions asked, what data will

be collected, how it will be collected, and what the study can be said to have found. And of course theoretical considerations will likely determine degree to which the quantitative and qualitative methods employed are mixed, and the timing of that mixing (KELLE 2007, 285–289; CRESWELL 2009, 208).

### **Why apply a mixed-method design?**

When researching the appropriation history of the Indigenous material heritage of Australia, two problems can be identified: Firstly, research has been based largely on qualitative methods, even as it made various claims respecting quantitative patterns in the classification of appropriation periods. Secondly, there is the question whether case studies can support quantitative claims anyway? Turning to consider the first problem, we find that to date, there have been different interpretations of the appropriation history of the Indigenous material heritage of Australia. Recent publications argued that the history of appropriation can be somehow divided into phases (SCHMIDT 2023b).

[...] ‘circles of accumulation’ had barely formed around Aboriginal objects when they first came to notice in Europe during the first years of the nineteenth century. Those circles became more evident from the 1840s, when it is possible to detect discernible links between collectors and their cabinets, dealers, entrepreneurs and museum ethnographers, in a series of networks far removed from the original sites of acquisition (JONES 2018, 127).

Although Jones uses the term ‘phase’ in his essay, he does not seem to use it to mean clearly successive phases. The phases he identifies overlap with each other and remain vague. According to Jones, the first phase – from the 1780s to the 1840s – is characterised by trade relations and exchange. Indigenous Australian artefacts appropriated in this phase were rarely placed on public display outside of private collections, and were seen and discussed only by a few interested people, probably in disorganised or eccentric displays based on individual preference (JONES 2018, 129–131). The second phase, from the 1840s to the 1940s, is marked by a growing awareness of the ethnographic value of the objects. This awareness extended to a proliferating ethnographic literature that acknowledged typologies of artefacts and regional styles. Jones suggests that these two early phases were followed by two further, consecutive phases that continue to the present day. The third phase, from the 1890s onwards, is characterised by the rise of the first professional field workers in Australia. Their influence on appropriation practices is detectable in the type and composition of museum collections from the 1890s onwards. There is also a fourth phase in Jones’s model of circles of accumulation, which is characterised by shifts in the meaning and significance of artefacts within both the museum

world and the Western world as a whole. The exact dating of this phase remains open. (JONES 2018, 127–129).

Another phase model can be found, which claims similar phases of appropriation practices in Australia. It suggests five periods of appropriation. The first period stretches from the very first Western contact with Indigenous peoples to c. 1880, and is called the period of ‘unsystematic collecting’. The second lasted from c. 1880 to c. 1920 and took place largely under the influence of social evolutionary theory. Subsequently, the appropriation activities within the third period, from c. 1920 to c. 1940, could be identified as appropriating under the influence of the ‘before it’s too late’ mindset. The fourth period, from c. 1940 to c. 1980, was the period of research adjunct appropriation. And the fifth period, from c. 1980 until today, is characterised by the dominance of secondary appropriation (PETERSON/ALLEN/HAMBY 2008, 8–13). Both phase models are based on qualitative studies, undertake vague quantifications and claim to have identified structural patterns without applying any quantitative methodological approach.

A second problem in characterising the history of appropriation practices of Indigenous Australian material heritage items arises when using specific case studies. The prevailing tendency in publications on Indigenous Australian cultural material has been to focus on the significance of unique objects, the activities and ambitions of individual so-called ‘collectors’ or institutions, and their roles in a broader historic context. There has thus generally been a latent and unsystematic use of quantification. Terms like ‘many’, ‘few’ or ‘some’, for instance, are used without reflection on whether they might fit the research or not, as they are non-specific and leave much room for interpretation. When it comes to recent comparative research, one can also find phrasing that turns out to be questionable (Schmidt 2023). Examples of such phrasing include: “While most Aurukun sculpture is overtly naturalistic” (CARUANA 2012, 185), “[p]erhaps 200 prominent collectors may be identified as responsible for approximately 90 % of these objects” (JONES 2019, 126), or “among about twenty European museums” (JONES 2019, 126).

Neither the first nor the second phase model discusses why the case studies underpinning the respective models were chosen. The first model claims to be based on “some 10,000 Australian ethnographic objects” (JONES 2018, 126), but we are left wondering whether it employed any standardised modes of data collection and analysis in doing so. Likewise, it is unclear what, if any, quantitative data (gathered by standardised data collection) informs the work of authors who have discussed the history of Australian ethnographic collections in material culture in more general terms.

Wherever possible, claims regarding quantitative patterning in cultural history need to be grounded in an appropriate quantitative methodology, which involves standardised data collection and analytical procedures (Deutsche Forschungsgesellschaft, 2022). Additionally, to maximise the intellectual value of the work involved, the data collected should be made freely available in reusable forms, and the

outcomes of analysing it must be presented via publication. Appropriate quantitative investigation also has the advantage of reducing the risk of case studies being arbitrarily selected. It may be, for example, that quantitative data will suggest that certain ordinary and other anomalous case studies (i.e. outliers) may be sources of valuable insights into the phenomenon under investigation (LIEBERMANN 2005, 444).

The challenge in conceptually mapping the history of appropriation practices of Indigenous Australian material heritage, then, is to move beyond identifying what appear to be quantitative patterns based on selective case studies to applying an appropriate mixed-method design along the lines discussed in the remainder of this chapter.

### **How to apply a mixed-method design?**

With the development of quantitative and qualitative methods in social sciences and humanities, and the increase in their perceived legitimacy, mixed-method designs have gained popularity. But while mixed-method research is now accepted as a legitimate methodological approach in the social sciences, in humanities mixed-method designs are rather rare (CRESWELL 2009, 203). In history, for example, digitisation in its various manifestations is advancing, opening up new quantitative research paths. For example, Lev Manovich and his colleagues at the Cultural Analytic Lab have offered for a quantitative analysis of historical changes in visual art for the first time (YAZDANI/CHOW/MANOVICH 2017), and articles from the Cultural Analytic Lab that have implemented a digital approach on topics such as art markets, society and visual culture have been very well received and have broadened art history perspectives. In other words, these publications have shown that a research area once dominated by the qualitative can benefit from the insights gained by quantitative analysis. As research is continuously evolving and developing both theoretically and methodologically, utilising the strengths of both qualitative and quantitative methods is another step forward in evolving and developing research methodology (CRESWELL 2009, 203).

Quantitative analysis is defined as a mode of analysis in which the primary causal conclusions are derived from statistical models that ultimately lead to estimates of the empirical validity of a theoretical model. In turn, qualitative analysis is defined as an analysis mode in which causal conclusions about the primary unit under investigation are derived from qualitative comparisons between cases and/or the tracing of causal chains *within* given cases over time. In such analyses, the relationship between theory and fact is largely captured in narrative form. Combining qualitative and quantitative approaches allows researchers to also combine their advantages, and aims to improve the quality of conceptualisation and measurement, the analysis of rival explanations, and general confidence in the central results of a study (LIEBERMAN 2005, 436).

The promise of mixed-method research designs is that the quantitative and qualitative analyses can inform each other to the extent that the analytical benefit will be greater than the sum of its parts. Not only is the information obtained complementary, each step of the analysis determines the direction in which the next step will be taken. Most importantly, the quantitative analysis provides insights into competing explanations and helps motivate case selection strategies for the qualitative analysis, while the qualitative analysis in turn helps improve the quality of the measurement instruments and model specifications used in the quantitative analysis (LIEBERMAN 2005, 436).

In order to understand the flows and entanglements of local material heritage within global networks, digital data collection is crucial. In his online article *Forschungsdaten in der (digitalen) Geschichtswissenschaft. Warum sie wichtig sind und wir gemeinsame Standards brauchen* (“Research data in (digital) history science, why they are important and why we need common standards”, trans. F. Schmidt), Torsten Hiltmann, describes the path from digitised sources to digital methods and discusses problems in defining research data in historical science.<sup>1</sup> He discusses ‘analogue’ databases, which make their data accessible only via web interfaces and not as data, meaning that in the absence of bulk downloads and application programming interfaces (API) to make them usable for further research, time-intensive workarounds such as web scraping are required. Most museums and galleries’ databases exist in exactly this format. It is necessary to make the data contained in many of these databases accessible via detours and thus to make the data storage sustainable. An example for this form of data gathering is the European Museum Collections of Aboriginal Material (EMCAM) dataset which aggregates information on 4,862 indigenous cultural objects from Australia from the 13 largest national collections of EU Member States for subsequent statistical analysis and thus allows for multiple research questions to be examined (SCHMIDT 2023a). As Hiltmann puts it: „Eine Veröffentlichung der [...] zugrundeliegenden Daten als wiederverwendbare Forschungsdaten (d. h. als CSV, XML, JSON oder RDF) hätte hier vieles vereinfacht” (“A publication of the [...] underlying data as reusable research data (i.e. as CSV, XML, JSON or RDF) would have simplified many things here” trans. F. Schmidt). Finally, sustainable data management leads to more transparency and when combined with the publication of replication files leads to better communication within review boards (HILTMAN 2018).

1 For the urgency of skills in the treatment of digital data, see Jana KECK: *How Meaningful are Digital Humanities Projects When it Comes to Training Early-Career Scholars in Digital Literacy?*, pp. 175–185 in this volume.

## Towards mixed-method analysis of the appropriation of Indigenous Australian material heritage

One application of mixed-method design to the analysis of Indigenous Australian material heritage can be found in SCHMIDT (2023b). By applying a sequential mixed-method design, this PhD project allowed for prioritisation of the quantitative analysis. Thus it allowed the verification of quantitative statements such as claims respecting quantitative patterns in the classification of the appropriation periods for Indigenous objects of Australia. The results could then be evaluated in the light of what we know about prominent individuals involved in the process. The research question *How and why did Indigenous Australian objects end up in European collections?* asked both a) Which quantitative patterns within the history of appropriation practices of Indigenous objects can be identified? and b) What were the individual circumstances under which the Dja Dja Wurrung bark etching appropriated by John Hunter Kerr in 1854 found its way into the collection of the British Museum in London? A sequential mixed-method analysis thus helped the researcher ask questions directed at different levels of aggregation with varying level of detail when analysing their data (SCHMIDT 2023b).

When conducting a mixed-method design that is dependent on historical data, there are certain challenges. For example, when collecting historical cultural data it can be difficult to collect a sample that fulfils the criteria of randomness. When examining historical sources it is therefore relatively unusual to have a classic sampling frame available. It can also be challenging to ensure that each characteristic unit in a statistical core set has a non-zero probability of being selected, and knowing the exact probability of inclusion for each sampling unit is even more difficult. Choosing an appropriate method of data collection is thus key (OCHOA 2017). When examining the history of appropriation practices, it is evident that tradition, contemporary politics and individual interests, as well as economic, business, and social structures, all had influence both on the transmission of knowledge and on written and material contemporary evidence. For example, calls for tenders from public and private institutions such as museums led to the appropriation of certain groups of objects that were in high demand, and Kerr was responding to such a call for tenders when he accumulated Indigenous material for exhibitions in Bendigo, Melbourne, and later Paris in 1854 and 1855. As the selection of units for the sample depends on the research question and thus cannot always be random, a meaningful conditional non-randomised sample is the choice (OCHOA 2017; WILLIS 2003, 44).

Available online databases of ethnographic museum collections in Europe build the basis for the standardised data gathering process. In order to create a dataset for statistical analysis, the information contained in the museums' databases was numerically coded as part of a standardised data collection process. This means that information such as the categories 'object type' (for example 'bark etching' or 'boomerang') and 'material' (for example 'wood' and/or 'bark') was coded

numerically (e.g. ‘boomerang’ = 4 and ‘wood’ = 0071) and transferred into a dataset (e.g., an Excel spreadsheet). Likewise, information about the exhibition of the object (i.e. the places, times and types of exhibition) could be coded and included in the dataset. Further Information about the involved persons and institutions was gathered through additional archive and literature research. Thus, the content of the created EMCAM Dataset goes far beyond the contents of the available museum databases. (SCHMIDT 2023b).

The prerequisite for performing a mixed-method analysis is the availability of a quantitative dataset with a sufficient number of observations for statistical analysis. For example, the British Museum in London and the Ethnographic Museum in Stockholm have digital databases that make information about their collection objects available online. Likewise, the collections of a significant number of the other major European museums are also available via the institutions’ digital databases.

This publicly accessible information, appropriately processed, can be used for statistical evaluation. Moreover, the dataset created, when published in a sustainable and freely accessible way, can provide the basis for qualitative case selection and theory building. To ensure standardised data collection, however, the sample must be clearly defined. This project’s investigation of European museum collections of Indigenous Australian material heritage focuses on the member states of the European Union. The largest state collection of ethnographic objects in each member state was taken into account and the information available in the relevant online database was used for data collection. In this way, the same basic conditions were created for each characteristic (SCHMIDT 2023b).

The project’s methodological approach is inspired on a well-established and legitimate sequential mixed-method design (LIEBERMAN 2005, 435–436). A preliminary quantitative analysis can provide information that both guides the execution of the subsequent qualitative analysis and complements its results. The quantitative analysis provides researchers with the ability to make clear baseline estimates of the strength of the relationship between variables of interest, including estimates of how confident we can be in the face of a range of assumptions about probabilities and frequencies relating to these relationships. The quantitative analysis also provides important information about how to proceed to the next stage of analysis, which is formed by the comparative study of selected cases (LIEBERMAN 2005, 439). For example, the examination of written sources such as letters, diaries, official government reports, exhibition catalogues, and contemporary publications, as well as of the objects themselves and interviews with descendants, are crucial sources for an ensuing qualitative analysis. The two parts of the mixed-method design are thus combined in order to inform each other, to the point that the analytic outcome becomes greater than the sum of its parts. Thus the mixed-method design leads to the identification of quantitative patterns within the history of the appropriation of Indigenous Australian material, as well as the identification of individual circumstances which caused the appropriation of an object (SCHMIDT 2023b).



The cases for subsequent qualitative analysis were selected based on the results of the quantitative analysis. The selected appropriators represent the two main dynamics in the history of appropriation of indigenous cultural material, the (proto-)scientific and non-scientific practices. The previously mentioned Dja Dja Wurrung bark etching was appropriated by the farmer and settler John Hunter Kerr. In the course of an ongoing qualitative analysis, the project will explain which individual circumstances led to its appropriation. In addition, it will clarify why other Indigenous objects such as the baskets and weapons accumulated by Daisy May Bates have been appropriated in a (proto-)scientific manner. In addition to aspects concerning the appropriating individual such as their motivation, contemporary political climate and personal networks, the characteristics attached to the object are also decisive (SCHMIDT 2023b).

## Conclusion

This essay has given an overview of the potential benefits of implementing mixed-method design in order to examine the appropriation practices for Indigenous Australian material heritage during the nineteenth and twentieth centuries.

Regarding research into history of appropriation in Australia during the nineteenth and twentieth centuries, two main factors that call for the application of a mixed-method design have been identified: i) the urge to generalise research findings and put them into larger context, and ii) the need to avoid arbitrary case selection. In order to prevent the appearance of arbitrary case selection, one can combine standardised data collection for quantitative analysis with a subsequent qualitative case study. The aim of a qualitative research design might be to assess the value of preferred theories, to lead us to new propositions, or to gain better insights into cases deemed to be of intrinsic interest. Using a mixed-method design provides us with a strong foundation for choosing between these competing goals, and also with the inferential logic associated with case selection strategies (LIEBERMAN 2005, 444). Although there are different ways to combine quantitative analysis with qualitative analysis, applying a sequential mixed-method design allows for the prioritisation of quantitative analysis and therefore the ability to verify quantitative statements (LIEBERMAN 2005, 435–436; CRESWELL 2009, 206–207). Translating the content of museum databases into numbers is a crucial step in data preparation which enables the creation of a dataset for credible quantitative analysis, and digitisation enables not only the preparation of this data, but also statistical analysis using computer software as has been done for the EMCAM dataset (SCHMIDT 2023b).

Shifting our focus to the methodological approach reminds us of the importance of implementing not only appropriate methods, but also sustainable data management, and thus of the importance of making data freely available in a reusable

form. Unrestricted access to datasets and replication files provides more transparency within the research field, and also leads to better communication both within the review board and beyond. Furthermore, a comprehensive form of digital accessibility enables external verification of the results, and ultimately enhances their credibility.

## Bibliography

- Caruana, Wally (2012), *Aboriginal Art*, London.
- Creswell, John W. (2009), *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Thousand Oaks.
- Creswell, J. David/Creswell, John W. (2018), *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Thousand Oaks.
- Deutsche Forschungsgesellschaft (2022), *Leitlinien zur Sicherung Guter Wissenschaftlicher Praxis. Kodex*.
- Hicks, Dan (2010), "The Material-Cultural Turn", in: Dan Hicks and Mary C. Beaudry (eds.), *The Oxford Handbook of Material Culture Studies*, Oxford, 25–98.
- Hiltman, Torsten (2018), "Forschungsdaten in der (digitalen) Geschichtswissenschaft. Warum sie wichtig sind und wir gemeinsame Standards brauchen", in: *Digitale Geschichtswissenschaft*, 17/9/2018, <https://digigw.hypotheses.org/2622> (accessed 28/10/2020).
- Jones, Philip (2018), "Australian Ethnographica in European Collections. Circles of Accumulation during the Long Nineteenth Century", in: Bénédicte Savoy, Charlotte Guichard and Christine Howald (eds.), *Acquiring Cultures: Histories of World Art on Western Markets*. Berlin/Boston, 123–152.
- Kelle, Udo (2007), *Die Integration Qualitativer und Quantitativer Methoden in der Empirischen Sozialforschung. Theoretische Grundlagen und methodologische Konzepte*, Wiesbaden.
- Lieberman, Evan S. (2005), "Nested Analysis as a Mixed-Method Strategy for Comparative Research", in: *American Political Science Review* 99(3), 435–452.
- Ochoa, Carlos (2017), "Random and Non-random Sampling", <https://www.netquest.com/blog/en/random-non-random-sampling> (accessed 7/3/2020).
- Peterson, Nicolas/Allen, Lindy/Hamby, Louise (eds.) (2008), *The Makers and Making of Indigenous Australian Museum Collections*, Melbourne.
- Peterson, Nicolas/Allen, Lindy/Hamby, Louise (2008), "Introduction", in: Nicolas Peterson, Lindy Allen and Louise Hamby (eds.), *The Makers and Making of Indigenous Australian Museum Collections*, Melbourne, 1–26.
- Schmidt, Friederike (2023a), "Das Quantitative Ausmaß europäischer Aneignungspraktiken indigener Kulturgüter Australiens. Eine Genderperspektive", in: Melanie Althage, Martin Dröge, Torsten Hiltmann and Claudia Prinz (eds.), *Digitale Methoden in der geschichtswissenschaftlichen Praxis: Fachliche Transformationen und ihre epistemologischen Konsequenzen: Konferenzbeiträge der Digital History 2023*, Berlin, 23.–26.5.2023, Berlin, <https://doi.org/10.5281/zenodo.8322364>
- Schmidt, Friederike (2023b), *Quantifying Colonialism, European Practices of Mass Appropriation of Indigenous Cultural Objects in 19th and 20th Century Australia*, [unpublished PhD thesis], University of Greifswald.
- Willis, Elizabeth (2003), "Exhibiting Aboriginal Industry: A story behind a 're-discovered' Bark Drawing from Victoria", in: *Aboriginal History* 27, 39–58.
- Yazdani, Mehrdad/Chow, Jay/Manovich, Lev (2017), "Quantifying the Development of User-Generated Art during 2001–2010", in: *PLOS One*, 8/8/2017, <https://doi.org/10.1371/journal.pone.0175350> (accessed 7/9/2020).