Kin and connection: Bodies and relations in archaeology and ancient genetics

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Zusammenfassung

Verwandtschaft und Verbindung: Körper und Beziehungen in der Archäologie und der Archäogenetik

In Verbindung mit einer präziseren absoluten Datierung haben biomolekulare Daten (d. h. alte DNA, stabile Isotope) die Praxis der Archäologie, die Fragen, die Archäologen stellen, und die Interpretationsmöglichkeiten auf der Skala des Lebens eines Individuums grundlegend verändert. Immer erschwinglichere und präzisere prähistorische biomolekulare Analysen stellen traditionelle archäologische Interpretationen in Frage, die sich aus materiellen Kulturstudien und Landschaftsuntersuchungen ergeben. Zu den neuen Wegen, die dieser Forschungsansatz eröffnet, gehört ein aufkommendes Interesse an Verwandtschaft und Beziehung sowohl bei Archäologen als auch bei Genetikern. In diesem Artikel werde ich die Spannungen zwischen genetischen Daten über Verwandtschaft und sozialen Narrativen über Verwandtschaftsbeziehungen untersuchen, um Wege aufzuzeigen, wie wir unsere Unterschiede produktiv überbrücken können.

Summary

In conjunction with more precise absolute dating, biomolecular data (i.e., ancient DNA, stable isotopes) have fundamentally changed the practice of archaeology, the questions archaeologists ask, and the possibilities for interpretation on the scale of an individual's lifetime. Increasingly affordable and precise ancient biomolecular analyses are challenging traditional archaeological interpretations emergent from material culture studies and landscape investigation. Among the new avenues opened by this new research approach is an emerging interest in kinship and relation among both archaeologists and geneticists. In this paper, I will explore the tensions between genetic data concerning relatedness and social stories of kin connection in order to suggest avenues through which we might productively bridge our differences.

1 Introduction

Identifying kin, those people to whom we are related and with whom we are in relation, occurs at the junction between social interpretation and biomolecular science (Brück/Frieman 2021), making this an exciting node in such interdisciplinary collaborations. With the advent of new and increasingly accessible biomolecular methods, archaeologists and historians have been challenged to rework old narratives and discover new ones that speak to newly revealed biological patterns. Here, I explore how kinship – both social relations and biological relatedness – might form a sort of interpretative middle ground better to integrate biomolecular and social data into archaeological narratives about the past. I build outwards from the inherent tension between the fluid world of social kin-making and the biomolecular data increasingly used to categorise past people and their relationships in order to outline paths for future research and collaboration.

2 Kinship past and present

Kinship is one of the major foci of social anthropology as it is traditionally understood as comprising a major shared element of all known human societies – our own included. Anthropologists have spent the last century mapping patterns of relation – between individuals, created through marriage or other forms of affiliation, and with other-than-human entities, such as spirits, animals and places (Sahlins 2013). This is important to understand because kin-making is a key part of how humans structure their relations with each other, with their wider community and with the non-human world. Kin relations are constituted by shared values and shared experience, as well as by shared cultural or biological lineage (Abel/Frieman 2023).

Many of the original and still foundational works on kinship emphasised society-wide models, often linked to political and economic practices, rather than individual experiences (e. g., Leach 1951; Fox 1967; Lévi-Strauss 1969). These models generalise from highly variable lived ways of relating and universalise ways of being that might look wildly different from different ›on the ground‹ perspectives. In recent decades, attention to kinship has not waned, but it has shifted from these normative structures to more complex and contingent approaches (Carsten 2004; Nash 2004; Nash 2005). The question now is not so much about identifying universal underlying structures of kinship within a given cultural group as it is about seeking to understand who kin are or might be, how they are made, and what roles they might play by dint of their kinship (Sahlins 2013).

That is, present research is more interested in kin as a dynamic verb rather than a static noun.

Contemporary anthropologies of kinship – led in large part by feminist and queer scholars – emphasise that relations between people, communities, and generations (not to mention between people and other-than-humans) are fluid, contingent, and resist categorisation[1]. They shift over an individual's life course, can be altered and manipulated as politics and personal relations demand, and are ultimately flexible enough that even strict kin categories can be expanded to absorb outsiders and create visible relations between otherwise unknown lineages. Moreover, Indigenous and First Nations scholars emphasise the extent to which kinship extends outwards to the other-than-human world, encompassing people, places, plants, and animals into mutually beneficial webs of relation and obligation[2]. Genetic data would seem to pose a challenge to this fluid and complex world of relations, as genes are widely understood as objective and evidence for immutable pre-existing patterns of relation. However, biological patterns too are understood through the lens of culture and connection, with genetic data being regularly reconstituted to conform to social conceptions of relation rather than the other way around (Abel 2021a).

2.1 Gene-ealogies and archaeologies of kinship

Archaeologists and evolutionary biologists have had access to ancient DNA data of various qualities and quantities for decades, but only with the recent development of Next-Generation Sequencing (NGS) and its successors has aDNA data become widely accessible. With increasing quantities of high-quality genetic data from a variety of people, places, periods, and archaeological cultures the relevance of these data to archaeological research has increased; and new sorts of archaeological questions have emerged. Following J. Brück and C. J. Frieman (2021), a strong interest in lineage unites much of the aDNA research produced since the advent of NGS. They divide aDNA lineage research into two broad categories based on methodological approach: research into vertical patterns of relatedness, that is, between ancient and modern populations, and research into horizontal patterns of relatedness, that is, between populations or individuals in the past. This latter approach holds considerable interest for archaeologists, as it has potential to illuminate aspects of relations that would have been knowable and experienced by past people in the course of their own lives. Recent work by C. Fowler and colleagues (2022) on biologically related individuals within a Neolithic megalithic tomb is exemplary of the fine-grained detail and new data-driven insights this sort of research can offer, even to the most heavily investigated of prehistoric practices. The genetic genealogies developed within this and other research projects clearly gives us insight into aspects of social practice, including how biological relatedness played a role in funerary rites, gendered aspects of lineage creation, and elements of reproductive choice and affiliation (Armit et al. 2023).

Nevertheless, we must approach these genetic genealogies with care. The genetic genealogy – or gene-ealogy (sensu Abel/Frieman 2023) – is one form of mapping social and genetic data together. Within the framework of kin-as-verb discussed above, to understand kinship diagrams and genealogies as technologies or kin-making tools as much as ones for kin-mapping (Nash 2008; Wolf-Meyer 2020; Abel/Frieman 2023). They do not reveal innate relations, but create kin ties between individuals, materialising a momentary or perceived relationship and reifying it temporally, as well as restricting our understanding of who can be kin, and how they become kin. Genealogies have a deep history in European culture, where they have been used as tools to create distinctions between individuals, families, ethnic groups (and later races), as well as to manifest affinities (including with deities or supernatural entities) when politically, economically or socially expedient[3]. As such, even when combined with genetic data, gene-alogies are neither objective nor without social interpretation. Indeed, sociological research finds that it is rare for contemporary people to have straightforwardly genetic-deterministic approaches to their DNA results. Instead, genetic data are assimilated selectively into identity narratives; their objectivity is questioned and assessed in relation to other forms of ancestral knowledge (Nelson 2008; Panofsky/Donovan 2019; Abel 2021). If there is to be a meaningful archaeology of kinship that exists in dialogue with, but not driven by, genetic data, this approach will play a central role.

Despite the close links between anthropology and archaeology, and the central position of kinship within the former, until recently there was little robust analysis of kinship among archaeologists. In line with broader anthropological critiques (e.g., Schneider 1984), later twentieth-century archaeologists W. L. Allen and J. B. Richardson (1971) argued that archaeological data were not suited to kinship analysis. They argued that, as kinship articulates largely on the small-scale of interpersonal relationships with culturally contingent forms and conceptions, the fragmentation and temporal breadth of archaeological materials, not to mention the typical lack of living traditions or interlocutors, made searching for past kinship structures a futile endeavour. Despite the turn to social archaeology in the 1980s, kinship (then, out of fashion in anthropology as well), never quite gained archaeological attention beyond osteological approaches to biodistance (Stojanowski/Schillaci 2006; Johnson/Paul 2016). It is these bioarchaeological models of ›kinship‹ – actually biological relatedness – that have particularly influenced the emerging field of palaeogenomics (Ensor et al. 2017).

The development of a distinct social archaeology of kin and relations is still in progress, and the newness of field means that there are not established methods for discuss-

1 McKinnon/Cannell 2013; Goldfarb/Schuster 2016; Haraway 2016; Clarke/Haraway 2018.

2 Kimmerer 2013; Andrade 2014; Todd 2017; Neale/Kelly 2020.

3 Klapisch-Zuber 2000; Thornton 2003; Martínez 2008; Guy 2018; de Miramon/van der Lugt 2019.

ing kinship – especially complex and fluid kin-making practices – in archaeology. Nevertheless, we see a rapidly growing cluster of research in this area, spurred by biomolecular developments, but branching off into several distinct and diverse directions. American anthropological archaeologist B. Ensor (2011; 2013), for example, builds from a foundation of twentieth-century kinship studies to identify descent patterns and kin relations cross-culturally. Although he agrees that social considerations are central to the organisation of kinship (Ensor 2017), nevertheless he expects generalizable patterns to be present. He identifies several archaeological domains, which he argues should give insight into lineage rules (that is, marriage patterns, residence patterns, etc.), among them the form and layout of domestic structures and settlements, and uses this model to delineate patterns of descent in diverse archaeological contexts from Europe and the Americas (Ensor 2013; Ensor 2016; Ensor 2021).

B. Mills, another American archaeologist who works primarily in the pre-colonial America south-west, takes an alternative approach, although still one that values generalisable and quantitative data. She and her colleagues (Mills et al. 2016; Mills 2018; Mills/Peeples 2019) model the movement of migrants through a social network analysis of the spread of innovative ceramic techniques and decorative schema. They understand the spread of these innovative techniques to follow the movements of skilled potters who, they argue, were largely women who travelled as marriage partners to distant communities. Their skills made them sought-after spouses and the residue of connectivity visible in the manufacture and decoration of pottery allows us insight into patterns of affiliation and descent.

By contrast, across several articles and a monograph, Brück and her colleagues[4] build a more fluid and social model of kinship, arguing that (among other things) we can follow patterns of affiliation and social kin-making in the movement of objects and materials, including fragmented human remains. Her work creates space for queer relations and relations with other-than-humans in our archaeological kinship discourse, a factor R. Crellin and O. Harris (2020) emphasise as key to formulating a sophisticated and comprehensive understanding of past people's kin-worlds. Similarly, R. Johnston (2020) looks at prehistoric practices that did ›kinwork‹, that is, the making and breaking of kin relations, from constructing and maintaining field systems and monumental earthworks to the deposition of metalwork in rivers. These sorts of activities materialise intangible kinning practices between people, places, and generations past and future.

2.2 Landscapes of inheritance in Roman Cornwall

In my own work in Cornwall in the south-west of Britain, my colleagues and I have argued that patterns of kinship and affiliation contribute to the formation of occupation patterns in the Roman-period landscape (Lewis/Frieman 2018; Frieman/Lewis 2021; Frieman et al. 2022). Here, from about the 1st century BC, we see a marked shift to settlement structured around small (c. 1 HA) enclosures from a landscape of open settlements and the occasional enclosed hill top or promontory site to one characterised by thousands of circular enclosed settlements (Cripps 2006). The majority are farmsteads with round and oval houses within, though some were evidently industrial or agricultural structures (Lawson-Jones/Kirkham 2010), with the majority being constructed in the Roman period. Some seem to have been occupied continuously for centuries (Quinnell 2004), while others saw only brief phases of occupation or perhaps even intentional abandonment after only a generation or two (Cole/Nowakowski 2021). Aside from these embanked sites and some newly identified open settlements (Young 2012; Jones 2019), there is no further evidence of settlement hierarchy; and villages or central places do not emerge until the later 1st millennium AD.

The embanked sites themselves are sometimes considered elite settlements, and some show clear evidence of elaborate entryways, multiple encircling rings of ditches and banks, and other monumental constructions (Lewis/Frieman 2018). Yet, despite these outer-works, they are almost uniformly small in size and contained just a few round or oval structures (Fig. 1). We have argued that they probably functioned much like fortified manor farms and were occupied by extended family groups. Following this model, we can see, in those sites occupied for generations or even centuries, patterns of protected, familial inheritance that saw the rights to occupy the embanked farm site (and likely also to control pasturage or other agricultural lands) passed down through an established lineage.

At the same time that these enclosed sites were settled, the Roman military was actively engaged in mining activities around the Cornish peninsula (Borlase 2020). Multiple military installations are known, some more long-lived than others, that testify to the local presence of occupying Roman forces (Fox et al. 1972; Smart 2014; Nicholas/Hartgroves 2018), yet little in the way of Roman material is present within the embanked settlements (Thomas 2016). Moreover, few of the settlements were located in visually imposing locales, or placed to control major routeways, suggesting that the power of the lineages who occupied them derived neither from contacts amongst the Roman army nor from control of the flow of goods in and out of Cornwall. Instead, we suggest that the powerful kin groups who occupied these sites were likely engaged in more complex and local status competition centred on access to prime grazing land that articulated through kinning practices, including marriages, adoptions, and other more ephemeral forms of affiliation (Frieman et al. 2022). Certainly, the pattern of land tenure and inheritance was stable enough to withstand the Roman occupation and outlast the Roman Empire, although Christianisation seems

4 Brück 2019; Brück 2021; Booth et al. 2021; Brück/Frieman 2021.

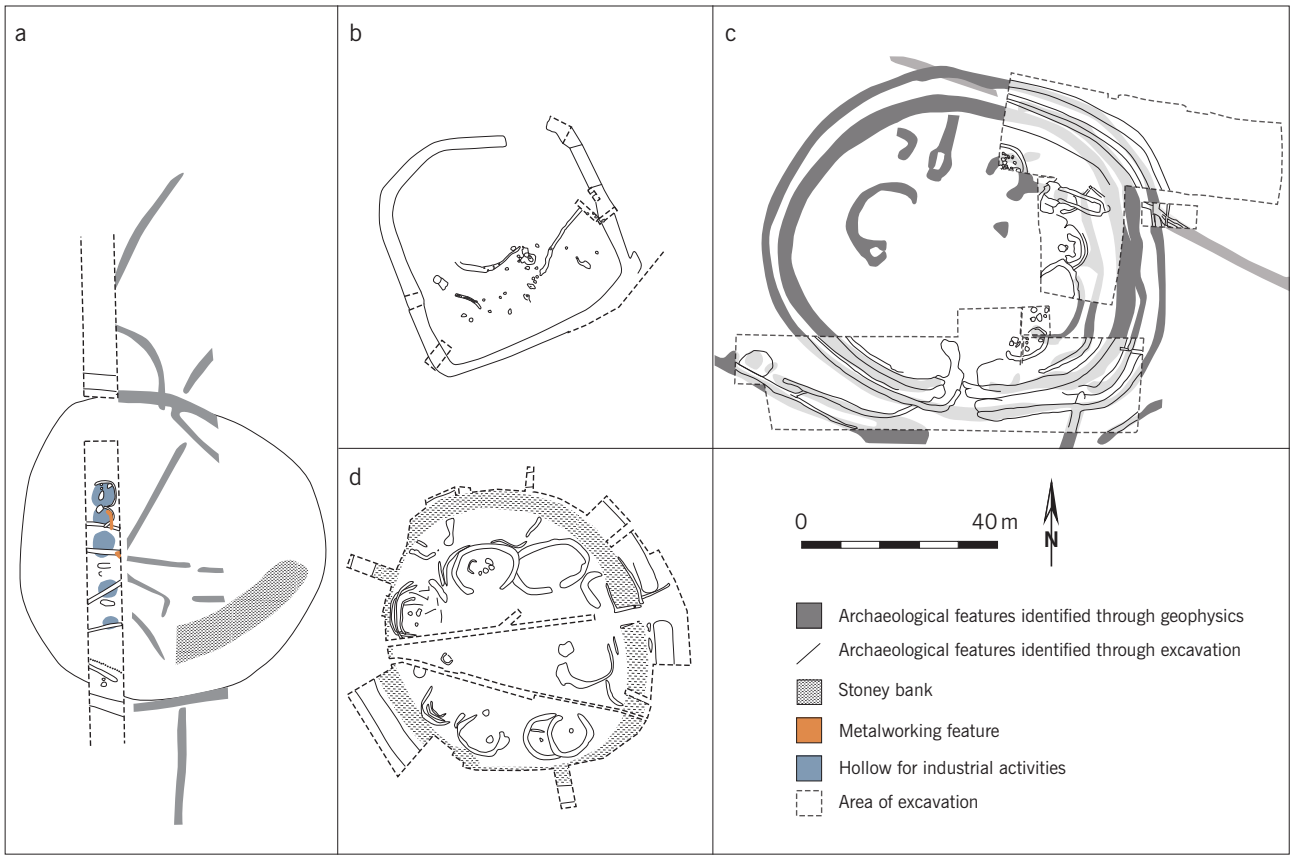

Fig. 1a–d Ground-plans of four Cornish embanked enclosures. a Little Quoit Farm, St Columb Major; b Porthleven; c Penhale Round; d Trethurgy.

Abb. 1a–d *Grundrisse von vier eingedämmten Einfriedungen in Cornwall. a Little Quoit Farm, St. Columb Major; b Porthleven; c Penhale; d Trethurgy.*

to have led to a fundamental rupture and social and geographical reorganisation (Rose/Preston-Jones 1995).

3 Messy data, messy conclusions

As we have seen, at present, there is no clear archaeology of kinship, but we are, I believe, also seeing a number of emerging ways of thinking about kin and kin-making in archaeology. This is, of course, where funerary data and genetic research become so valuable, but also so perilous. Funerary sites have attracted archaeological attention since before the formal discipline emerged, and many of our earliest methodological insights derive from the excavation of burial contexts (Schnapp 1996). There are myriad sources of information about past people and their social structure in funerary contexts. The body itself (if present and able to be analysed) offers insight about diet, health, habitual practices, and biological descent (Sofaer 2006). The grave morphology and any structural components tell us about technological and social process, including funerary rites; and grave goods, those artefacts accompanying the deceased, have been interpreted in myriad ways as markers of identity, status, or social role (Cooper et al. 2022). Further, the presence of other human remains or burial sites offers insights into patterns of occupation, funerary practice, and perhaps also kinship (Garwood 2012).

Yet funerary sites are imperfect mirrors of living society. Burials are, following M. Parker Pearson's (1999, 3) well known aphorism, for the living not the dead. We can understand funerary rites as emotionally charged events that center around the transition of a person from the living community to a state of death, but these are also often performances with actors, props, staging, and powerful political and social undercurrents (Price 2010; Hull 2014). Thus, we must take care in assuming a given grave assemblage represents any essential thing about the deceased themselves in life, rather than being elements of their accoutrement in the complex rituals designed to mark their death, transition them out of lived relationships, and rearticulate social and political ties in their absence. Moreover, the grave assemblage as revealed by archaeology is itself the product of complex and ongoing taphonomic processes – biological, geological and social – that shape aspects of preservation and association and affect our ability to interpret and understand both the human remains and the funerary practices that led to their deposition (Duday 2009; Knüsel/Schotsmans 2021).

Archaeological data are irreparably fragmented to a scale that is truly unknowable. When reconstructing social practices, including patterns of relation, from the archaeological record, we must be attentive to its incompleteness. To that end, I have developed a model of funerary uncertainty (Frieman in press). This model draws inspiration from the well-known palaeopathological model of the osteological

Aspects of uncertainty	Contingencies
Survival non-uniformity	Various taphonomic processes differentially affect the survival of human remains, leaving us with a patchy and uneven dataset that may be biased in preservation or entirely randomly preserved.
Selective deposition	Only a segment of any population – and sometimes quite a small one – was interred in archaeologically visible ways; so, by using funerary data as a key source for modelling past identities and social practices, we are drawing normative conclusions from social outliers.
Social heterogeneity in rites	The funerary record is all that remains of a variety of tangible and intangible social practices that form part of funerary rites. These may or may not engage with aspects of the decedent's identity. Funerary sites are carefully assembled in these rites, highly variable, and temporally flattened, since considerable time may elapse between a person's bodily and social deaths.

Tab. 1 The archaeothanatological paradox.

Tab. 1 *Das archäothanatologische Paradoxon.*

paradox that gives structure to the complexities of inferring patterns of health and well-being among living people from incomplete assemblages of those already dead (Wood et al. 1992). I suggest that, in order to begin making sense of the past living world via the funerary record, the »archaeothanatological paradox« requires us to take into account the complex ways the archaeological record diverges (often in unpredictable and even unknowable ways) from the world of the living (Tab. 1).

Fragmentation is not itself inimical to interpretation, but it requires us to allow for greater uncertainty in our models and to admit to the holes in our data. As we all too often lack interlocutors to explain complex cultural formations and patterns of relation only partially visible through archaeology, we build our inferences through the analysis of incomplete, overlapping and all too often contradictory bodies of data and material (Chapman/Wylie 2016). That our field is underdetermined is often cast as a weakness (Turner 2007). However, following archaeologist J. Gero (2007), the ambiguity of our data and the lack of certitude in the models we draw from it are far better reflections of the complex and messy pattern of human relations, cultural contingency, and contested meanings than any one singular narrative could offer (cf. Currie 2018; Currie 2021). Indeed, even computational biologists can see that sometimes multiple differing scenarios are equally good fits for the available data (Maier et al. 2023).

To conclude, and with all these levels of uncertainty in mind, I propose a tangible, if imperfect, model of kinship that incorporates elements visible archaeologically: ethnic-

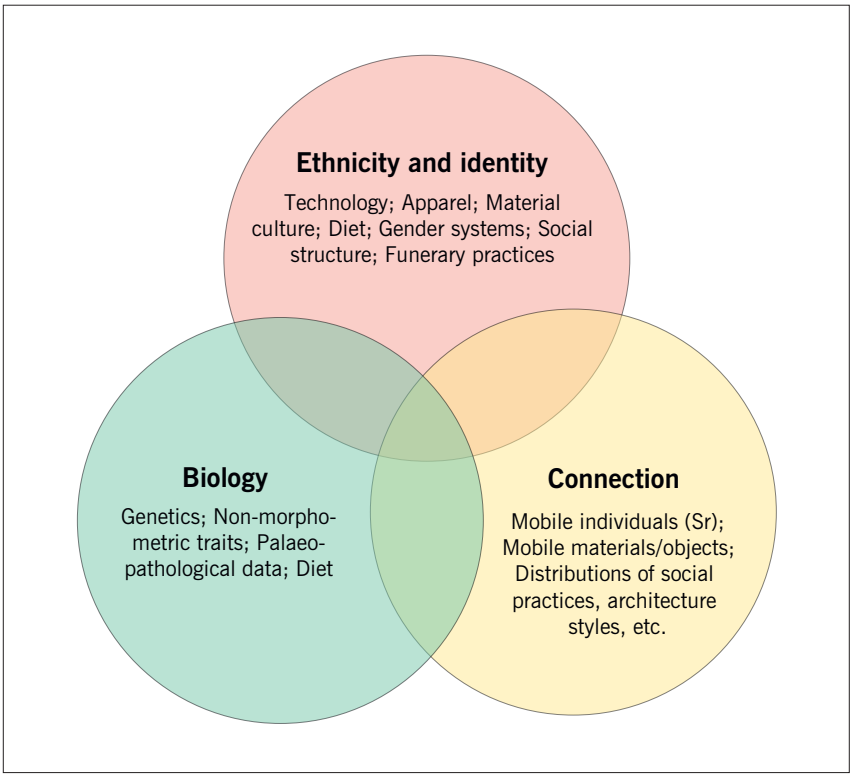

Fig. 2 A preliminary model of kinship visible archaeologically.

Abb. 2 *Ein vorläufiges Modell der archäologisch sichtbaren Verwandtschaft.*

ity/identity (technology, apparel, material culture, diet, funerary practices, etc.); connection (mobile individuals, raw materials, and things; distributions of materials, styles, etc.); and biological relatedness (genetics, non-morphometric traits, palaeopathology, etc.; Fig. 2). Ancient DNA gives us insight into one hoop of this diagram, social archaeology into another, and other archaeo-scientific and biomolecular methods into the third. In this way, the social narratives of kinwork and kin-craft, of queer kin and other-than-humans enrich the biological data, just as these biomolecular methods push us archaeologists to return to well-known sites and data to ask new questions.

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Source of Figures

1 author; a redrawn after Lawson-Jones/Kirkham 2010, Fig. 3–4; b simplified and redrawn after Jones/Kirkham 2021, Fig 6.11; c simplified and redrawn after Nowakowski/Johns 2015, Fig. 7.2; d simplified and redrawn after Quinnell 2004, Fig. 5
2 author

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