

REASSEMBLING AND GENERATING CULTURAL NETWORKS

A digital humanities research agenda

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This paper proposes a research agenda to study cultural networks that assumes their role both in making meaning and as adaptative tools for humans and their communities. First, the agenda grounds the study of cultural networks in Whitehead's (1861–1947) metaphysics of process, posing that cultural networks emerge during human's production of relations with the world of phenomena. Then, the paper identifies two approaches to studying cultural networks, reassembling them or generating them. Thirdly, it contextualizes the importance of understanding cultural networks *vis a vis* the consolidation of the digital humanities in the academic domain, and the productivity of networks as tools to explore the cultural in networked domains of human experience. The final remarks locate the proposed research agenda within the context of multidisciplinary research on cultural analytics.

Keywords: cultural networks, digital humanities, cultural analytics, metaphysics of process, phenomena.

■ INTRODUCTION

A cultural network is a phenomenon resulting from a human being engaging with the world by means of discretizing it through distinct relations. The discretization I refer to is of the world of phenomena, and it results in establishing discrete relations in order for «things» or «objects» to emerge on the other side of those relations. In the world of phenomena, there is no relation without its object, and there is no object without its relations.

Once a specific discretization (or set of them) is spread within and adopted by a human population, the resulting phenomenon reaches certain stability within the population. I argue that this happens as part of humans' adaptation and that it also propels humans' extraordinary ability to adapt across environments. Understanding this phenomenon across different scales of time and space is one of the goals of the incipient field of cultural network analysis.

A cultural network is one of the forms the process of reality takes up as human beings engage with complexity in their environment. From an evolutionary standpoint, cultural networks emerged from reality into the world of phenomena¹ the moment humans started to rely on objects (material objects or things as well as

¹ The philosophical grounding of a practice of cultural networks research should come from a metaphysics of process, relations, and impermanence, such as the one described by A. N. Whitehead in *Process and reality*:

«The positive doctrine of these lectures is concerned with the becoming, the being, and the relatedness of 'factual entities.' An 'actual entity' is a *res vera* in the Cartesian sense of that term; it is a Cartesian 'substance,' and not an Aristotelian 'primary substance.' [...] In these lectures 'relatedness' is dominant over 'quality.' All relatedness has its foundation in the relatedness of actualities; and such relatedness is wholly concerned with the appropriation of the dead by the living—that is to say, with 'objective immortality' whereby what is divested of its own living immediately becomes a real component in other living immediacies of becoming. This is the doctrine that the creative advance of the world is the becoming, the perishing, and the objective immortalities of those things which jointly constitute stubborn fact.» (Whitehead, 1929/1979, xiii-xiv).

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manipulable mental representations) in order to adapt to their environment and to coevolve with it. And it is the world of phenomena and their representations that the researcher deals with. That is, cultural networks provide human beings with tools for the adaptation to various levels of evolutionary complexity. Those objects have both a practical purpose – they are tools employed to perform changes in or adapt to the environment – and a relational value – they shed light on the discrete relations they help to establish. We call them «cultural» because culture is, in this context, the realm in which humans make sense and meanings, thanks in part to the discrete relations they are able to make emerge by using those objects or things in their engagement with the world of phenomena. In this respect, it is one of the goals of studying cultural networks to unveil the cultural, the meaning making, in those relations, so that we can also better understand the human component of it. Networks are the phenomena used to approach this goal.

■ REASSEMBLING AND GENERATING CULTURAL NETWORKS

Studying cultural networks benefits from one of two approaches: reassembling them or generating them. Reassembling (Latour, 2005) a cultural network implies assuming that the cultural network happened in the past with respect to the time the researcher is conducting their research in. It also implies that the phenomenon that is a cultural network is no more, even if this distinction between the past and the present is arbitrary and due to methodological purposes. It also implies that the researcher has to gain access to a past phenomenon and therefore deploy the tools and methods to gain that access.

As the researcher establishes how to get access to a past process through whatever type of evidence or data, they assume and make it explicit that neither the evidence nor the data are the same as the network, and that taking the evidence or data for (as if) the past network is part of a method to represent those past networks. I call the set of these methodological steps to gain access to past networks «reassembling cultural networks». In this expression «reassembling» refers to ascertaining the boundaries within which the research tools are able to bring forward into the present the discretizing performed by human beings in the past through relations with things in a defined context.

Generating cultural networks is the second approach or framework to study cultural networks. In this case, the researcher uses whatever discretizations are at hand to imagine ways in which they could concretize them into possible or hypothetical network formations. Therefore, the method of generating cultural networks employs existing evidence or data to postulate cultural networks that have not existed yet, but could exist in the future or could have existed in the past but never did. The generation of cultural networks can be implemented in multiple ways, from art-based imaginative methods, that is, human creation, to generative artificial intelligence systems based on large language models.

An important distinction between both approaches lies in the fact that the future, at least at the scale of cultural networks, cannot be accessed with the tools we have available in the humanities, except when we consider creative and imaginative processes as part of the humanities research toolbox. Thus, generating cultural networks plays with the ideas of inertia and

path dependence in the trajectories of the processes of concretization² (Whitehead, 1929/1979) that we know have happened or are happening. Implementing computational methods around those two ideas (inertia and path dependence as implemented in generative AI systems), and understanding how reliable they are and how far we can look into the set of possible future cultural networks given certain initial conditions, is part of the tasks this research agenda needs to tackle.

Both approaches to studying cultural networks can create new data or evidence that may also be used to understand specific aspects of those past or possible networks.

It is important to note that the use of singular or plural to refer to a cultural network or to cultural networks is both a matter of style, and of the scale at which the phenomenon is described. It seems to be the case that once a cultural network in its simplest description arises as a phenomenon of culture, the world of phenomena gives rise to multiple discretizations that can, in turn, be described in isolation or, if it is the case, as part of a cultural continuum of networks whose scale and boundaries the researcher needs to declare.

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² «Thus the 'production of novel togetherness' is the ultimate notion embodied in the term 'conrescence.'» (Whitehead, 1979, p. 21).

■ DIGITAL HUMANITIES AND CULTURAL NETWORKS

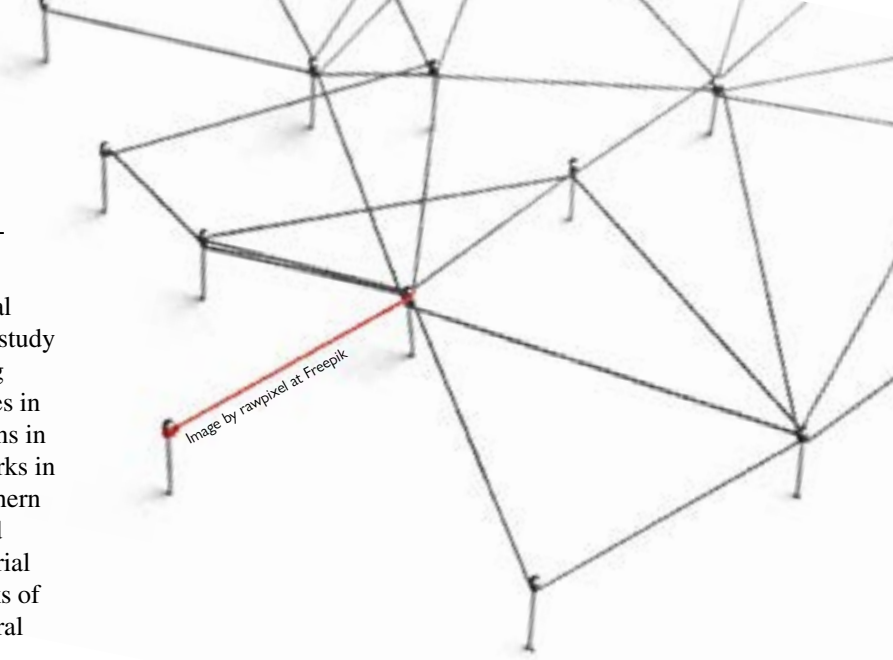
Using traditional humanistic approaches, several studies have deployed the notion of network to study different historical domains and periods, among them, Islamic trade and cross-cultural exchanges in nineteenth-century Sahara; cultural organizations in contemporary Ibero-America; economic networks in Ancient Egypt; cultural interactions in the Northern Black Sea in Antiquity; economic networks and cultural connections across history; cross-imperial networks across the globe; kinship and networks of exchange; the British Empire and the eco-cultural networks it generated; gendered networks and women's patronage in Early Modern Europe; the networks behind Modern art exhibitions; literary and social networks unearthed from different collections of letters and correspondence; or the cultural networks of Spanish Baroque drama. McNeill and McNeill (2003) adopted a network perspective of global history in *The human web: A bird's-eye view of world history*, whereas Schich et al. (2014) proposed a macroscopic view or network framework of cultural history in which data analysis and network theory and metrics played an important role. From a sociological viewpoint, Emirbayer and Goodwin (1994) stated that an historical explanation through networks needs to introduce a synthesis of socio-structural and cultural analysis that integrates individual autonomy and agency. More recently, Erikson and Feltham (2020) have analyzed the field of historical network research by focusing on phenomena of interest for social network analysis such as cross-cutting ties, informal social ties, associational and organizational networks, narrative networks, cohesion, and brokerage and centrality.

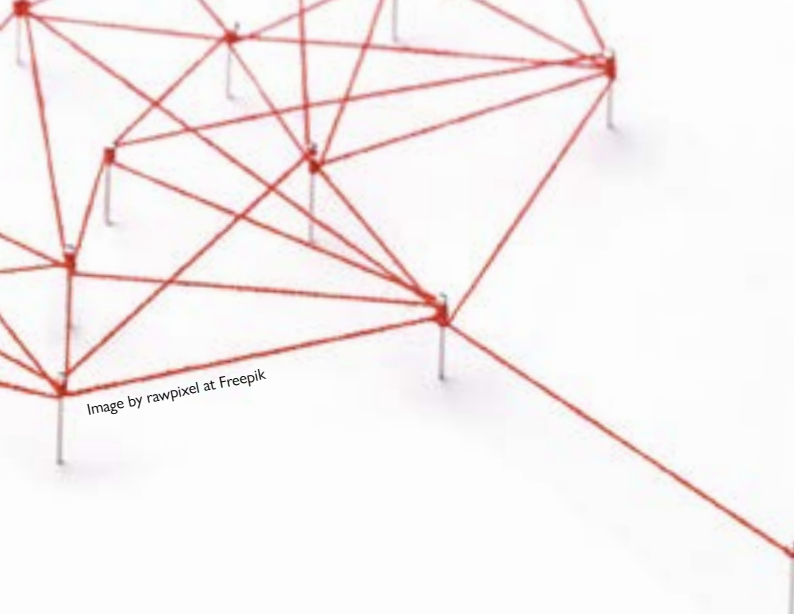
This digital humanities-led research agenda is about the existence of links or nexus (Whitehead, 1929/1979) that humans use and create through cultural objects, in order to scaffold reality and make meaning of their existences as individuals and communities. Cultural objects are to be understood here as objects that humans use or devise to make meaning with other humans through establishing contextual links or relations in specific domains. In this specific context, a cultural network is represented as a multimodal network in which at least two types of nodes represent people and symbolic units or objects, respectively, and in which

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these symbolic units or objects symbolically and cognitively connect people to one another. That is, a cultural relationship is created via an object or an idea that semantically loads the links connecting humans through joint attention with information contextually relevant to harnessing the existing environmental complexity, ultimately facilitating the cultural learning of participants within the cultural network. Those spaces of joint attentionality are the embryos of cultural networks and they are better understood through the multiplexity deployed by Gondal (2021) to preserve the co-occurrence of multiple types of relations.

The proposed agenda contributes to ongoing conceptual debates about network analysis in the humanities and social sciences, and it advances the research agenda on the integration of computational methods in the analysis of human networks in the following ways. First, it devises a way to ground the exploration of cultural networks in a strong ontology (Whitehead, 1929/1979) that, at its basis, inscribes the ideas of nexus and flow as necessary to the description of reality. Similar approaches in the context of social network analysis have been undertaken by Abbott's recent contributions to a processual sociology and on the role of events in social network formation (Abbott, 2016). Second, this research agenda proposes to engage in a discussion about culture and meaning that takes as its jumping off point, the long tradition of marking off a space of analysis in which culture is conceived of not only as the result of actors' making meaning in tie formation,





but as a networked domain. In these networked domains ties between actors are mediated by units that carry symbolic values (concepts, ideas, tags), that is, they are socio-material and cultural networks, but also, digital networks. The resulting network domain is made up of nodes representing cultural objects such as paintings, books, letters, etc, in which the dynamics of these objects is the focus of study. Third, following up on a fruitful research model developed to study a personal lending network in Renaissance Florence (Gondal & McLean, 2013), the methodological steps outlined by Fuhse and Gondal (2015), and my own work on cultural networks (Suárez et al., 2011), this paper calls for the development of a research methodology for reassembling cultural networks framed within a digital humanities practice, a research practice that is aware of the biases and limitations in the datasets employed.

This framing addresses the question of what the historical significance of network analysis is for every specific case of study beyond the collection of structural features that can be compared across networks. To be able to address this issue Lupker and Turkel (2021) have argued for a formulation of the research questions not in terms of the computational or analytical tools employed, but in terms of the humanistic discipline that has traditionally dealt with the subject matter. This approach is reinforced through Gondal and McLean's fruitful, structural and compositional analysis of interpersonal lending networks of Renaissance Florence. They demonstrate the necessity of a multi-level approach to the analysis, which allows the researcher to access and represent cultural networks that require historical contextualization. Another important feature of this

approach is the separation and proper description of the domain in which the historical or cultural relations occur, and the networks that we are able to reassemble in order to use them as interpretative and analytical tools.

This research agenda also proposes to analyze different cultural domains as each of them brings forward different challenges to help advance the research agenda on cultural networks. There are several purposes to the analysis of specific cultural networks, among them, developing and testing analytical tools and methods (Schwartz, 2021) and probing into the concept of «networked context» (Miccio et al., 2022) as a heuristics to gain access to the interplay between individuals and their specific domains, taking into account the biases, voids, and injustices embedded in the data available to reassembling or generating the proposed networks.

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■ FINAL REMARKS

The evidence or data to study cultural networks can refer to the object(s), the relation(s) and/or the human(s) that make up the network. With enough evidence and a well-defined context, both reassembling and generating cultural networks can be performed

through each of these types of entities, or several of them, if available. It has been the case that a great deal of the depth of knowledge created through humanistic research has been accomplished by studying the humans and/or the cultural objects that make up networks, even if in many cases traditional approaches do not necessarily focus on the networked condition of their research objects. Bringing forward and exploiting the wealth of knowledge developed in the humanities is one of the reasons that explain why this article focuses on a digital humanities research agenda for understanding cultural networks.

At the same time, as the toolbox of cultural analytics starts to develop and grow, it is also possible to analyze cultural networks by using events or metrics (network analysis metrics) as they relate to the cultural networks that are being reassembled or generated (Schwartz, 2021). In a sense, these are also just entry points that allow the researcher to collocate themselves with the networks they are researching. Choosing a more analytical or more humanistic approach to the study of specific cultural networks is a matter of efficiency, skills, and preferences, although

some of the most productive attempts to analyze cultural networks have happened when a combination of those have been possible through collaboration among individuals with different but complementary disciplinary training.

It is also important to point out that the relations existing in cultural networks are somehow different from those studied in social networks, although this is more an issue of the focus and the tools used than of the phenomena themselves. We assume that cultural networks tend to concretize when an object completing the discretization initiated by an individual is also the thing enabling another discretization by another individual, both of which would be then connected by this thing or object. We also assume that these discretizations that end up connecting humans through objects are conducive to making sense of the world for the individuals involved. Here lies a great deal of the evolutionary power of cultural networks and of their importance as phenomena to be studied.

The research agenda sits at the intersection of digital humanities and cultural networks analytics, and as such it is mainly concerned with human processes of making meaning using networks. This has been the traditional focus of the humanities and some of the social sciences, and has become a key element in the disciplinary musings of the digital humanities as they come into the ecology of academic disciplines. As such, the task of reassembling or generating cultural networks assumes the risks involved in imagining and creating new tools and puts in place new practices that fit better with objects and digital environments. Those risks involve a set of theoretical and methodological decisions for the digital humanist to participate in a convergence that will rearrange concepts, categories, and practices. This research agenda seeks to contribute to that convergence by developing a method and practice for digital humanists to fully participate in the emerging area of cultural networks analysis. To do so, this research agenda would develop a digital humanities methodology to help reassemble and generate cultural networks in order to understand their processes of formation, adaptation, and transformation from a humanistic standpoint.

It is my assumption that understanding the mechanisms, topologies, and resources of cultural network formation, of the past, present, and future, provides us with an opportunity to better

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understand the important roles cultural networks play in cultural formation as we go deeper into the digital transformation of our human condition. It is also my hope that it may help the Humanities to adapt to a research arena increasingly characterized by collaborations across disciplines, tools, and, ultimately, the new research questions afforded by those collaborations. ☺

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