

# ONLY CONNECT? NETWORK ANALYSIS AND RELIGIOUS CHANGE IN THE ROMAN WORLD\*

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**Abstract:** The emergence during the Roman Empire of new religious forms and groups alongside the collective cults of the city and ruler worship invites analysis in terms of various kinds of network theory. Some of the main version of network theory currently in use are examined, and their applicability to ancient material is discussed and assessed. Network thinking turns out to be very useful, but the problems in conducting a more formal network analysis are formidable. Network theory does allow us to approach religious change from new directions and two models of change in current use – conversion as contagion, and religious change as the spread of idea – are examined. Thinking about religious change in these terms forces historians to formulate more precise descriptions of change as a process that involves socialization and the routinization of new habits and rituals, as well as a process of learning a new way of imagining and describing the cosmos.

**Keywords:** Religious change, Network analysis, Roman Empire

## RELIGIOUS CHANGE IN CLASSICAL ANTIQUITY

The millennium or so that stretched from Rome's achievement of Mediterranean hegemony to the Arab Conquests was marked by major religious changes. For most of this period the political order was dominated by two kinds of institutions – city-states and tributary empires – and at the start of the period both were generally successfully accumulating religious authority. Political orders were naturalized and related to cosmological ones, public ceremonial and temple building was focused on collective civic religion and on various forms of ruler cult, and those who claimed independent religious authority – prophets, astrologers, magicians, barbarian priests and so on – were marginalized and occasionally persecuted. This situation has been traced back to state formation in the archaic period (DE POLIGNAC 1984; ALCOCK, OSBORNE 1994; ALCOCK and OSBORNE, 1994). So-called 'polis-religion' and 'imperial cult' have each generated vast bibliographies. The extent and significance of each within the religious landscape remains debated, as modern scholars take different views on how

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successful different *élites* were in imposing their view on religious practice at large.

During the first millennium CE alternative religious forms emerged until by late antiquity religious authority was much more dispersed, and the link between political identity and religious identity had been greatly diminished. Jews, Christians and Manicheans attracted the most attention from civic and imperial authorities, but precursors and parallels have been found among worshippers of Bacchus, of Mithras, of the Egyptian cults and the Syrian deities and among philosophical groups such as the Epicureans and Neo-Platonists, among Samaritans and Mandeans and others even less well documented like the worshippers of Zeus Hypsistos.<sup>2</sup> These groups were not all alike, indeed some may not have been religious groups in a modern sense. Some gods simply moved with migrants, and probably some migrant communities accreted new worshippers from the populations among which they settled, and most 'cults' were certainly not exclusive. We have no idea whether those who worshipped Mithras thought of themselves as "Mithraists" nor whether there were any conventional limits on any other ritual practices in which they might have participated. Some scholars prefer not to use the term religion before the emergence of exclusive Christianity, others see a self-conscious religious identity emerging only with Islam, yet others consider that religion in a modern sense existed only after the Enlightenment, when a tacit definition of secular spheres in politics and science created a restricted space that might be labeled as religious.<sup>3</sup> There is, however, a consensus that by the end of antiquity 'the religious' and 'the political' were aligned in different ways than had been the case a thousand years before.

I should admit at once that other primary arrows of change have also been suggested, and other ways of describing the change. The end of sacrifice has seemed significant to some, but assessing

this claim depends on adopting a particular view of sacrifice, as a single family of practices and one central to most ancient religious systems (STROUMSA, 2009). Ritually killing of animals was certainly prominent in many traditions, but coexisted with many other practices. Prayer, and gifts to the gods are obvious cases in point. And domestic animals were not the only things ritually destroyed: crops, human beings, treasures might also be disposed on. The line between sacrifice and votive offerings is often difficult to draw. Sacrifice is, in the end, as much a modern generalizing category of religion. And besides the change is much less clear since ritualized killings remain an important part of many religious traditions, as do the communal eating that often accompanied them in antiquity.

Equally unconvincing is the argument that there was a gradual shift in most traditions from polytheism to monotheism.<sup>4</sup> For some this is all an offshoot of Judaism, for others a set of convergent trends shared by Jews, Christians and even some late pagans. Monotheism also lurks behind many of the claims that the religious movements of the so-called Axial Age, represent new transcendent experiences and revelations linked to the sociological and spiritual development of our species. Yet the supposed rise of monotheism was much less complete and clear cut than it is sometimes presented. Not only are there many polytheists still around today, but the analytical distinction is not so easy to draw as it might seem. In many polytheistic traditions it is possible and common to speak of God or Heaven as a single unity, and no One God has ever done away entirely with a supporting cast of angels and demons, avatars and saints (NORTH, 2005).

In the remainder of this article I will take as my starting point the proposition that the religious changes we most urgently need to understand are those that culminated in the religious pluralism of late antiquity, in the disembedding of ritual from social and political institutions, and in the separating out of religious from other kinds of authority and identity. Concretely this mostly comes down to

<sup>2</sup> North (1992) offers a classic formulation. See also PRICE 2003, RÜPKE 2007.

<sup>3</sup> Discussion in SMITH 1964, ASAD 2001, NONGBRI 2013, 2008.

<sup>4</sup> MITCHELL, VAN NUFFELEN 2010 for the state of the debate.

trying to understand the appearance of new religious groups, variously termed in the literature voluntary associations, elective religions and (least happily) religious/oriental “cults”. Some of these terms have a long history, more than a century in the case of “oriental religions”. Much more recently religious change has been a key field for the application of various kinds of network theory. My aim is to briefly survey this field and to ask what network analysis does well, and what it does less well in helping us understand newly emergent religious phenomena in the Roman World.

## NETWORK ANALYSIS AND ANCIENT HISTORY

Network analysis has been around for a generation or so, but it is only recently that it has been applied to classical antiquity.<sup>5</sup> A wide range of network approaches exist, and not all have yet been shown to be relevant to our subject, but they have some things in common. Network thinking invites us to think not only about individual cases, or about classes of data, but also about how individual data are related to each other. This allows us to recognize some patterns that otherwise we can only intuit. It also allows us to think about phenomena that are products of the network as a whole. It is easiest to explain this through some examples.

Perhaps most familiar is the study of urban systems as networks. Each city forms a **node** or **vertex** which is connected to others through roads and other transportation routes which can be considered **links**, **lines** or **ties**. Aggregate enough cities and the ties will form a topological pattern, one which will reveal which cities are more central (**hubs**), which more marginal and how densely connected the system as a whole is. Because we use maps of this kind all the time, to navigate metro systems or plan flights, we are familiar with the kind of pattern that emerges. Some applications of this sort of approach

have been made to Roman urban systems (MORLEY, 1997; WORTHAM, 2006).

It is easy enough to create a taxonomy of towns, grouping them for example by size or by juridical status or location. Doing so would produce an attribute analysis, one in which data are considered in terms of their properties/ attributes but not in terms of their relation to one another. From this we might tell, for example, that 75% of the cities in the Roman world had less than 5000 inhabitants, or that *coloniae* were overwhelmingly concentrated in the Mediterranean regions of the empire. What a network analysis allows us to do is to show how individual cities with different properties were related to each other. For instance we might discover that small towns in the interior of Africa (like Augustine’s birthplace, Thagaste) were less well connected than was the town at which he was educated, Madaura, and that neither were as well connected as Carthage where he later taught or Rome to which he moved as a teacher or Milan where the imperial court was based. Augustine’s social mobility entailed moving upwards through a hierarchically ordered network of cities, just as his subsequent spiritual mobility entailed descending back down through that urban network to become a small town bishop at home in Africa. This tells us something not only about Augustine, Madaura and Carthage (each a **datum**) but also about how they were connected. It also suggests some general relations between social hierarchy and urban hierarchies, relations we might test with other examples.

Considering urban networks in this way can also be used to supplement with the key postulate of **Central Place Theory** (CPT) that places may usefully be ranked in terms of the services they provide. Higher ranking places are those which offer a wider range of services to a larger area, lower ranked ones are dependent on higher ones for some services. Network thinking allows us to go beyond sorting cities by rank to seeking how the system worked as a whole. Madaura educated more than its own children, Carthage had something approximating to a university and so on. Naturally we could look at other services for which individuals used the network. For example we might explore

<sup>5</sup> Pioneering studies include MALKIN, CONSTANTAKOPOULOU, PANAGOPOULOU, 2009; MALKIN, 2011B; EIDINOW, 2011; MALKIN, 2005; RUTHERFORD, 2007; COLLAR, 2013; VLASSOPOULOS, 2007.

the networks of small local harbours located wherever possible around the Mediterranean and used by shallow draft vessels, and the network of deep water harbours - more widely spaced - that larger vessels were required to use, and we might ask how the movement of goods was managed across these networks.<sup>6</sup>

A number of studies have employed **social network analysis (SNA)**. In this case it is people who are the nodes, and their relationships with each other that are the links or ties. Those relationships might be based on kinship, friendship, working together, or long distance contacts. Once again some people tend to be more central, others more peripheral. Typically in social network analysis we find individuals tend to be associated in clusters. People in the same village may all know each other creating a denser set of links, while a few may have connections further away, people only they know. It has become common to differentiate links or ties by strength – those that connect individuals who know each other well and interact often, as opposed to weaker ties between individuals who interact less frequently. One nuance on this is to differentiate relationships that are simple, based on a single relationship, say between an employer and an employee, with those that are multivalent, say between cousins who also live nearby each other, work together and attend the same church. Anthropologists have been able to produce detailed maps of small communities using this sort of schema (BOISSEVAIN, 1974). It has also been used to map political relationships in antiquity (ALEXANDER, DANOWSKI, 1990).

Some of the earliest anthropological work on social networks has fed into research on Roman patron-client relations. One of the most useful services Roman patrons provided for their clients was **brokerage**, that is connections upwards or sideways to a different patron who might supply the services they sought (SALLER, 1982). Pliny's *Letters* provide many examples of this sort of brokerage, as he secures social promotions and exemptions for

his clients through petitions to the emperor, and intervened on behalf of his dependents with his friends. Emperors were equally reliant on patronage networks as a means of identifying component individuals who might serve them. These examples are a reminder that a key social skill is to build and use networks, so as to promote ones' own goals. Local social networks may be used for many purposes: to obtain support for anything from raising a barn to standing for a local election, to find marriage partners or simply to satisfy a need for social contact beyond one's immediate family, a process that has been called "**kinshipping**" (SHRYOCK, SMAIL, 2011).

These examples also remind us that a key function of social networks is as a medium for transmitting information. This is particularly important when they cross some social distance. No emperor could possibly know sufficient numbers of young members of the senatorial class to know whom to promote. Modern studies of social networks have paid particular attention to their function in information processing, observing for example how knowledge of innovations spreads through communities of farmers. A famous study pointed out the importance in this respect of the weak ties that connected denser clusters of individuals. Cluster connected densely by strong and multivalent ties tended to hold a good deal of information in common: new items arrived via the weak links some members had with socially distant acquaintances (GRANOVETTER, 1973, 1983). This thesis about how innovations spread has been applied to understanding religious change in the Roman world, and so I shall return to it later (STARK, 1996; COLLAR, 2007; PRICE, 2012).

A couple of other varieties of network theory are worth mentioning more briefly. The sociologist **Harrison White** has developed network theory in an ambitious attempt to solve one of the central problems of modern sociology, how to reconcile the free agency of individual human beings with the existence of social structure.<sup>7</sup> (WHITE 2008). White offers a view of social structure emerging from the networking activities of human agents: his work has

<sup>6</sup> For commercial networks RATHBONE, 2009, for large vessels TCHERNIA, 2011. Also interesting is LEIDWANGER *et al.* 2014.

<sup>7</sup> The project might be compared to those of BOURDIEU, 1977 and GIDDENS, 1984.

been appropriated by Esther Eidinow as a means of circumventing the opposition between Greek civic institutions and individual agency that has made it so difficult to explain change within the framework of polis-religion<sup>8</sup> (EIDINOW, 2011).

Finally there is **Actor-Network Theory** (ANT), an even more radical approach to social theory than that of White, in that it invites analysts to explore the multiple web of relationship between humans and non human actants (agents) and the roles each play in sequences of change (LATOURET, 2005). The capacity of this approach to take account of the agency of material culture, and the fact it was developed in part as a means of studying technological change, makes it of special interest to archaeologists, who have in general made much more use of network theory than have ancient historians.<sup>9</sup>

## APPLYING NETWORK THEORY TO ANCIENT HISTORICAL DATA

Archaeologists are more fortunate than ancient historians when it comes to network theory. Much of their data is both quantifiable and firmly located in space.<sup>10</sup> There is a key distinction between social proximity – how far one node is from another in a network – and actual proximity in space, and this distinction can be exploited in analysis. Network theory offers, among other things, a means by which archaeologists can return to preoccupations with the importance of long distance connections, with ‘trade as action at a distance’, with the ‘release from proximity’, with diffusion, interaction and connectivity. The heuristic clarity of network theory allows them to do all this in a clearer and more rigorous way than was possible in the past.

<sup>8</sup> For the critique of polis religion in the Greek world see also KINDT, 2009.

<sup>9</sup> For application of ANT to Roman material culture VAN OYEN, 2015a, b, 2016.

<sup>10</sup> Excellent introductions to archaeological approaches to network theory are KNAPPETT 2011, BRUGHMANS 2013. See also COLLAR *et al.* 2015, KNAPPETT, 2014, BRUGHMANS, COLLAR, COWARD, 2016. On the use of SNA in prehistory BLAKE 2014. For a late antique application see SWEETMAN, 2010; 2015.

Ancient historians work mostly with data that is less amenable to quantification. What quantifiable datasets they do possess are often rather small, comprising a few hundred data at most. Only a few collections of ancient letters are large enough to begin work mapping correspondents. One famous early application of network theory used prosopographic data from Renaissance Florence to pick out the networks of connection and influence that lay behind artistic patronage (MCLEAN, 2007). Ancient data will never be sufficient to do something similar.

The most successful studies to date have either used itineraries, from which road networks and the settlements they served can be partly extracted, or else epigraphic data.<sup>11</sup> Epigraphy has many advantages for this sort of study. Each inscription can be treated as a discrete datum, many can be localized quite precisely, and many can also be dated, if usually less precisely. If a given epigraphic data set is large enough it can be divided chronologically to give some idea about how the scale and distribution varied over time. Collar shows the potential in her studies of inscriptions mentioning IOM Dolichenus, which she breaks down into roughly 50 year periods (COLLAR, 2011; 2013). In these respects the procedure is similar to that used in the production of more conventional distribution maps, such as those Bricault produced to illustrate the stages by which the worship of the Egyptian gods spread around the Mediterranean coastline (BRICAULT, 2001). It faces some of the same problems as distribution maps too, problems of differential survival of monuments, the difficult choice of how many phases to identify when the more chronological divisions are made the less we can rely on each one, the question of what to do with unprovenanced and undatable material. But these are familiar difficulties with which ancient historians are well equipped to deal.

Small data sets, and not many of them, pose some problems. More serious are the gaps in our knowledge. Network analysis is notoriously very sensitive to missing data, much more so than is an

<sup>11</sup> ISAKSEN, 2008; GRAHAM, 2006; MAAS AND RUTHS, 2012 on the itineraries; on inscriptions COLLAR, 2013.

attribute analysis (ERICKSON, 1997). Attribute analysis can be used on the IOM Dolichenus epigraphy, for example, to examine the social background of dedicators. Even if we have only a tiny proportion of dedications ever made – the figure of 5% survival rate is sometime cited for Latin inscriptions in general but that is really only a guess – then so long as we have enough examples, the data is good enough to say that dedicants were much more likely than not to be connected to the Roman Army. Trying to reconstruct a network when some of the nodes are missing is altogether more difficult. Imagine trying to use a metro map on which only one in twenty stops were recorded, and lines only shown when they joined two visible stations. We might guess at the shape of the whole network, but would likely get it wrong. Some datasets are more trustworthy than others. The key is usually an independent source of evidenced. Centuries of antiquarian and archaeological research makes it reasonably certain that there are not too many Roman cities waiting to be discovered. The itineraries seem reasonably trustworthy, if very unlike modern maps. Cicero's correspondence seems to provide a map of the late Republican elite that coheres with what we might infer from other textual evidence. But often we do not have a control.

The early history of Christianity is a case in point. From the Pauline corpus it is possible to sketch out a set of connections linking various points in the Levant – Jerusalem, Antioch, Damascus among them – with a clutch of cities around the Aegean and a more distant community in Rome. We might also use the letters to map a social network, some of whose members were more mobile than others, and (with more difficulty) try to factor in travel between nodes as well as the circulations of letters across the network. Quite a nuanced picture can be reconstructed, but it is very difficult to assess its completeness. First, how complete a picture do the letters that ended up in our New Testament, supplemented by Luke-Acts, present of Paul's network? Some letters may have been lost, some removed in the edit, some simply discarded as not contributing to the aims of the collection. Possibly there were less successful attempts at

extending Paul's influence that were not recorded. If we scale up to a wider view of Christian mission before 150 CE we can be certain that there are huge gaps. Many Christian communities – including those of Carthage, Lyon and Alexandria – appear in our records only at a late stage in their development. Should we generalize from the Pauline material to imagine a larger group of apostles, all operating the same way, but if so why have the others left no comparable traces? On the other hand, if in most of these regions Christian communities were not founded and steered by charismatic apostles, perhaps the same was true for the early Christian communities of Asia, Macedonia and Achaea. We infer Paul's importance from his letters, and Luke-Acts although broadly supportive of his narrative makes it clear there were other connections, and other influential figures involved. Many of Paul's letters, after all, were addressed to Christian communities that were already well established. It is not new to say, of course, that there is much we do not know about the origins of Christianity. But some of these uncertainties make it very difficult for us to assess the completeness of the picture we have of Paul's network, or of its significance.

One further example also illustrates the difficulties of studying a network when we do not know how much of it we can see. I have already used Augustine's *Confessions* as a source of illustration for the working of urban networks and social mobility. It is not, however, an innocent witness. The *Confessions* are artfully crafted to present Augustine's progress through a series of social networks and relationships on his way to the relationship with God that occupies the latter half of the work. Addressed to God from the start it can be read as an account of how good and bad relationships – with his mother, his friends in Carthage, with Ambrose and others – had delayed or accelerated his spiritual journey. And it was an exercise in persuasion, an instructive map for others to use, and a narrative with little redundancy in it. There are, in other words, huge gaps in our data, but we do not know where they are. Augustine's encounter with the Manicheans is a case in point. It is impossible to say now how many of Augustine's friends were Manicheans, whether

he learned about them through the weakest of weak ties, or whether many of his connections were interested in these new ideas. Like Paul he is one of the best documented individuals in antiquity: if we cannot map his social network with confidence, whose can we map?

Attribute analysis faces different kinds of problems with missing data. It is conventional to say that early Christians were more likely to be urban than rural dwelling, Greek than Latin speaking, of socially intermediate status rather than aristocratic and so on.<sup>12</sup> Enough data exists for us to be fairly confident of that characterization, within the small urban worlds we know most about. In this case it is systematic rather than random gaps in evidence, and mainly “known unknowns” that pose the problem. If there were villages of illiterate Aramaic speaking Christians in the hinterland of Antioch in the late first century CE we would be quite unlikely to know about them. But here we are back in familiar ancient historical territory, conscious of our ignorance of the social margins and of the silenced majority, and of the risks of generalizing from fragmentary data.

## NETWORK ANALYSIS AND RELIGIOUS CHANGE IN THE ROMAN EMPIRE

Not all religious change in this period was revolutionary. Collective cult remained important, at the level of the city and also among smaller communities. In some cases it even grew in importance as benefactors paid for grander temples and especially for periodic festivals (WÖRRLE, 1988; SPAWFORTH, 1989; VAN NIJF, 2001; MITCHELL, 1990). Some oracular and healing shrines became major regional centres. Formal embassies were sent by cities to attend each other’s major festivals, and the flood of private individuals visiting major shrines and festivals formed two overlapping networks of association (RUTHERFORD, 2013; ELSNER, RUTHERFORD, 2005). A third kind of network was formed in some regions among those civic grandees who travelled

annually to participate in provincial koina and concilia, paying cult to various combinations of Rome, the emperor and the divi, and doubtless doing other business on the side (DEININGER, 1965). The impact of all this activity in creating provincial and regional élites out of local ones is underexplored, but there are plenty of instances recorded of intermarriage between the very richest families of different cities, and also of the acquisition of portfolios of landholding that straddled a number of civic territories. Network thinking allows us to envisage these major social changes more clearly. Most of the religious activities involved were traditional in form, and they remained under the control of civic authorities. A Roman distaste for autonomous priest-hoods meant that in some cases local elites actually expanded their influence over neighbouring sanctuaries. It is safe to assume that all this networking tended to reinforce polis religion and to bolster the authority of the political and economic elites who controlled it.

It is only with hindsight that these changes seem of less significance than the formation of new kinds of groups that are often barely visible in ancient texts; Bacchic groups, Christians, worshippers of Isis and IOM Dolichenus and the like. These have been termed diasporic cults (to distinguish them from ‘locative’ forms of religion practiced in only one centre); elective religions or voluntary associations (to distinguish them from communities one was born into); and foreign or oriental religions, since some, like the worship of IOM Dolichenus or Isis, began with syncretisms that took place somewhere or other east of Italy and others such as Mithras worship, made reference to actual or imagined eastern origins.

None of these terms is very satisfactory. Many diaspora Jews were in frequent contact with the Temple until its destruction and would have been very surprised to learn they were practicing a different form of the religion. Mithras worshippers were apparently recruited in adulthood, so in that sense it was an elective tradition. But if Christian communities recruited largely from Jews and Gentiles, their children were as tightly bound into their family’s

<sup>12</sup> E.g. in MEEKS, 1983.

practices as were the children of other groups. Nor was it strictly compulsory to attend major civic festivals, and in larger cities individuals exercised some choice over which temples they wished to spend their time and money in. Henotheism, the term given to a concentration on one god among the pantheon, was in all likelihood quite common in ancient cities. 'Oriental' carries with it too much baggage, evoking alien, irrational, ritualistic practices and merging in a single category a wide variety of very different traditions.<sup>13</sup> If we add religious practices carried out by emigrant communities – probably the way the cult of Isis and Serapis first spread through the Aegean world; Epicureans – treated by Lucian as analogous to Christians in the *Alexander* and by some heresiologists as simply heretics; and the various groups who adopted the term *mysteria* from the impeccably polis cult of Demeter and Eleusis, it is difficult to escape the conclusion that what these groups all had in common was their difference from collective civic ritual. The prototypes of religions were very various. Many experiments were probably still born. Yet early empires do seem to have created opportunities for some new groups to thrive, first on the margins of polis religion and later much closer to the social cadres that ran the polis.

The earliest evidence for these groups tends to be very dispersed in space, so it is natural to approach them through networks. In the hands of Anna Collar this has proved a powerful heuristic tool, allowing us to imagine both the kinds of connections necessary to explain their dispersal, and the rather different kinds of connections needed to preserve the integrity of alien traditions among those who did not share them (COLLAR, 2013).

Carl Knappett makes a distinction between **network thinking**, a heuristic strategy that encourages us to think in terms of relationships between people and things, and **network analysis**, which begins

by actually defining nodes and the ties that connect them and proceeds, ideally, to quantitative analysis (KNAPPETT, 2011). So far it seems to have been easier for ancient historians to engage in network thinking than in network analysis. Mostly this is because of the empirical problems noted in the last section. It is possible to develop a series of broad correlations between the spatial and temporal distribution of some new traditions and other phenomena. IOM Dolichenus is more commonly worshipped in areas where there was a major military presence. Isis and Serapis moved from Egypt first to the cities of the Aegean coast and thence to port cities in the western Mediterranean. Christianity spread first within areas of prior Jewish settlement, and so on. All this could, however, be discerned from attribute analysis alone, from distribution maps rather than from networks. Techniques exist for converting distribution maps into networks, but these necessarily assume that nodes that are physically close are also closely linked in terms of the network. No doubt this was often the case, but it is not safe to assume it. Paul, after all, was a mobile node at the centre of a largely stationary network. Other mobile individuals – like military officers or those engaged in long-distance trade – might also have established close ties with distant partners, just as many of us today have friends on other continents we know better than we do our next door neighbours.

The most careful engagement with this has been that of Collar who used proximal point analysis (PPA) to generate networks from distributions. Each node connects to the nearest three, and so areas of denser distribution are transformed into clusters. This seems a reasonable technique within a local area, even if it remains speculative. For the Dolichenus cult, Collar's application of PPA generated hypothetical clusters in Syria around the original cult site at Doliche, around Mainz, and at several points in the Danube provinces. All this seems plausible, although a sceptic might feel that it is not necessarily a great advance on what we could learn from distribution maps. Where PPA is more hazardous is in reconstructing the very long distance connections between clusters, the weak ties that should have been so important in the spread of

<sup>13</sup> On oriental religions as a category BONNET, PIRENNE-DEL-FORGE, AND PRAET, 2009. On the way the dichotomy oriental/traditional was calqued on Protestant/Catholic see SMITH, 1990.



Dolichenus worship. Here the network is highly susceptible to single outliers, such as the dedication at Balaklava in the Crimea by a soldier of *legio I Italica* on detachment from Moesia on which some very long distance ties are hung. Collar's exploration of the movements of senior officers has more explanatory value, but we cannot assume they were the key vectors for religious innovations. Travelling religious specialists, or other devotees who happen not to have left epigraphic traces, may have been as influential in shaping the spread of the cult. This returns us to the sensitivity of network analysis to missing data. Another ten IOM Dolichenus inscriptions would be unlikely to change the distribution map much, but in the right locations they could transform the network produced by PPA.

Despite these difficulties, network thinking does help focus our attention on the part connections and mobility played in religious change. Two metaphors recur in discussions of this. One is the metaphor of contagion, the other of information flow. I will consider each in turn.

## RELIGIOUS CHANGE AS CONTAGION

A good starting point is the observation that contact is a necessary, but not a sufficient, condition for the transmission of religious ideas and practices.

None of the scenarios suggested for the spread of the worship of Egyptian gods in the Mediterranean can do without some notion of a contact zone. We might envisage this as a single originating point, a syncretistic ground zero in some kind of Frankenstein's laboratory where Greek Isis was constructed on a slab by a team that combined expertise in Egyptian religion, Greek notions of divinity and Ptolemaic royal ideology. Or we might envisage the contact zone as one or more cosmopolitan environments within which Greeks and Egyptian acquired over centuries the habit of identifying Isis first with Demeter and then with other Greek and barbarian goddesses. The precise origins of each new gods are usually to determine. Some believe Mithras – a hybridization of Persian myth, Greek mystery cults and Roman sacrifice – was created in Rome, some much

further east. Even the origin of Christ in the form in which he was popularized is difficult to pin down. Jerusalem? Antioch? Or did he emerge across the network of connections that linked Jewish priestly families and educated Greek speaking diaspora populations around the eastern Mediterranean?

Fortunately origins matter relatively little compared to the web of connections that carry innovations further afield. A number of influential discussions of the cognitive dimensions of religious change begin from the assumption that all sorts of new ideas are constantly being generated, and what we need to explain is why some turn out to be more successful than others.<sup>14</sup> The argument deals with two distinct stages, the first being the origins of religion and the second a kind of natural selection of religious forms. The first does not concern us very much now: it posits a general human susceptibility to representations of this kind, a susceptibility that conveyed no particular advantage but no disadvantage either, and is to be explained as a byproduct of other features of cognition that evolved because of advantages they conveyed.<sup>15</sup> Yet the second stage is more important since it focuses attention on the processes of cultural selection that made certain forms of cult more successful than others. If we ask, for instance, why Isis of all the Egyptian gods was so successful outside Egypt we might use such epidemiological approach to consider (a) which aspects (or affordances) of the goddess made her in particular suitable for export, and (b) what kinds of social environments were particularly susceptible to her charms.<sup>16</sup> Mapping the network of contacts turns out to offer an important part of the answer, but it needs to be supplemented with information about Isis, and about those who welcomed her in new lands.

How an epidemiological approach works is best illustrated from an actual example, such as

<sup>14</sup> SPERBER, 1985; BOYER, 1996 applied to religious change by SØRENSEN, 2004.

<sup>15</sup> For a similar argument MITHEN, 1996; 1998.

<sup>16</sup> This section draws in part on WOOLF (2014), itself very indebted to BRICAULT, 2004; MALAISE, 2000.

the spread of HIV/AIDS. Here the point of origin explains very little. HIV/AIDS did not spread because its point of origin was at a privileged point in a network of communications. Indeed the reverse is true since it almost certainly originated in West-Central Africa and remained there for more than 50 years, more or less unsuspected either because transmission rates were low or because mortality was assigned to other causes. The virus spread beyond Africa through very weak ties, perhaps just one individual carrying it back to Haiti in the early 1960s. By the time it was identified in the early 1980s it was well established in the US and had a foothold in Europe as well. Explaining the subsequent history of HIV/AIDS involves taking account not just the circumstance of contact but also some characteristics of the virus and the infection it causes and also some characteristic of the social terrain within which it spread. Factors promoting its spread were the relatively long period between infection and the time when the host was killed. Ebola, by contrast, is visible very soon after infection and kills infected organisms very quickly. Other factors included the global connectedness of human communities, and the chance that infection spread to some social networks that were densely clustered with strong ties, among them intravenous drug users and male homosexuals, as well as to consumers of blood products. Its history within each group was quite different, and each was different again from the history of HIV/AIDS in sub-Saharan Africa where it has become a pandemic disproportionately affecting women and children. Factors slowing its spread outside Africa included the inability of the virus to spread through casual contact (by contrast with influenza) and the ease with which informed populations were able to take preventative measures, the fact that it affected some groups with a high level of entitlement and political power, and the potential high value of retroviral drugs to any pharmaceutical company that could develop them. Factors allowing it to spread more widely in Africa include the inadequacies and underfunding of public health systems, poor government policies, the influence of the Catholic Church, poor health education and the high cost of medication. Most of all, the differences

is to be explained by levels of inequality that mean that epidemics that can be contained in the Global North can run wild in the Global South.

This is of course just a sketch, but makes clear what network thinking can explain, and what it cannot. Network thinking helps explain how the virus was originally confined to remote and densely connected communities united by strong ties. It also helps explain the mechanisms through which it jumped to Haiti, to the US and thence to Europe. But it does little to explain why it remained largely confined to high risk groups there, nor why infection rates are falling in some parts of the world while it remains effectively endemic in others. To understand those dimensions of its spread, it is necessary to consider feature of the virus, and of the infection in causes, and a variety of other factors including the structure of the world economy.

The implications are that network thinking can only provide a partial explanation for the transmission of religious ideas, images and practices. For Isis we do need to know about the circumstances of Greco-Egyptian contacts in Egypt and the Mediterranean, the structure of maritime trade and mobility around the Aegean, and the social organization of port cities. But we also need to think about what marked Isis out as special among Egyptian deities: this might include the anthropomorphism of his images, her relative prominence in Egyptian myth, the resemblances between her and Demeter, the particular associations between her and travel by water, and perhaps eventually the contingency of her use in the managed syncretisms of the Ptolemaic court and the managed transfer of her cult to Rome by the Flavians. Equally we need to think about what made the populations that received her distinctive: that list might include an association with the sea, experience of living in mixed communities, a fascination with Egyptian antiquity (and a repugnance to animal worship, mummification and all the exotica that Greek Isis did *not* bring with her). Maritime networks contribute to an explanation, but only so far.

It is not new, of course, to consider the susceptibility (or in Collar's terminology the 'vulnerability')

of the receiving populations. Cumont's original account of the spread of 'oriental religions' has now rightly been superseded, but it was partly based on the idea that specific features of the new religious phenomena offered greater satisfaction to Greeks and Romans than did staid civic religion (CUMONT, 1906). More recently, Richard Gordon has sought to explain the attraction of Mithras worship in terms of specific features of those sections of Roman society where it was most successful, while Beck's proposals for its creation present it as something of a designer religion, skillfully remodeled to suit a particular kind of worshipper (GORDON, 1972; BECK, 1998). An 'epidemiological' or 'immunological' model of the spread of particular new religious forms certainly seems to have more to recommend it than a simple market model in which consumer choice among a range of decontextualized spiritual products has to stand for the susceptibilities, vulnerabilities and sociological particularities of ancient social groups.<sup>17</sup>

## RELIGIOUS AS INFORMATION FLOW

Similar considerations apply to the idea that religious change can be usefully considered as a special case of the general phenomenon by which innovations are disseminated across a network, comparable that is to the adoption of new crops or new technologies (STARK, 1996; MANN, 1986).

Network theory is certainly a powerful means of considering how information is disseminated. Some influential sociological approaches to the origins of social structure represent it as emerging from networks which are themselves produced by the flow of information. Social structure, in this view, is not static but a product of flows of information and energy, fluctuations in which can lead to sudden shifts in levels of complexity and scale. Information makes the network rather than the network channeling information. This approach has been applied to cultural change in the Roman period (VAN DER LEEUW, 1983).

<sup>17</sup> BECK 2006 for a powerful critique of STARK, 1996. See also WORTHAM, 2006.

A more common application of network theory has been as a means of envisaging cultural interactions over significant distances. The chief proponent of network analysis as a tool for examining long term change in antiquity is Irad Malkin, who has for some time been interested in using it in the analysis of cultural change, rather as concepts such as Peer Polity Interaction (PPI) or Interaction Spheres were used before<sup>18</sup> (MALKIN, 2005; MALKIN, CONSTANTAKOPOULOU, PANAGOPOULOU, 2009; MALKIN, 2011a). His most developed formulation, *A Small Greek World* argues that an intensification of interaction across a network of cities acted to create an enhanced sense of Greekness, and so a common civilization. The argument has many attractive components, especially in this case, but once again network theory seems to offer a partial rather than a complete account. Among the objections raised to earlier interaction-based theories was that they were better at accounting for the emergence of large homogenized entities than for episodes of fragmentation or the persistence of difference. One ethnographically based thesis even suggests that in certain circumstances – specifically when groups are in competition with one another for scarce resources – interaction may actually accentuate boundaries (BARTH, 1969). A complete account of the emergence of Greek identity and the conversion of the Mediterranean into a Greek lake needs to explain why some groups with whom Greeks interacted intensively – Phoenicians and Etruscans spring to mind – not only remained resolutely un-Greek, but seem in some circumstances have defined themselves in those terms.

In the imperial Roman Mediterranean too we are dealing not with the homogenization of the religious landscape so much as its complexification. Many borrowings between religious groups resulted in the creation of new boundaries. Mysteries, astrology and the use of sacred texts are all examples of religious technologies appropriated only to make a new group more distinctive. Religious pluralism entails the creation of difference and its constant signaling and recognition. Many individuals

<sup>18</sup> For PPI see RENFREW, CHERRY, 1986 and for a classical application MA, 2003.

must have been well informed about the practices of others. The situation is complicated by non-exclusivity: someone worshipping Mithras might also be a current or past worshipper of IOM Dolichenus. Later the boundaries of some groups became harder, but they were not necessarily impervious to information flow.

There are two major objections to seeing religious change largely in terms of the spread of ideas or the flow of information.

The first is that information alone is not always persuasive. During the Middle Ages there were many locations around the Mediterranean in which Jews, Christians and Moslem lived at close quarters and interacted on a regular basis. Most social networks we could draw would hardly differentiate them, and some at least were very knowledgeable about each other's religious practices and teachings. Yet this did not result in a chaotic and fluid religious matrix in which conversion and hybridization and syncretism came to erase all trace of religious boundaries. The reasons are mostly obvious: religious practice was deeply bound up with kinship and communal identity, each group had developed self-definitions that included accounts of the others, there were strong social sanctions on intermarriage and apostasy, and no one's interests were greatly served by projects of homogenization.

The second objection is that by focusing on the flow of ideas we tacitly treat religious traditions as first and foremost belief systems. In other contexts we are well aware that in antiquity much more social energy was invested in organizing ritual action than in theological reflection. The idea that religion is about ideas might even be considered a Christianizing assumption, were it not that that would give too much credence to just a few strands of Christian thought. Ritual, observance, and belonging have always been as important as dogma to many Christians. When we speak of religious change in antiquity we usually avoid the language of conversion for good reason. Seeking initiation into the mysteries of Mithras, attending outdoor festivals of Isis at the start of the sailing season, meeting with other students to read and discuss the philosophy of

Epicurus, or making a contribution to a small temple to IOM Dolichenus were fundamentally changes in religious practice, not belief. Certain kinds of knowledge accompanied these practices, but just as in traditional Roman religion, this was mostly knowledge of how to participate rather than knowledge about the cosmos. Possibly this was not equally true of all new groups. The mysteries of Eleusis seem to have had a revelatory element. But in general the kinds of changes we need to consider all involve socialization into new groups, apprenticeships in worship, the observance of new rules of behaviour, the acquisition of new habits. The flow of ideas is a part of this, but a small part only.

## CONCLUSIONS

The potential of network theory for the examination of Roman society remains largely unrealized. Archaeologists are only a little further ahead than ancient historians. Religious change is one of the first fields to become a laboratory for this cluster of techniques, and it has already produced interesting results. At present network thinking seems to have more obvious potential than network analysis, which is another way of saying that it is much more difficult to find data-sets to which techniques of quantification can be applied than to use networks heuristically to explore the relatedness of things and people. What has been done so far has shown the power of the approach but also revealed some of its limits. Attribution analyses remain more robust when data sets are full of gaps, especially when we do not know where the gaps are. As far as religious change is concerned, network analysis returns us to old questions about why some groups were vulnerable to new suggestions, despite the continued vitality of polis religion and the power of the elites who organized it. And finally what was it that made some of those innovatory packages of rituals, representations and beliefs so attractive that (unlike so many others) they were selected for as the Roman religious landscape became more pluralistic, more fragmented and more diverse.

## SÓ CONECTADO? ANÁLISE DE REDE E MUDANÇA RELIGIOSA NO MUNDO ROMANO

**Resumo:** A emergência no Império Romano de novas formas e grupos religiosos, juntamente com cultos coletivos da cidade e o culto do governante convida à análise em termos dos vários tipos da teoria de redes. Algumas das principais versões da teoria de redes em uso corrente são examinadas, e sua aplicabilidade ao material antigo é discutida e avaliada. O pensamento em rede pode ser muito útil, mas os problemas que surgem na realização de uma análise de rede mais formal são formidáveis. A teoria de redes nos permite abordar a mudança religiosa em novos termos, e dois modelos de mudança em uso – a conversão como contágio e a mudança religiosa como propagação de ideias – são examinados. Pensar sobre a mudança religiosa nesses termos exige que os historiadores formulem descrições mais precisas da mudança como um processo que envolve socialização e rotinização de novos hábitos e rituais, assim como um processo de aprendizagem de um novo modo de imaginar e descrever o cosmos.

**Palavras-chave:** Mudança religiosa, Análise de rede, Império Romano.

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