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Disciplinary itineraries and digital methods: Examining the Kinomatics collaboration networks

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Abstract
The Kinomatics project (http://kinomatics.com) is an international, interdisciplinary project applying innovative digital practices to study creative industries, particularly the film industry. Kinomatics uses data-driven tools and methods to examine the social, cultural, and economic 'relationality' of film distribution as a complex, overlapping, co-constituting media infrastructure. What is unique to this project is the way we apply the same methods for the study of film circulation to evaluate our own collaboration networks and determine future research opportunities. We produce both research tools and analysis that is focused on intervening in, rather than just describing, the creative industries. Kinomatics derives this recursive approach to method from digital humanities. This article conceptualises our approach with a critical social network analysis of how our own collaborations are structured and open to being reshaped. Being mindful of our multi-disciplinary methods as dispersed 'teams of teams' emphasises the relational dimensions of our work. These connections represent a significant interpersonal investment that is not always evident in the formal measurement of academic success, such as co-authorship for example. In researching how cinema operates as a global cultural industry, Kinomatics team members aim to collaborate on a 'global' scale themselves, across geographic and disciplinary boundaries. This article will show how our migration across specialities in inter-team collaboration and co-authorship has contributed to new approaches and collaboration dynamics.

Keywords: academic collaboration, collaborative networks, digital methods, feminist data analysis, social network analysis

Introduction

What makes a great research team? And exactly how would we recognise one? Collaboration can refer both to the process and the outcome of academic work, but it is not usually well defined as part of research methodologies. The Kinomatics project is an international, interdisciplinary project applying digital methodologies to study creative industries, particularly the film industry.[2] In this article, we make ourselves the object of our study, interrogating the character of our own collaborative network. Specifically, we apply our methods for studying the global circulation of cinema and media onto our collaboration network of globally-circulating media researchers.

Academic teamwork is often described as an expression of collegiality. However, perceptions of the value of collegiality vary for different academics depending on their jurisdiction, institution, rank, discipline, gender or race, resulting in what Massy, Wilger, and Colbeck have called 'hollowed' collegiality.[3] As Macfarlane explains it, 'ventriloquizing the values of collegiality has become a performative riff in academic life which, in practice, is increasingly characterised by isolation and individual competition'.[4] Or, as Kligyte and Barrie argue, many academics persist with an 'unattainable collegial ideal situated in binary opposition to management', which 'ultimately disguises the contingent character of this relationship and prevents both leaders and academics from imagining alternatives'.[5]

This article evaluates our attempts to achieve one such imagined alternative through a detailed social network analysis of the current Kinomatics research team. Our intention is not to defend or rehabilitate any one definition of 'collegiality'. Rather, we seek to examine our own practices of teamwork as a mode of professional praxis that is also a form of structural resistance to neoliberal ideals in the contemporary academy. Building on the important reflexive and political scholarship of feminist colleagues, we seek to pay attention to 'how we work and interact with one another' as fundamental to understanding, and proposing alternatives to, chronic managerial, corporatised modes of surveillance and governance, which foster institutional allegiance through individualised inducements.[6] We seek to reimagine how we might understand the value and venture of academic 'cooperation' in the contemporary academy. Parallel with our research goal of facilitating more

equitable, reciprocal media industries, our aim here is to open academic networks to a methodical evaluation in order to nourish scholarship that is generative and compassionate in terms that go beyond quantified accountings of productivity.

Our findings are instructive. We created two distinct versions of our network: one built using the formal performance indicators that universities routinely value and measure (publications, grants, conference presentations); the second network estimating our intangible connections using a survey into our perceived social media interactions or communal coffee consumption, for example. A key finding is that, within our own network, care and attention to reciprocal, informal connections is a wider, more robust footing that largely precedes and forms the basis for our formal co-authorships. The implication for our research on cinema's global flows is the hypothesis that a more equitable, open media industry must be supported by everyday industry interconnections and informal collaboration. In other words, there is a *social* foundation for media industry practices. This is already confirmed, in part, through Kinomatics prior research into specialised sites of film distribution. Elsewhere, we have shown how policies aiming to mandate equity, diversity, and inclusion in financing are toothless without genuinely inclusive practices on-set in production and hiring.[7] Or again, we have shown how film festivals work as sites of informal social networking that precede global distribution deals, especially important for queer filmmakers reaching an audience.[8] Generally, our reflexive social network analysis demonstrates the premise that intercultural movie-going and transnational film distribution can be a foundation for cultural connections at large.

Background: Academic networks

The rich history of academic collaboration across geographical and institutional boundaries suggests that networks of scholars are a crucial site for the sociology of knowledge. Academic networks are diverse in formation and function. They vary in degrees of formality, institutionalisation, and spatial density. Some are formal and bounded by organisations (see http://crimt.org), some are geographically dispersed but still formalised (for instance members of national academies and disciplinary professional associations), while other networks are more epistemic in nature (for example the Frankfurt school).[9] Sociologists and historians of science have focused in

particular on how informal networks operate in the contexts of scholarly research, including the reproduction of a 'hidden curriculum' of exclusionary norms marginalising, for example, women and racialised minorities.[10] Similarly, 'invisible colleges' refer to 'a network of scholars who are spatially dispersed but who are closely interconnected by exchanging research findings and other scientific information'.[11] Invisible colleges have been instrumental in shaping both the contours of the academy and society at large and it has been observed that the recent rhetorical embrace of 'interdisciplinarity' by university management functions as an attempt to reduce the power of disciplinary communities by 'flattening out distinctions between different types of knowledges'.[12]

Alongside disciplinary conventions of qualitative, quantitative, and primary scholarship, contemporary humanities research now often proceeds within an applied, project-based approach reliant on communication across a diversity of methods, techniques, and substantive specialisations.[13] Trained in different disciplines, in different departments, under different advisors, and measured by wildly different expectations of excellence, interdisciplinary teams cannot always rely on unplanned sociable connections, and may therefore be comparatively fragile networks unless strategies to develop trust are deliberately planned.

Just as they have made an impact on the screen-based creative industries that we study, digital technologies have also been vital to facilitating recent growth in academic networks that exist in both virtual and physical space. Here 'boundaries are permeable, interactions are with diverse others, connections switch between multiple networks, and hierarchies can be flatter and recursive'.[14] Yet although digital communication may overcome global distances, online capacity does not as easily span linguistic, national, and institutional contexts – not to mention time zones.[15]

Despite these specificities of linguistic, national, and institutional conditions, international collaborations have become an increasingly shared feature of academic life. Wide and complex collaborative networks have been esteemed by a particularly pernicious form of neoliberal peer review and academic governance that has sown deep roots in a highly globalised academy. This includes institutional preoccupations with various forms of global rankings (journals, departments, universities, 'top' academics, student 'satisfaction' scores) and highly regimented academic performance metrics (number and type of publications, number of committees, amount and type of research income), which tend only to further privilege the most economically, socially,

and politically advantaged academics as benchmarks by which all others are measured.[16] These same, dubious definitions of 'excellence' are deeply informed by, and embedded in, corporate ideology and logics which serve as the foundation for increasingly undemocratic forms of university governance and management.[17]

The anti-democratic turn in the neoliberal university, however, has paradoxical dimensions; the most notable of which, for our purposes in this article, is that the production of knowledge is increasingly a collective undertaking – what Connell refers to as 'a profound institutionalisation of the intellectual labour process; a collectivisation that has become the necessary condition for every performance that the metrics purport to measure'.[18] The paradox lies not simply in the tensions between a highly individualised and competitive performance culture that trades in a collectively generated form of knowledge production as its primary good; the paradox is that the increasingly collectivised nature of knowledge production is belied by the ways in which universities (de)value the *relationships* required to generate their core 'product'. The richness of research collaborations – dare we say their innovation – is generated by deep, considered, and deliberative collaborations among academics, within their research communities. Such context is too frequently reduced to a legalistic, risk-averse set of contractual relationships primarily concerned with questions of knowledge ownership, commodification, and commercialisation.

We respond to calls for scholars to reject the 'counting culture' of enumerative self-auditing and instead consider care-full academic work: 'What if we counted differently? Instead of articles published, or grants applied for, what if we accounted for thank you notes received, friendships formed, collaborations forged?'[19] In other words, in the broadest possible sense, how do we make each other count? In the following section, we explain how we have tried to create Kinomatics-as-praxis, a reflexive approach to interrogate what caring, informal academic collaborations might look like if they were measurable, and therefore accountable for, acts of empathy and kindness.[20]

Defining the Kinomatics collaborative networks

Kinomatics is a scholarly feminist interventionist research project that aims to make both the academy and the world in which it operates a better place in which to live, work, and create. This means Kinomatics has a dual focus:

both as a reflexive set of relationships between scholars operating within the network, and as a high-impact interdisciplinary feminist research network. We are evidence-based, data-driven, and 'world-facing' (acknowledging our reciprocal interactions with the industries and communities we study). We start from the premise that all relationships – those between the academics within the network, our relationships with our respective universities, with our research communities, and our relationships with data – are inscribed and informed by power relations. We seek to interrogate, examine, and question those power relations and the consequences they produce for our research, and the communities with whom we produce our research. The project is based on core feminist values that seek to not only name but redress systemic inequality, using data as an interventionist tool.

Parallel to the uptake of new digital analysis tools in cinema studies, Kinomatics emerged in the mid-2000s as scholars began to explore the collaboration opportunities (and challenges) afforded by computational platforms. Just as data lent itself to interoperation, so too did the scholars using digital platforms for creative industry research lean towards new interdisciplinary formations and a commitment to equitable and reciprocal disciplinary and professional collaboration. In this way, Kinomatics itself became a venue for both empirically refining methods and attending to questions of ethics. Creative industries research as understood by Kinomatics also pertains to our own operational work. What we do is holistically integral and fluent to how we do it and vice versa. In other words, in the context of our research on global film *distribution*, we might consider how our own global network operates to *distribute* scholarly benefits.

A substantial focus of the Kinomatics research has rested on an extensive dataset comprising (almost) all cinema showtimes recorded around the globe over a two-and-a-half-year period between 2012 and 2015. This data does not include but can be interoperated with financial data such as box-office information. But this has not necessarily been our focus. Typically, research on global cinema is driven by economic questions such as how to generate revenues, control success at the box office, increase the size of market shares, and, sometimes, protect markets from US dominance. As Janet Wasko states, 'above all, profit is the primary driving force and guiding principle for the industry', and 'studios exist to make money'.[21] Instead, we have used this and other datasets to develop exploratory research including:

- Data visualisations combined with creative arts-based approaches to information analysis
- Geographic network mapping and transnational flows of cinema focussed on trade reciprocity (see Fig. 1)
- Social Network Analysis of film production studies for developing social equity policies

Through the application of a variety of innovative methods, our interdisciplinary work renders visible the socio-spatial, historical, and political-economic relationships that inform the production, distribution, and consumption of cultural goods and services.

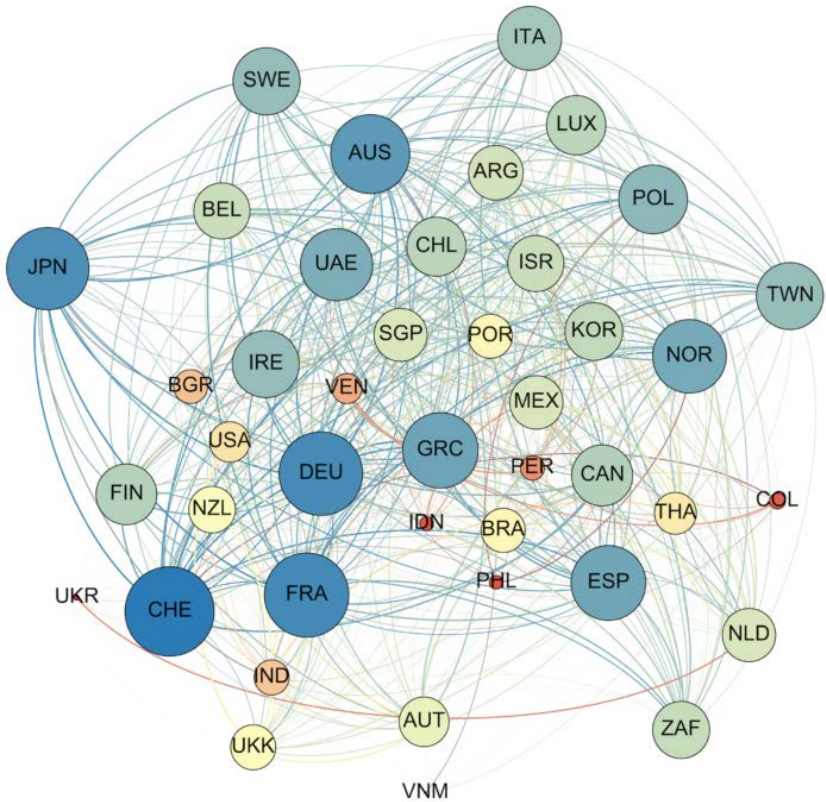
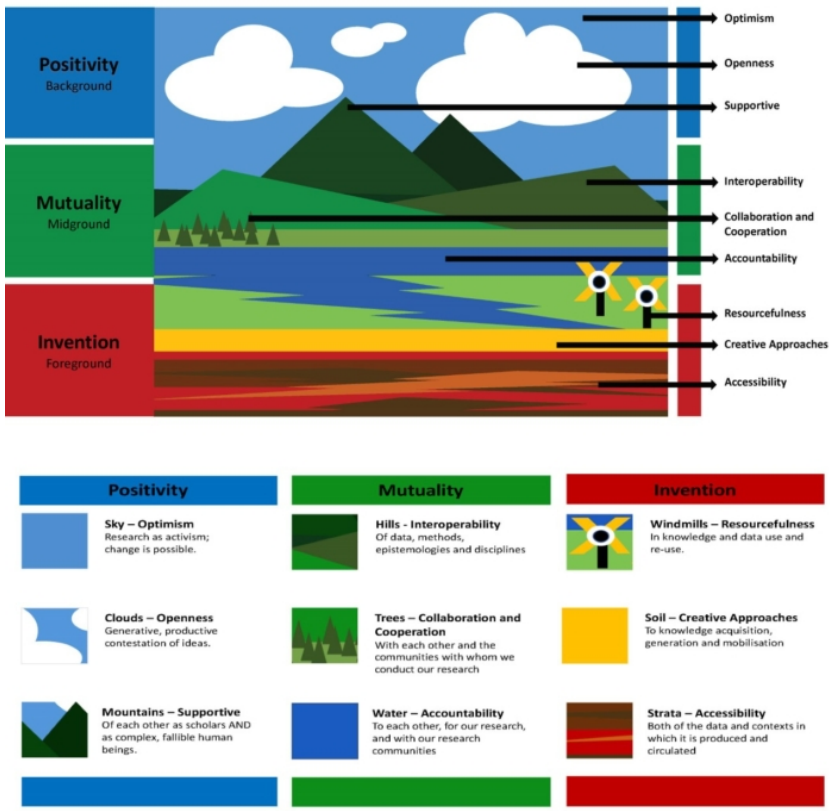


Fig. 1: Visualisation of reciprocal exchanges of films between countries expressed in terms of screenings of new release feature films, by Stuart Palmer.

Values and research

Kinomatics practices a 'values-led' research design. Figures 2 and 3 summarise our values in the form of a landscape. The visualisations of these values are developed around an exploration of perspective, in which the horizon line, background, midground, and foreground provide a loose spatial and durational key to explore the movements available through representation. Perspective is explored laterally, horizontally, vertically, and as multi-level assemblages, in an attempt to open up another rendition of the data we work with and to expand what it might reveal. In a visual nod to 'standpoint feminism', perspective not only shows depth but locates and implicates the viewer.



Figs 2, 3: Visualisation of the values and principles of Kinomatics, by Michelle Mantsio.

In practice, collaborative authorship (typically three authors or more) is encouraged in Kinomatics to ensure a breadth of interdisciplinary contribution, but also to amplify the reuse and sharing of knowledge, analyses, and results. Collaboration is a mechanism for inclusion as well as an opportunity for exploratory interrogation. It recognises people's unique contributions and provides a trustworthy environment for critical interchange. We include students and non-academics as co-authors on the team without treating their technical and artistic assistance as merely a supporting role. We aim to manifest our interventionist project in the very structure of our collaborative network, reshaping our own work to be more inclusive alongside the project of encouraging equitable conditions within the global film industry. To achieve a more 'poetic world-making', to borrow from Michael Warner's definition of a public, we need to counter the persistent presumption that knowledge is constituted 'as dialogue or discussion among already present interlocutors […] real persons in dyadic author-reader interactions, rather than multigeneric circulation'.[22] Specifically, we need to attend to alternative forms of productivity that go beyond the conventional milestones of peer-reviewed publications and presentations in academic conferences. While acknowledging how such examples of 'rational-critical discussion acquire prestige and power', we want our team members to be 'overtly oriented in their self-understandings to the poetic-expressive dimensions of language … [that] lack the power to transpose themselves to the level of the generality' of the academy.[23] Consequently our work has appeared in venues ranging from ranked academic journals, trade publications, media outlets, blog sites, podcasts, and art exhibitions.

In this sense, our adoption of the term 'network' in our practice is not intended to reiterate the way academic networks consolidate gatekeeping or the way they ensure narrow hiring patterns in putative 'merit-based' institutional settings.[24] Our intention is to subvert both aspects of this opposition – the closed, defensive employment networks of the university sector and also the rhetorical weight given to narrow measurements of 'merit' in academic selection processes. We imagine ourselves as an alternative, open collaboration network that creates the conditions for inventive, ethical, equitable outcomes for team members that are heterogeneously motivated to attend to our research enterprise. By operating in a collaboration network there are advantages for team members that are otherwise difficult to achieve in competitive performance-based employment – ranging from uncompli-

cated social opportunities, mentoring, and personal support that is not compromised by institutional proximity (by being members of the same department, for instance), scholarly inspiration including serendipitous gleanings derived from interdisciplinary discussions, and a sense of power in numbers when developing and delivering contentious research findings.

Without quite (yet) acting as a mandate or pledge, we have all ascribed to a set of more or less articulate principles that can be encapsulated in the challenge to act within the values of mutuality, positivity, and invention. Inclusivity comes with reciprocity that extends from an everyday acknowledgement of others' contributions to the acceptance of mutual accountability and commitment to interconnected outcomes, as well as displaying the provenance of our data and analyses. At the same time, openness about power dynamics and privilege requires an ethos of positivity and goodwill. We face our futures with optimism as we consider the needs and priorities of others, not just within the team but the communities where our research can be applied and put into practice. Finally, an appreciation for invention is a key part of mutual, positive recognition of insightfulness, integrity, and resourcefulness, again not just within the network but in the world we study. To achieve sustainability, both in our work lives and on a global scale, our interactions need to be attentive and careful, in the twin senses of respectful and caring. Altogether, these values imbue our analyses and methodologies, but should also shape the pragmatic choices of what we each do, and how we work with each other.

In addition to our commitment to deep interdisciplinarity, we adopt interoperability as a guiding principle and practice. We understand interoperability as both a methodological foundation for inventive research as well as a framework to guide our interactions with each other, with the industries we study, and for the circulation of our research. We share data for reuse and pursue a variety of forums for communicating results (academic and non-academic), to ensure the research is as widely accessible as possible.[25] This poses challenges at times. While the 'impact agenda' discourse that universities espouse in relation to knowledge translations, dissemination, and mobilisation would indicate support for the approaches we adopt, institutional gatekeeping endures as a core university value and systemic barrier. Performance review metrics and academic publishing practices operate as very real, wearying disincentives to the way we work.

Method

What, then, are the intellectual geometries of our collaborative practice? How can we analyse the informal, underlying tension edited out of the formal preference given to presentations and papers, like this very article, for example? We are interested in the qualities of outliers and how to identify and work with consideration of duration, immaterial inputs, a variety of material outputs, and any other overlooked qualities. For the purpose of this analysis of our research network, we limited our study to the current Kinomatics team members (the authors of this article). These twelve members include one team member on parental leave and comprise a range of academic ranks from post-doctoral researchers to senior professors. We live in seven cities in four different countries on three continents. Typically, the team has a fluid membership; members come and go according to their availability, employment status, or personal capacity at any given time. Some members have joined the team more recently (Moore, Loist, Prommer) while others have been longstanding participants (Verhoeven, Coate, Davidson). Given that this is a snapshot analysis (rather than tracking change over time), several previous members of the team are not included in our analysis (Arrowsmith, Palmer, Gionfriddo).

Although collegiality and collaboration are not expressed directly as values, we have articulated relatively abstract principles of openness, equity, and reciprocity in our research network. In other words, we have ascribed to core values for membership in Kinomatics without prescribing specific practices for our collaboration as a network. Rather than defining collaboration in theoretical terms, this article describes a more methodical way of analysing whether our aspirations and perceptions for open, equitable, and reciprocal collaboration match our practices. We began by using an exploratory visualisation to capture the ways our collaboration happens within parallel timelines of activities, each ascribed a level of relatively implicit or explicit recognition or esteem in conventional academic institutions (see Fig. 4). Thinking visually of planes of activity, we imagined a top level visible to people outside the network, where outcomes crest like waves on the surface, grabbing attention. Highly-valued occasions such as winning a project grant, co-authoring an article, or co-presenting a high-profile conference paper are easily recognised and continually documented. One can also picture interim parts of the

surface, still visible to more specialised outsiders, although ascribed less prestige: such as when co-authored policy reports and public opinion essays circulate; or when co-supervised doctoral students graduate.

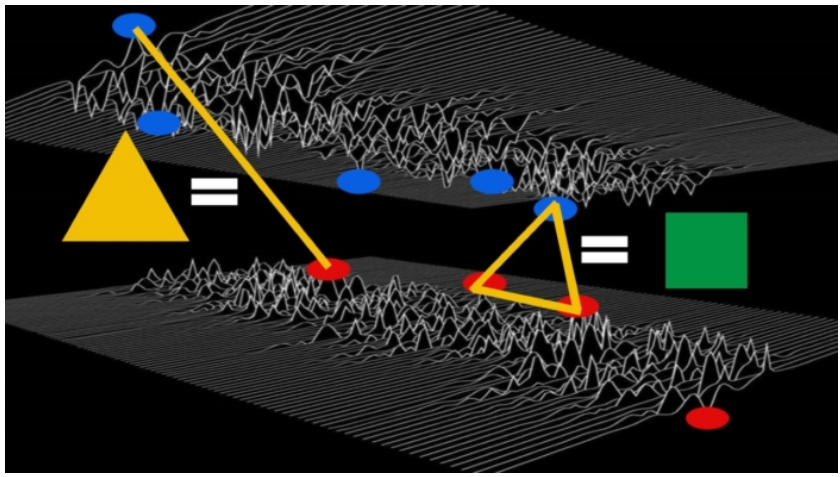


Fig. 4: Visualisation of collaboration as parallel timelines, by Michelle Mantsio.

Under the surface, all the while, a continual stream of lateral and horizontal assemblages of informal interaction provides the momentum and energy to the waves above. These everyday aspects of collaboration are rarely tracked and barely recognised as a crucial foundation for joint productivity: collecting and iteratively analysing data, building databases and digital tools, co-writing and editing multiple versions of drafts, shared conversations and correspondence of all sorts, listening to and thinking with each other. Many forms of collaboration go entirely unrecognised or may even be dismissed as trivial within formal, academic criteria. Sociable chat during coffee breaks at conferences; lunch with a colleague or student; taking selfies together for social media: these are often our most memorable, valued moments. Of course, many of these forms of collaborations do not lead directly to the surface of visible or measurable publications; casual comments that help to crystallise concepts; team members and students that participate in one aspect or moment, but do not continue or repeat with others; but these loose ends and sometimes dead ends are not failed or fizzled collaborations, but rather part of the process. A rejected paper or an unsuccessful grant application often lays the premise to future success, broadly defined. Serendipitous, informal encounters lead to new ideas and future collaboration and work.

At the formal level, generous attribution is expected under the auspices of the Vancouver authorship protocols.[26] In the informal layer of collaboration, however, we did not have an existing framework for putting our values into practice. And yet, this is often where preliminary plans for formal outcomes emerge, such as in the conversation at a conference. Critical analyses of academic networking and collaboration are most often tied to relatively formal academic outcomes, such as career advancement and citation indexes. Less attention falls upon what individual team members forgo in order to maintain strong collaboration networks. Supporting each other also takes time and attention, whether formal supervision or informal collegiality. As we have noted elsewhere, we need to broaden the conventional meaning of research 'impact' beyond academic citations. Not only because the 'ecological and financial costs involved are in conflict with our research interest in global cultural sustainability,' but because our collaboration also has environmental, emotional and interpersonal impacts.[27] Without careful attention to gendered, generational, and disciplinary discrepancies, these decisions can lead to exclusionary trajectories on the timeline of collaboration. This is also the level where the unwritten, unrecognised labour of administrative tasks, mentoring, casual explanations, and informal training happen, not to mention catering and cleaning-up the 'workspace'. The work of maintenance and infrastructure of collaboration enables the reproduction of future research, skills, tools, and databases, despite uneven acknowledgement of its importance.[28]

A preliminary version of the formal analysis had already visualised our network by graphing a compiled bibliography of co-authored publications and co-presented conference papers.[29] To take the measure of informal channels of communication, we supplemented our bibliography of co-authorships with a survey of ordinary practices, collecting such details as knowing each others' mobile phone numbers and documenting the perceived frequency of email correspondence, in-person meetings, and whether or not we had casual chats and tagged each other on social media. These two measures jokingly designated the 'coffee index' and the 'selfie factor'. We then separately graphed the explicit and implicit team dynamics in respective social network visualisations. Both informal and formal collaborations are graphed as unipartite, undirected networks (see Figures 5 and 6, respectively), with a single node for each current team member and a single edge weighted by the frequency of the pairwise connection.[30]

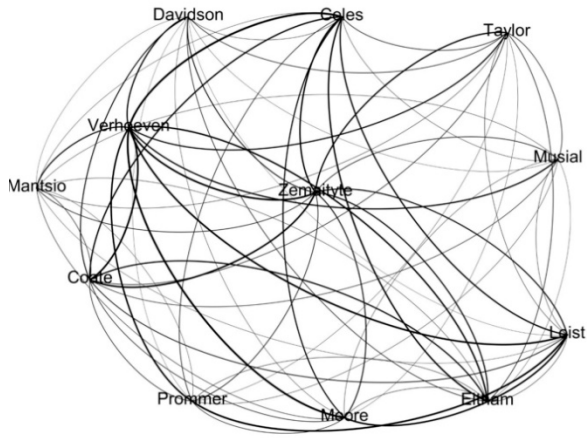


Fig. 5: Informal, undirected Kinomatics network visualisation produced using Gephi Software.

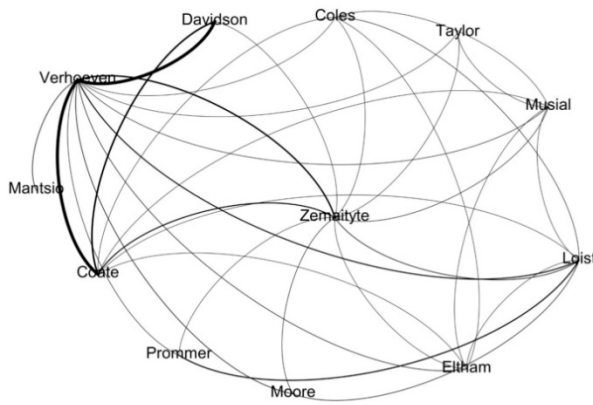


Fig. 6: Formal, undirected Kinomatics network visualisation produced using Gephi Software.

Kinomatics collaboration network analysis

Social Network Analysis is used in many settings to analyse the social dynamics of teams of people. As a technique, it is less focused on evaluating the performance of individuals and more useful for understanding how groups work together. In Figures 5 and 6 we have visualised the informal and formal interactions of the Kinomatics team, respectively. The 'nodes' in the diagrams represent researchers and the 'edges' between them indicate types of interconnection. On first glance, the most evident outcome of the Social Network Analysis is how well-connected we are as a working team. In informal and formal collaboration networks alike there are no sub-groups or individuals entirely disconnected from the others. In terms of the unweighted lines or edges of the networks, at least one path exists between any two people. This is less surprising for the informal network, where every team member actually has a direct connection to everyone else, at least through everyday work messages and in online meetings; all nodes in Figure 5 have an unweighted degree of 11, counting the number of edges. This attribute of the network reveals the situatedness of each person, in terms of their proximity or structured place among others. We were not surprised to learn we were informally linked, but surprising connectivity extends to the formal network of co-authorship too. Figure 6 has a diameter of 2, meaning the shortest path between any two people requires at most two edges; every person is at most once-removed from everyone else, and even team members who have not collaborated directly have a co-author in common with each other. In fact, even in the formal network, the average shortest path is 1.35, which, combined with the diameter of 2, indicates two-thirds (or eight) of the members are directly connected to everyone else, and only one-third (or four) of the members require that common co-author to link to someone. These measures tell us about systemic attributes and verify our success at avoiding clustering into specialisations. As intended, everyone is connected to the network overall. Yet those connections are not equally weighted.

The spatial arrangement of the nodes in the two networks was forced to be the same, to permit focusing on the relative weights of edges instead of the geometric arrangement. The thickness of lines in the graph shows weighted edges, with darker, thicker lines for connections that occur more frequently. Considering the weighted degrees can help distinguish the quality and prevalence of connections, which is particularly important for the informal network, where every team member's node has the same unweighted

degree. In the formal network, too, weighted edges are important to consider, signifying repeated co-authorships, such as connections among Verhoeven, Davidson, and Coate, who have been publishing together for several years, before many other members had even joined the network.

The scatterplot of the weighted degrees of interconnection demonstrates this more clearly in Figure 7. We presume in Kinomatics that a 'sound' network is one where the quality of social interactions is matched by the credit and recognition of formal outcomes. A balanced network like this is represented by the 45-degree line that runs diagonally between the informal and formal axes. To some extent, this line is an arbitrary indicator – we are hypothesising the theory of an optimum collaboration network based on our own measurement of informal interconnection. For this reason, we have also included a second line that represents the 'best fit' within the existing data. The difference between these two lines indicates that, as a whole, the team places emphasis on relationships and, by inference, that a substantial amount of informal effort goes into producing the formal and institutionally validated credits of publications and so on. This recognition that relationships matter resonates with the way humanities research itself emphases the methodological and epistemological value of 'making connections' by 'figuring out, following and filling in trails of relationships'.[31] Publishing rates in the humanities tend to be slower than in other disciplines. By revealing the 'invisible labour' of relationship building that goes into our more evident outputs and projects this visualisation is instructive.

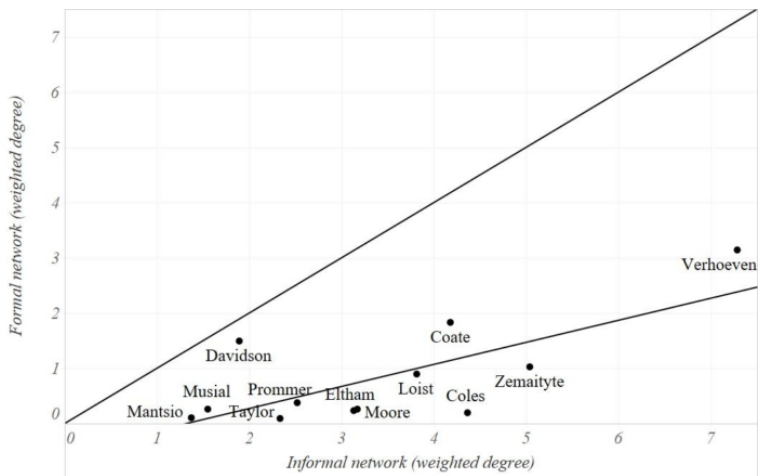


Fig. 7: Visual comparison of the Kinomatics formal and informal collaboration networks, by weighted degree with a 'line of best fit' and a 45-degree line.

What other unrecognised tendencies in our interactions and collaboration does this analysis demonstrate? The position of team members against the 'line of best fit' in the scatterplot tells us more. This line shows our performance against the informal and formal measures relative to each other. We were aware Verhoeven was a 'bridging' figure in both the informal and formal network, but some members (Coles, for example) are ranked relatively high in informal weighted degree (uncredited labour) but lower for formal collaboration; others, vice versa, ranked relatively high in terms of formal weighted degree (Davidson, for example) (see Table 1). Why would this be? Is this evidence that we failed to meet some aspect of our principles? Is there a persistent bias we need to redress?

Informal network (see Fig. 5)			*Formal network (see Fig. 6)*		
Member (country)	*Un-weighted degree*	*Weighted degree*	*Member (country)*	*Un-weighted degree*	*Weighted degree*
Verhoeven (CAN/AUS)	11	7.28	Verhoeven (CAN/AUS)	11	3.14
Zemaityte (AUS/EE)	11	5.04	Coate (AUS)	7	1.83
Coles (AUS)	11	4.36	Davidson (AUS)	3	1.49
Coate (AUS)	11	4.18	Zemaityte (AUS/EE)	10	1.03
Loist (GER)	11	3.81	Loist (GER)	8	0.89
Moore (CAN)	11	3.17	Prommer (GER)	3	0.37
Eltham (AUS)	11	3.13	Moore (CAN)	7	0.26
Prommer (GER)	11	2.52	Musial (AUS)	3	0.26
Taylor (AUS)	11	2.33	Eltham (AUS)	6	0.23
Davidson (AUS)	11	1.89	Coles (AUS)	6	0.20
Musial (AUS)	11	1.55	Mantsio (AUS)	1	0.11
Mantsio (AUS)	11	1.37	Taylor (AUS)	3	0.09

Table 1: Tabular comparison of the Kinomatics formal and informal collaboration networks

First, there is a temporal lag between the networks. More recent informal connections were measured robustly in our survey, allowing even members who joined recently to be quickly and strongly connected in those everyday terms. Yet informal connections are tapering off quickly once a members' availability shifts with new personal or professional responsibilities. On the other hand, formal co-authorships have a duration and retain the weight of connection years after some members no longer have the availability to collaborate regularly, due to moving to a new position. Crucially, a person's ca-

reer stage plays a significant role in structuring members' capacity for collaboration. A recent doctoral student (Zemaityte) and past postdoctoral fellow (Davidson) joined the network precisely for their methodological approaches, which led to many opportunities for formal co-authorship. But the former remaining as a postdoctoral fellow permits continued informal connections, whereas the latter's shifting to a new stage and place of employment, unfortunately, meant a quick waning of those everyday routines.

Specialised knowledge can explain two researchers having relatively low connections in both informal and formal networks. Musial is a network scientist; Mantsio is an artist. Although both are active team members, their connections more often rely on their specific expertise being called upon. They are an instantiation of the idea that 'weak ties are strong ties' in the sense that, although they are not deeply embedded in the network, they bring their own extended networks and specialised knowledge to Kinomatics.[32] Another three persons have relatively low formal weighted degrees compared to their informal weighted connections: Moore, Eltham, and Coles (see Table 1). This may arise partly because these researchers bring secondary analysis to our collective work, adding historical and policy interpretations to the core methodologies others conduct in data-driven Digital Humanities. That two of these are the only two men currently active in the network raises the spectre of unwittingly relying on female senior researchers to the 'emotional labour' of facilitating connections among others. Past male researchers are counter-examples, but are now retired from academia and not included here in the analysis of the present team. Finally, we would be remiss not to acknowledge missing connections to racialised and Indigenous researchers. We would clearly benefit from a greater diversity of perspectives in our network, as in our research.

Conclusion

When we proposed this co-authored interrogation of collaborative research methods, the lockdowns and physical distancing that have come to define the global response to the COVID-19 infection were still a remote threat. Subsequent reflection and writing for this article have happened under very different circumstances. COVID-19 has laid bare the underlying value and frameworks of research collaboration at scale but also the importance of ethical and emotional support networks in academic environments. We began

problematising the bias for favouring collaboration done co-spatially and synchronously – by thinking of online tools for distanced communication as an optional supplement, with the silver lining of lower environmental and financial impact, taking less time away from personal and professional duties, but we never imagined the circumstance of physically-distanced collaboration would become a professional requirement.

In this article, we aimed to test how our migration across specialities in inter-team collaboration and co-authorship has contributed to new approaches and collaboration dynamics.[33] To do this, we conducted a critical Social Network Analysis of our own collaboration network, to understand how our own team is structured and open to being reshaped. Our varied inter-connections represent a significant interpersonal investment in a collective identity that is not always evident in the formal measurement of academic success such as in co-authored publications, for example. Unlike many scientific articles in which long lists of co-authors form a dominance hierarchy, all twelve of us contributed essentially equally to the formation of this article. Other articles might list as many or more co-authors to signal a diversity of contributions and roles, say produced by collaboration across laboratories under the umbrella of a targeted, funded project, where experimentation, conceptualisation, supervision, and writing are all recognised as essential tasks but differentiated proportionally as distinct contributions to the production of intellectual property. What we have attempted to do here is somewhat distinct, by building a collaborative process of recursive contributions and team conferrals towards strengthening the collegial structure of the network itself. On top of this, our object of analysis was our own past collaborations. This iterative process of formal co-authorship and informal interactions required we give significant attention to prioritising respectful informal collaborations of many types. Our critical Social Network Analysis aimed to reveal the structure of this process.

In researching how cinema operates as a global cultural industry, the Kinomatics team members aim to collaborate on a transformative scale themselves, across geographic and disciplinary boundaries. In this article, we apply the same methods for the study of film circulation to evaluate our own collaboration networks and to help determine the shape of future research opportunities. Kinomatics derives this recursive approach to method from the Digital Humanities. We produce both research tools as well as analysis that is focussed on intervening in, rather than just describing the creative industries. The methods and techniques of Kinomatics research are used to propose

conditions for redistribution in the global film industry, but we also hope to possess mechanisms for redistributive scholarship within our own practices as a network of global academics.

Being mindful of our multi-disciplinary methods as dispersed 'teams of teams' emphasises the relational dimensions of our work.[34] What at first might seem like segmented or largely disconnected 'sub-networks' of participating researchers helps point out the critical importance of a variety of relationships in the Kinomatics collaboration network. These connections represent a significant interpersonal investment that is not always evident in the formal measurement of academic success such as co-authorship. While coordination can be aided through designating a project manager or principle investigator under a clearly defined project structure, these features themselves can potentially become a source of tension if roles are overly rigid and participation is not accompanied by commitment or accountability. Different types of networks reflect a range of network governance models.[35] In particular, the tension between unity and diversity in network governance requires care-full planning for the heterogeneity of team members' motivations and goals within any given project.[36] Academic networks, like any networks, can be exclusionary, dangerous, and a space where power and influence are both accrued by the privileged few and reproduced in unequal ways that mirror the unequal distribution of resources in society at large.[37] With this in mind, the Kinomatics praxis is explicitly intended to intervene on what and who is valued in processes of knowledge enquiry, creation, and mobilisation. And to ensure we are accountable to these intentions, we undertake team-evaluations such as the one outlined in this article.

By way of a conclusion, we should also acknowledge the attendant liabilities of our approach. As Caddell and Wilder observed, in reframing team success around alternative forms of scholarly solidarity there is 'considerable risk in terms of drain on already depleted personal resources and capacity'.[38] We cannot assume compassion is an evenly dispersed capacity or resource – some academics can afford to be more caring than others due to their institutional position, for example. Even still there are repercussions for those academics that focus on relationality and that do not seek to 'measure up' within managerial academic settings. Further, how we might imagine these alternative Kinomatics approaches as something more than just a group of individuals redefining and applying an innovative approach to collaboration – but rather as resetting (multiple) institutional frameworks – is not clear. We need to be realistic about supporting the careers of our colleagues in a

system that only rewards very particular behaviours at the same time as being optimistic about change. We must find the ways to move beyond appeasing the university bean counters and devote our energy to planting the seeds for alternative scholarly futures.

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References

Blackmore, J. 'The Carelessness of Entrepreneurial Universities in a World Risk Society: A Feminist Reflection on the Impact of COVID-19 in Australia', *Higher Education Research & Development*, 2020: 1-5.

Brink, C. *The soul of a university: Why excellence is not enough*. Bristol: Bristol University Press, 2018.

Caddell, M. and Wilder, K. 'Seeking Compassion in the Measured University: Generosity, Collegiality and Competition in Academic Practice', *Journal of Perspectives in Applied Academic Practice*, Vol. 6, No. 1, 2018: 14-23.

Coate, B., Verhoeven, D., Palmer, S., and Arrowsmith, C. 'Using big cultural data to understand diversity and reciprocity in the global flow of contemporary cinema' in the *Proceedings of the International Symposium on the Measurement of Digital Cultural Products*. Montreal: UNESCO Institute for Statistics, 2016: 141-151.

Coate, B., Verhoeven, D., and Davidson, A. 'The Cinema Cities Index: Comparing Urban Cinema Cultures Around the World', *Media International Australia*, Vol. 163, No. 1, 2017: 163-175.

Crane, D. *Invisible colleges: Diffusion of knowledge in scientific communities*. Chicago, University of Chicago Press, 1972.

Connell, R. 'What Are Good Universities?', *Australian Universities' Review*, Vol. 58, No. 2, 2016: 67-73.

Grande, S., 'Refusing the university', in *Towards what justice?: Describing diverse dreams of justice in education*, edited by E. Tuck and K. Yang. New York: Routledge, 2018: 47-65.

Granovetter, M. 'The Strength of Weak Ties', *American Journal of Sociology*, Vol. 78, No. 6, 1973: 1360-1380.

Heffernan, T. 'Academic Networks and Career Trajectory: "There's No Career in Academia Without Networks"', *Higher Education Research & Development*, 2020: 1-14.

ICMJE – International Committee of Medical Journal Editors. 'Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals', 2020: www.ICMJE.org/recommendations (aka the 'Vancouver Protocol', originally 1978).

Johansson, L., Grønvad, J., and Pedersen, D. 'A Matter of Style: Research Production and Communication Across Humanities Disciplines in Denmark in the Early-Twenty-First Century', *Poetics*, 2020: 1-27.

Kligyte, G. and Barrie, S. 'Collegiality: Leading Us into Fantasy – The Paradoxical Resilience of Collegiality in Academic Leadership', *Higher Education Research & Development*, Vol. 33, No. 1, 2014: 157-169.

Knorr-Cetina, K. *Epistemic cultures: How the sciences make knowledge*. Cambridge: Harvard University Press, 1999.

Loist, S. 'Crossover Dreams: Global Circulation of Queer Film on the Film Festival Circuits', *Diogenes*, Vol. 62, No. 1, 2018: 57-72.

Loist, S. 'Zirkulation im Netzwerk: Eine Betrachtung zur Zirkulationskraft von Filmfestivals', *Zeitschrift für Medienwissenschaft*, No. 23, 2020: 55-63.

Macfarlane, B. 'Collegiality and Performativity in a Competitive Academic Culture', *Higher Education Review*, Vol. 48, No. 2, 2016: 31-50.

Marginson, S. and Considine, M. *The enterprise university: Power, governance and reinvention in Australia*. Cambridge: University Press, 2000.

Massy, W., Wilger, A., and Colbeck, C. 'Departmental Cultures and Teaching Quality: Overcoming "Hollowed" Collegiality', *Change: The Magazine of Higher Learning*, Vol. 26, No. 4, 1994: 11-20.

McChrystal, G., Collins, T., Silverman, D., and Fussell, C. *Team of teams: New rules of engagement for a complex world*. New York: Portfolio, 2015.

Mountz, A., Bonds, A., Mansfield, B., Loyd, J., Hyndman, J., Walton-Roberts, M., Basu, R., Whitson, R., Hawkins, R., Hamilton, T., and Curran, W. 'For Slow Scholarship: A Feminist Politics of Resistance Through Collective Action in the Neoliberal University', *ACME: An International Journal for Critical Geographies*, Vol. 14, No. 4, 2015: 1235-1259.

Peetz, D. 'Elect the Vice Chancellor!: Is University Governance Getting in the Way of a Healthy Higher Education System?', *Inside Story*, 15 October 2020.

Price, D. *Little science, big science*. New York: Columbia University Press, 1963.

Provan, K. and Kenis, P. 'Modes of Network Governance: Structure, Management, and Effectiveness', *Journal of Public Administration Research and Theory*, Vol. 18, No. 2, 2008: 229-252.

Rogers, E. *Diffusion of innovations*, third edition. New York: Free Press, 1983.

Romero, M. 'Reflections on "The Department is Very White, Very Old, and Very Conservative": The Functioning of the Hidden Curriculum in Sociology Departments', *Social Problems*, Vol. 64, No. 2, 2017: 212-218.

Saz-Carranza, A. and Ospina, S. 'The Behavioral Dimension of Governing Interorganizational Goal-Directed Networks—Managing the Unity-Diversity Tension', *Journal of Public Administration Research and Theory*, Vol. 21, No. 2, 2011: 327-365.

Taylor & Francis, 'Co-Authorship in the Humanities and Social Sciences: A Global View', 2017.

Verhoeven, D. 'As Luck Would Have It', *Feminist Media Histories*, Vol. 2, No. 1, 2016: 7-28.

Verhoeven, D. and Arrowsmith, C. 'Mapping the ill disciplined? Spatial analyses and historical change in the post-war film industry' in *Locating the moving image: New approaches to film and place*, edited by J. Hallam and L. Roberts. Bloomington: Indiana University Press, 2013: 106-129.

Verhoeven, D. and Burrows, T. 'Even Sweeter: What Happens When the Humanities Gets Graphic', *Medium*, 31 July 2017.

Verhoeven, D., Loist, S., and Moore, P. '(Inter)Disziplinäre Routen und digitale Praxis: Kinomatics und die industrielle Geometrie der globalen Kinoforschung', *Montage AV*, Vol. 29, No. 1, 2020: 173-184.

Verhoeven, D., Moore, P., Zemaityte, V., Loist, S., and Samoilova, Z. 'Intellectual networks and cultural networks: Kinomatics and the complex cultural geometry of cinema' in *Global Digital Humanities 2019: "Complexities"*. 2019.

Warner, M. 'Publics and Counterpublics', *Public Culture*, Vol. 14, No. 1, 2002: 49-90.

Wasko, J. *How Hollywood works*. London: Sage, 2003.

Wellman, B. 'Physical Place and Cyberplace: The Rise of Personalized Networking', *International Journal of Urban and Regional Research*, Vol. 25, No. 2, 2001: 227-252.

Notes

[1] Note on authorship. Acknowledging authorship is a particular challenge for networked research practices. In general, Kinomatics follows the Vancouver Protocols for authorship order, but these are not always a useful guide for humanities publishing let alone for collective enterprises involving many communities in the work, and not just the authors of the resultant article. We aim for a world in which collective and dynamic lists of acknowledgment are possible (and from a technical perspective, in online journals, there is no reason why this should not be the case), in which authorship is widely defined and in which acknowledgment can be evenly distributed and mutual contribution can be appreciated. Instead, the existing value system of academic work focuses on self-promotion and ranked ordinality (who is listed first counts more in the case of most humanities publishing) and not on recognising attributes such as generosity, revisability, and creativity. As Sandy Grande concludes in her searing critique of the underlying logics of contemporary academic practice, it is only when we write together that we are 'in refusal of liberal, essentialist forms of identity politics, of individualist inducements, of capitalist imperatives, and other productivist logics of accumulation' (Grande 2018, p. 62). This note stresses that our article was written collectively by the Kinomatics team.

[2] http://kinomatics.com

[3] Massy & Wilger & Colbeck 1994, p. 19.

[4] Macfarlane 2016, p. 31.

[5] Kligyte & Barrie 2014, p. 166.

[6] Mountz et al. 2015; Grande 2018, p. 61.

[7] Coate et al. 2016; Verhoeven & Loist & Moore 2020.

[8] Loist 2018, 2020.

[9] Knorr-Cetina 1999.

[10] Price 1963; Crane 1972; Romero 2017.

[11] Rogers 1983, p. 39.

[12] Marginson & Considine 2000, p. 10.

[13] Verhoeven & Arrowsmith 2013; Johansson & Grønvad & Pedersen 2020.

[14] Wellman 2001, p. 237.

[15] Synchronous meetings of the Kinomatics team must take advantage of a slim window of time when all members are awake and reasonably alert: 7AM in Eastern Canada; 1PM in Germany; 2PM in Estonia; 9PM in Eastern Australia.

[16] Connell 2016.

[17] Peetz 2020; Blackmore 2020.

[18] Connell 2016, p. 71.

[19] Mountz et al. 2015, p. 1243.

[20] Brink 2018.

[21] Wasko 2003, p. 3.

[22] Warner 2002, p. 82.

[23] Warner 2002, pp. 83-84.

[24] Heffernan 2020.

[25] See for example Coate & Verhoeven & Davidson 2017.

[26] Taylor & Francis 2017; ICMJE 2020 [1978].

[27] Verhoeven & Loist & Moore 2020, p. 175.

[28] Verhoeven 2016.

[29] Verhoeven & Loist & Moore 2020.

[30] The pairwise, undirected edge weights in the formal network were taken from the number of collaborating outcomes as a proportion of the maximum number of outcomes of any single person. The weights in the informal network were a proportion of a maximum scale based on ordinal replies to eight different questions: 1. ranked perception of relative closeness to other team members; 2. whether or not the members had edited each others' writing; 3. perceived frequency of coffee breaks with each other, on a five-point scale from never to more than once weekly; 4. perceived frequency of informal, non-business communication with each other, on the same five-point scale; 5. perceived frequency of formal business meetings with each other on the same five-point scale; 6. whether or not the members knew each others' mobile number; 7. whether or not the members followed each other on social media; 8. estimated volume of email with each other, on a five-point scale from never to daily.

[31] Verhoeven & Burrows 2017.

[32] Granovetter 1973.

[33] Verhoeven et al. 2019.

[34] McChrystal et al. 2015.

[35] Provan & Kenis 2008.

[36] Saz-Carrana & Ospina 2011.

[37] Macfarlane 2016.

[38] Caddell & Wilder 2018, p. 21.