

How Professional Actions Connect and Protect

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Introduction

Below we provide responses to the ongoing debate sparked by Mirko Noordegraaf's intervention in suggesting that we are moving towards forms of 'connective professionalism'. Critics in this debate (see Adams et al. 2020a, 2020b, as well as Alvehus et al. in this issue) have objected to Noordegraaf in a variety of ways. Some object to a conflation of ideal types and empirical description. Other assert that Noordegraaf suggests a staged process of moving from protective to connective types of professionalism does not ring true; that we can find forms of connection and protection in contemporary professionalism and in professional action. Our companions in this issue (Alvehus, Avnoon, and Oliver) suggest that greater connectiveness also permits new forms of protection as part of professionalism. Our short essays, below, contribute to the Noordegraaf debate by focusing less on *professionalism* and more on how forms of *professional action* lead to mechanisms of connection and protection.

For Faulconbridge this is an outcome of interactions between artificial intelligence (AI) and professions, producing a form of 'protective connectedness', as he calls it. Faulconbridge outlines how AI leads professionals to act in forging new forms of protection, including the affirmation of status hierarchies within professions which includes the delegation of tasks to professionals of differing status. Drawing on empirical material from trends in accounting and law, he also points out how professionals and clients are reformulating diagnoses of professional treatments. In addition, technologists have joined the expert ranks in professional service firms, leapfrogging typical stages of professionalization, in part because of the remarkable pace of innovation (as noted in the rise of 'coding elites', see Burrell and Fourcade 2021). Faulconbridge also describes how professional service firms are not passive recipients of these trends but actively involved in developing forms of protective connectiveness, this reemphasizing the role of organizations in contemporary professional action (Faulconbridge and Muzio, 2012).

Henriksen and Seabrooke suggest here that protective and connective relations are important to the structure of professions, and we can understand them as general network mechanisms as well as tools to identify case variation. They outline how the 'ABCs' of *arbitrage*, *brokerage*, and *closure* are important network mechanisms, permitting us to identify patterns of connection and protection among professions, their likely in- and out-group dynamics, and to establish the relationship between changing professions and aspects such as class, gender, class, race, and status that are often at the intersections of inequalities. All of these elements are important to the aim of investigating professional authority, autonomy, and expertise – as suggested by Noordegraaf – and locating variation in professional action across both sectors and scales, permitting a link

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between micro-level cases and more meso- and macro-level outcomes in the structure of professions.

In reflecting on the Noordegraaf debate, both essays call for more ecological and network forms of thinking to advance the sociology of professions. This journal already has a rich vein of scholarship advancing an ecological or ecologies approach (Seabrooke 2014; Seabrooke and Tsingou 2015; Adams 2017; Boussebaa and Faulconbridge, 2019; Blok et al. 2018; Liu 2018), which seeks to extend Abbott’s (1988, 2005) conception of relationships among professions, non-professionals, and institutions in an environment. The upshot here is that Noordegraaf alerts us to the use of forms of connection and protection. While we don’t agree with his argument on a general change from one to the other, we do agree that it is important to pick apart and understand relationships of connection and protection. Our contribution here focuses on viewing connection and protection as relations that are stimulated by forms of professional action that can be specified and also generalized.

Protective connectedness?

James Faulconbridge

Noordegraaf (2020) in his discussion of ‘connective professionalism’ provides a rich and insightful analysis of how professions and professionalisms have evolved, and offers a set of provocative ideas about future trajectories. As the responses by Adams et al. (2020a; 2020b) attest, Noordegraaf’s analysis opens-up several areas for productive dialogue, albeit with a number of points of contestation in terms of the framing offered. Particularly relevant for my discussion here are the questions raised by Adams et al. (2020a; 2020b) in relation to what I label here the conceptual challenges of Noordegraaf’s (2020) approach, the danger of presenting old wine in new bottles, and the risk of underestimating the significance of the context of professionalism (see table I).

Table I: Questions raised by Adams et al. (2020a; 2020b) in relation to connective professionalism

Conceptual challenges	Old wine in new bottles	The context of professionalism
Is a dichotomy between protective and connective helpful, and does connective necessarily mean the demise of protective? (2020a: 227-228; 2020b, 238-242)	How does a sociology of expertise account for connective trends? (2020a: 228-231)	Where does the professional organization fit into the story? (2020a: 225-226)
Is connective a new ideal type, as in something desirable? (2020a: 232-3)	How can ecological approaches bridge debates? (2020b: 241-2)	How does the story vary internationally? (2020a: 232-3)

Rather the rehearsing the substantive points behind questions in table I (see Adams et al. 2020a; 2020b for more detail), in this response I want to build on the provocations provided by Noordegraaf (2020) and the questions in table I. I do this by refracting the provocations and questions through the lens of recent developments in relation to artificial intelligence (AI) in the professions.

The second half of the 2010s was as a period in which some expected the potential of AI to change the professions to be finally realised. This is not the place to chart all of the characteristics of AI, its development over time or specific impacts on professional service firms (PSFs). Further

insights into such issues are available in a range of publications (e.g. Armour and Sako, 2020; Deloitte, 2017; Markovic, 2019; Kokina and Davenport, 2017). Suffice to say, long-term proponents of the potential for technology to revolutionise the professions, most notably Susskind and Susskind (2015), have linked the growth in widely available computing power, the enhanced abilities by the mid-2010s of machine learning, and increasing pressure to reduce costs, to suggestions that significant amounts of activity currently discharged by professionals could be automated. From accountants auditing companies, to lawyers completing due diligence work and radiologists assessing patient scans, debate has emerged both about the technical ability of AI and the machine learning embedded with it to substitute for human labour (see for example Coombs et al., 2020; Huang and Rust, 2018).

The recurrent debate about whether AI can ‘steal peoples jobs’ is, then, now apparently applicable to the professions. In such a context, questions about protective or connective professionalism would seem perhaps a little obtuse. If professionals will be soon redundant, why worry about how to define their domain? However, here I want to argue, like many others (for example see Davenport and Kirby, 2016; Pettersen, 2019), that the ‘end of the professions’ narrative is misleading. My distinctive angle is informed by Noordegraf (2020), as I want to argue that the effects of AI on the professions are best understood and explicated through reference to the protective but also connective responses of professions when AI ‘comes to town’. In particular, I want to focus on a set of issues relating to the impacts of AI on the work tasks associated with the production and delivery of advice to clients. Through a focus on tasks, and specifically how tasks evolve as AI is adopted in PSFs, I want to learn from but also provide an (albeit partial) response to the questions set out in table I. The analysis, I contend, suggests that rather than an epochal shift from protective to connective professionalism, we are witnessing *protective connectedness* in the professions, as challenges such as AI lead professions to seek to re-protect their domains, albeit through new forms of connection to other occupations that necessarily co-exist as part of a new closure settlement. I develop this argument through a focus on a sub-set of professions affected by AI in recent years – the accounting and law professions.

AI in accounting and law

In the discussion below, I offer a series of observations about the impacts of AI on accounting and law professions and PSFs using insights from research in England (see www.nextgenpsf.co.uk for details of the research project from which I draw insights). As noted, this provides a necessarily partial view of the impacts of AI (as well as only two professions it accounts for only one country context). Nonetheless, the insights allow the identification of a number of notable responses by professionals that suggest forms of *protective connectedness*. I structure the discussion below around the questions in table I, but to begin I outline why Noordegraf’s (2020) ideas about connective professionalism are so relevant.

Contrary to the idea that AI might steal the jobs of professionals, in the accounting and law firms we studied there were few signs of AI displacing existing professionals. Rather, professionals were learning to work with AI (as Davenport and Kirby (2016) also argue), and as a result transform the services offered to clients (in line with the findings of Armour and Sako, 2020). However, learning to work with AI did involve transformation of work tasks, and as a result changes to thinking about what defined the jurisdiction of an accounting or law professional. Most relevant here is the way the ability of AI to automate certain tasks was responded to by professionals. For brevity, I summarise four key observations in this regard:

1. A proportion of the work of trainees and newly qualified professionals has become amenable to automation through AI. The most clear-cut examples are sample selection and analysis in auditing, and document review in research and due diligence in law. AI driven software, such as Xero in accounting and Luminance in law, is now able to complete tasks that trainees or junior professionals would have done manually, using the likes of

Microsoft Excel and Word, or on paper with a highlighter pen. However, this development has been responded to in more complex ways than the 'stealing of jobs' narrative would suggest.

2. Trainees and junior professionals are now needed for new tasks, generated by the adoption of AI. These tasks include: training AI software to complete automated analysis, as the software needs to be taught how to sample or review documents; setting up the analysis parameters used in an AI automated analysis, depending on the risk profile of a piece of work; collating the outputs from AI software and presenting them to more senior professionals who then work with trainees/juniors to interpret what the AI analysis has revealed; developing datasets and analyses that can be presented to clients, and in some cases handed to clients to allow them to complete their own analysis, as part of new service offerings.
3. In accounting and law PSFs, trainees and junior professionals have also been joined by a new group of technologists, responsible for AI procurement, installation, running and problem solving, as well as data curation. Technologists are emerging as a new group of para-professionals in PSFs, and in some firms are even becoming partners when governance arrangements allows (when governance does not permit partnership they are awarded alternative titles but still join the senior management board of the firm).
4. All of the above changes are leading partners in PSFs to reimagine what an accounting or law firm provides clients, with boundaries of the two professions being re-designed in light of how AI, and the input of technologists, can reconfigure what it is an accountant or lawyer can or should do. For example, accounting firms can provide human resource management type services designed to reduce risk and compliance through staff training, this being done not in generic terms but using insights gained from AI analysis into the risk areas for a client and thus ensuring tailored training. Meanwhile law firms can increasingly act as problem preventers rather than solvers, for example taking on the role of management consultants and advising on the redesign of business processes to reduce the likelihood of litigation, AI analysis again informing such services thanks to the insights it can provide into the causes of previous litigations defended for the client.

Protective connectedness

The four observations above highlight a number of important developments that resonate with Noordegraf's (2020) arguments about connective professionalism. A fundamental point in Noordegraf's thesis is that professionals now relate to 'outsiders' rather than isolating themselves, as part of a response to changing societal conditions. Hence, he argues for a relational definition of expertise and action. In the observations above such connective professionalism can be seen in the way:

- Accountants and lawyers work with their clients in new ways because of the possibilities created by AI and the data it generates – whether that be co-creating solutions with clients by analysing their datasets for them, or providing clients with data so they can make their own decisions about priorities and actions. This suggests the boundaries are blurred between the role of the professional and the client, most acutely in the diagnosis of the problem which involves greater co-operation between the two parties, rather than professionals seeing diagnosis as purely their domain, as Abbott (1988) describes. This is reminiscent of what has been observed in 'new' professions such as management consultancy and executive search (see Fincham et al., 2008; Muzio et al., 2011) and suggests that traditional professions, like accounting and law, are becoming more agile through new connective practices.
- Technologists, as para-professionals, have become not only collaborators but also increasingly embedded within PSFs and a fundamental part of the advice production

process. This embedding is a new form of connective practice and involves, again, the boundaries around diagnosis but also to some extent inference becoming more permeable. Technologists, as an occupational group, help extensively with the process of analysing and generating data that informs problem definition, and latterly to some extent with inference that informs treatment plans. Crucially, though, collaboration with technologists is a strategic move on the part of accountants and lawyers. Again, in ways similar to other professions (on which see Bucher et al., 2016), accountants and lawyers have developed strategic if not uncontested collaborations with technologists. These collaborations allow the leveraging of AI to serve better clients, but equally importantly, the protection of a domain for ‘true professionals’ - by designating only some tasks as suitable for technologists (more on this below). As such, collaboration whilst involving the release of some tasks is a way of re-defining the boundaries of professional privilege in response to a new pressure.

- The jurisdiction of the accountant and lawyer has been re-defined. New kinds of services are offered that were previously outside of the jurisdiction of an accountant or lawyer, re-opening now decades-old debates about multi-disciplinary practice. This is most acute in accounting where the Big Four now have well-developed legal service offerings that have their foundations in technology-enabled advice production. Re-defining the domain of accountants and lawyers to encompass such things as HR and management consultancy advice, informed by accounting and legal analysis enabled by AI, similarly involves connective practices that potentially bring professions into conflict, or at least blur the boundaries between them.

It appears, then, that accountants and lawyers have responded to AI through forms of connective professionalism. However, digging deeper into the story reveals that responses also reveal insights pertinent to the questions in table I. I address each question in turn below.

Is a dichotomy between protective and connective helpful, and does connective necessarily mean the demise of protective? The connective practices of accountants and lawyers could be interpreted as forms of protection, given that in many cases they are designed to ensure a continued and exclusive role in relation to particular tasks. Whilst the client and technologists might play a new role in accounting and legal processes, a tight grip has been maintained on the tasks that are seen as adding most valuable, requiring the highest level of training and expertise, and ultimately protecting accountants and lawyers from replacement by AI or another occupational group using AI. For example, there has been little resistance to the handing of repetitive tasks such as sample selection and document review to AI and technologists, thus allowing technologists to input into the early-stage analysis and diagnosis processes. Such tasks have been strategically positioned as now outside of the scope of what defines the exclusive privileges of the professions, thus making the incursion of technologists less of a threat and more a connective opportunity. In particular, tasks associated with the interpretation of the results of AI analysis and determining courses of action, the inference and treatment work, have been focused on as the ones that should remain in the hands of professionals who add value through their distinctive expertise. Inference and treatment tasks have, therefore, become the basis of the maintenance of privileges, boundaries and protection, allowing AI to be adopted but through collaboration with technologists who become the users of AI completing ‘non-professional’ tasks. This strategic collaboration curtails AI in terms of its erosive effects on protection and leaves many of the tasks professionals most value intact. As such, connective practices are also protective practices – and hence the suggestion that *protective connectedness* may be a subtle recalibration of Noordegraaf’s (2020) thesis so as to capture the unhelpfulness of a dichotomy between protective and connective practices.

Is connective a new ideal type, as in something desirable? We can see from the observations above that connective practices are a strategic response to new pressures. On the one hand, the results may be beneficial for some groups. For example, clients may receive enhanced services as a

result of collaborations during advice production with technologists and the extending of services into new domains such as HR and management consultancy. However, on the other hand, we also see professions and occupations coming into conflict – few HR or management consultants will be pleased to see accountants and lawyers muscling in on ‘their patch’. Whilst neoliberal views may see this as effective market competition, there is ample evidence that professions in conflict can actually lead to sub-optimal outcomes for clients, as more effort is expended on defining and protecting boundaries and less effort on thinking about synergies (see for example Currie et al., 2012; Comeau-Vallée and Langley, 2020). As such, there should be caution in presenting connective professionalism as a desirable ideal type. Like any project, there will be winners, losers, and the protection of the interests of some groups over others. Therefore, any enthusiasm should be tempered by recognition of the strategic purpose of connective practices.

How does a sociology of expertise account for connective trends? Emerging from the discussion of AI a clear sense of relational expertise as professions position themselves and their privilege claims in a carefully configured landscape of professions and occupations. From one perspective, this relates to the role of technologists. Their input into tasks deemed lower value and outside of the protected domain of the professions is in line with what Huising (2015) describes as the releasing of ‘scut work’ to other groups. Technologists have their own expertise, which is relationally positioned as lower value than the expertise of accountants and lawyers. Therefore, collaboration to allow the effective completion of ‘scut work’ is embraced and helps reinforce the distinctiveness of the professional group. From another perspective, accountants and lawyers also increasingly position themselves in relation to other professions like management consultancy. They highlight how their ability to analyse data using AI, but informed by profession specific approaches and expertise, generates distinctive insights that parallel but remain separate to other groups such as HR or management consultants. As such, the strategies of the professions can only be understood through consideration of the way their expertise is defined in relation to the expertise of others, with the creation of hierarchies and distinctions offering a form of protection despite increasing connection.

Where does the professional organization fit into the story? A notable feature of the way AI has been embedded into accounting and law PSFs relates to the need for changes to facilitate collaborations between incumbent professionals and technologists. These collaborations, which as noted above are part of the strategic response of accountants and lawyers, have required PSFs themselves to change, yes because of the capital investment needed for new technology but equally importantly because of the need to embed a new cohort of technologist para-professionals into firm systems and structures. One of the biggest changes relates to partnerships, and specifically how you change partnerships to provide a career path for technologists. Here is not the place to go into the intricacies of partnership as a form of governance (but see Empson and Chapman, 2006). Suffice to say that because of the strategic importance to accountants and lawyers of technologists, as outlined above, there has been more willingness than in previous eras when knowledge managers sought rights to partnership to consider how technologists can be incorporated into partnerships and provided with a career path that is not based on client billings. Whilst still a work in progress with continued reservations and controversies, the significance of this development is that it involves PSFs acting to enable, and also being reconfigured by, spaces of connection between professionals and other occupations. Partnerships begin to look subtly different in composition, but at the same time mechanisms of protection are recrafted with career paths and places in the partnership for technologists controlled by accountants and lawyers in ways that protect their privileges. Consequently, like earlier rounds of change such as from the professional partnership to the managed professional business (see Cooper et al., 1996; Smets et al., 2017), PSFs are important in the evolution of the professions because they drive and enable change, but are also used by professionals tactically to serve interests, create buffers and refract change in ways that help provide continued protection (see Faulconbridge and Muzio, 2008, 2012;

and Noordegraf's earlier work, 2011). PSFs are, therefore, at the heart of *protective connectedness* because they are one of the spaces in which new forms of connection develop, but also one of the spaces that professionals continue to control and use to protect themselves through and from connective forces.

How does the story vary internationally? In my observations above, I have reflected on how AI impacted on accountants and lawyers in England. It is important to recognise, however, that England is a distinct context and does not offer universally applicable lessons. In England professional bodies (see Institute of Chartered Accountants in England & Wales, 2018; the Law Society, 2018) as well as government through its next generation services challenge scheme (which funded the research reported on here – see acknowledgements below) promoted AI and its potential to transform the professions. Other contexts have developed similar initiatives – such as the Singapore Ministry of Law's 'Technology and Innovation Roadmap' - and so might share partly comparable experiences (see also for example Goto [2021] who reports similar trends in accounting in Japan). But, in some circumstances AI has developed much less and has been viewed much more suspiciously. For example, in France the use of AI to generate data analytics using information from published rulings by judges has been outlawed. In the US there has been much greater uptake of AI for analysing court rulings, but much slower uptake in law firms. These anecdotal examples remind us that the story of the professions, past and present, differs significantly from country-to-country, and therefore so will the impact of changes, such as AI, in terms of how professional practices evolve (see empirical illustrations in Faulconbridge and Muzio, 2016, 2019). As Burrage et al. (1990) long ago argued, nationally differentiated analysis is needed that takes account of varying roles for key actors in professional systems, something that means *protective connectedness* or connective professionalism need to be developed as situated and variegated ideas rather than universal ideal types.

How can ecological approaches bridge debates? Since Abbott's (1988) seminal work it has been widely recognised that the professions operate as an ecological system with the relative positioning and relationships between groups being fundamental to a dynamic system. More recently Abbott (2005) extended this thinking by highlighting the significance of 'linked ecologies', this spurring important work on the synergistic as well as competitive relationships between professions (Seabrooke and Tsingou, 2015; Liu, 2018). The connective tendencies that Noordegraf (2020) highlights are natural extensions of such ecological thinking, and the observations above about the impact of AI highlight how links to new groups (such as technologists) and reconfigured relations with existing groups (such as management consultants) develop as professions respond to changing contexts. As such, the connective 'turn' is perhaps better positioned as a development of the ecological perspective, with the idea of *protective connectedness* attempting to retain the recognition of competition and protective tendencies embedded in ecological thinking whilst also recognising the growing importance of connective practices. Not throwing the baby out with the bathwater is, then, an important lesson that should be remembered when seeking to conceptualize developments in the professions. The empirical tendency of professions to be resilient and to change in 'sedimented' (Cooper et al., 1996) ways, and the conceptual ability of existing literatures to account for the waxing and waning of different influences on professionalization processes in different places at different times, remind us of the need to avoid epochal thinking.

The ABCs of How Networks Connect and Protect Professions

Lasse Folke Henriksen & Leonard Seabrooke

Forms of protection among professionals come from their capacity to connect. Studies of professions and organizations share a common interest in identifying forms of connectivity and professionalism, as well as how professionals can make claims to authority, autonomy, and expertise. Fundamental to these relationships and characteristics are forms of group maintenance and exclusion, the diffusion of norms and practices, and mechanisms of institutional settlement and change (Muzio et al. 2013). These concerns sit at the heart of the sociology of professions. Classic works in the field have investigated the relationship between professions and the state (Hughes 1963; Freidson 1986), common steps in professionalization (Wilensky 1964), how professional groups engage in jurisdictional battles (Abbott 1988), and the development of logics for self-protection and to ascribe value to work (Freidson 1984, 2001). Important for this body of theorization has been the identification of types of professions, professionals, and professionalism. Scholars have called on the sociological canon of Durkheim, Marx, Weber - and others like Bourdieu and Foucault - to provide insights into how professions connect and protect, as well as how professionals call on their own authority, autonomy, and expertise (for a review see Saks 2016). A key issue here is whether the analysis focuses on historical trends or ideal-typical behavior, and if there is a claim to specific description or to generalizability and scalability.

Mirko Noordegraaf's (2020) recent contribution takes an apparent middle position in making claims about generalizability and periodization. Noordegraaf describes a 'reconfiguration' in professionalism that includes the demise, or at least impairment, of protective forms of professionalism, and sees professionals embracing more connective forms of professionalism in their practice. As has been critiqued in this journal (Adams et al. 2020a; Adams et al. 2020b), a number of scholars involved with the sociology of professions take issue with Noordegraaf. Their complaints are that he confuses ideal-typical abstractions with the description of empirical trends, that what Noordegraaf is describing is actually a change in professional ideology and not work practice, and that his framework doesn't allow us to see forms of inequality linked to status, gender, class, and race.

We think that Noordegraaf is right. And wrong. Where we agree is that a change in professional ideology can lead to a change in the structure of social relationships undergirding interactions within and between professions. Claims to authority, autonomy, and expertise would certainly take on new forms in this environment. Where we disagree is that connectivity cannot be meaningfully used as a catch-all term to describe an overarching and irreversible historical epoch that marks the end of protective professions and the beginning of connective professions. This bias on changing *professionalism* tips the analysis of *professional interaction* in favor of connectivity, which hinders the potential for generalizability and scalability. Where we also disagree with Noordegraaf is on the social basis for protective and connective behavior, which he implies run along separate tracks (as also suggested by Waring in Adams et al. 2020, 242). We suggest that protection relies on connection, that forms of social closure among professionals have been enacted, which requires the acknowledgement of both in-groups and out-groups. What we understand as jurisdictional control in the sociology of professions is largely about the institutionalization of social closure, linking it to the recognition of expertise of a particular kind by an in-group (Abbott's classic 'diagnosis, inference, treatment') as a claim on autonomy that is recognized by a formal authority, an out-group, normally the state and other professions.

We suggest that Noordegraaf's will to locate forms of connectivity and protectionism is positive. It is needed because it can potentially allow us to find variation in forms of professional behavior across cases, which can then spark common conversations in the sociology of professions that are not only based on a shared interest in common research objects (e.g., professional service firms, such as Smets et al. 2017; Boussebaa and Faulconbridge 2019) or theoretical niches (e.g. identity

scripts, such as Bévort and Suddaby 2016). Our position on connected vs. protected professions is agnostic. Change in professionals' capacity to claim authority, autonomy, and expertise is a reflection of the social structure of interaction among themselves (Liu 2018), the communities they engage (Eyal 2013), and the environment in which they operate. In short, a greater capacity to generalize in the sociology of professions is welcome.

Our own work has sought to shed light on how new types of professionals - such as 'issue professionals' - forge connections to claim authority, autonomy, and expertise in transnational governance processes (Henriksen and Seabrooke 2016; Seabrooke and Henriksen 2017). Our view has been that connectedness is not a trend but that connection or protection relates to the social structure of professional interaction, which can be identified as a field, ecology, network, and other socio-spatial metaphors (Liu and Emirbayer 2016; Liu and Halliday 2019). In this work we juxtaposed issue professionals spanning professional-organizational networks with the literature on professions as tightly knit communities, because our empirical observation prompted us to highlight cross-professional, or professional-client, alliances as a salient phenomena when professionals become engaged in transnational policy and governance processes (Henriksen and Seabrooke 2021). However, our intention was never to mark the end of professions as protective communities that form and defend collective group boundaries in their interactions with other professions, or the state. Rather, it is hard to imagine any of what Noordegraaf identifies as connective without there being a significant element of protective relations.

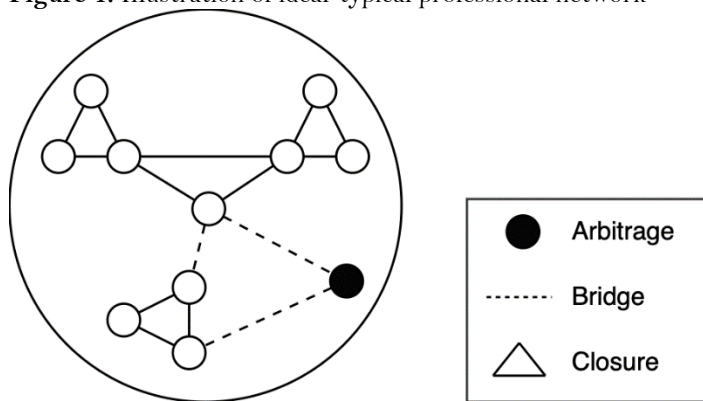
Network theory provides a common language for talking about the concrete structure of connectivity in professional interactions. Professions, like any social group, emerge out of structured in-group and out-group interactions. They form collective identities and a sense of belonging to a community which is reinforced via socialization, shared affiliations; all as a result of interactions taking on a certain structural form. Within these structures there is an ABC of network mechanisms, namely *arbitrage*, *brokerage*, and *closure*. This ABC underpins much network theory and can have a lot of explanatory power in the sociology of professions and organizations. It easier to take the ABC in reverse order, so we will start with closure.

Network *closure* refers to the tendency of people, in our case professionals, to form in-group rather than out-group connections, resulting in a network structure where closed triangles, and eventually cliques, dominate. The prevalence of network closure tend to strengthen group belonging, reaffirm identities and practices, and produce high levels of trust and social control. As such, network closure, has affinities with neo-Weberian work on the status closure of professions. Network closure protect professions, but can also fuel inter-group conflicts . In our former work we have drawn on Granovetter's (1973) notion of *bridges* which are out-group linkages that facilitate resource flows between the in- and out-group. Bridges reminds us of the mutual resource dependencies between in- and out-groups and can help mitigate the risks associated with cliques working as separate disconnected entities. Bridges help protect professions, but when the weaker ties that often act as bridges are not complemented by the stronger ties that binds people to groups, professional fragmentation can occur. Burt's notions of *brokerage* (2005, 2010), which we like to think about in terms of *arbitrage*, is the active process of controlling the inter-mediation between professional knowledge groups (Seabrooke 2014; Henriksen and Seabrooke 2016). The broker engaged in arbitrage can profit from fostering inter-group conflict and fragmentation, but can also facilitate inter-group collaboration and cross-integration. Arbitrage can help protect professions from costly turf wars and also foster new avenues for exploitation and control.

Imagining a set of professionals engaged in a series of productive interactions (e.g. collaboration, coordination, knowledge sharing, socializing etc.) around a set of tasks, enables us to think about

how the ABCs of arbitrage, bridges, and closure might operate in specific workplace interactions. Consider in Figure 1 the four sets of closed triangles which could likely be a product of task-based collaborations based on professional specializations such as biochemists (top-left), engineers (center), data scientists (top-right), and managers (bottom). The engineers form a cohesive in-group based on daily task collaborations but two members of the engineering team are also involved in intensive cross-team collaborations required to solve the complex task at hand. The engineers' project manager also coordinates with a member of the management team but on a less frequent basis. At the same time a part-time external consultant (bottom-right black point) has been hired to offer strategic advice on the project. She has monthly visits and liaises mainly with the senior manager and the engineers' project manager. In-group network *closure* in the form of closed triangles result from the co-presence of strong ties and are associated with increased emotional intensity and norm familiarity and adherence. Out-group connectivity (*bridges*) result from weaker ties that do not entail strong in-group identification but instead enable information diffusion across teams. Bridges however lack the norm familiarity found in closed groups and can create interest-conflicts and misunderstandings. Network positions linking professionals strongly to several in-groups however can be a successful basis for sustained collaboration (Vedres and Stark 2010). Being disembodied but occupying a position between two barricades (*arbitrage*) can lead to professional entrepreneurs who exploit disconnected network sites for their own benefits by manipulating the actions of several barricades. While a basic speculative example, these various structured interactions result from patterns of connectivity and disconnectivity alike. Barricades arise from stereotypical in-group interactions and form the basis for out-group or intermediating interactions. Connectivity and disconnectivity are dialectical processes which both lead to productive outcomes.

Figure 1. Illustration of ideal-typical professional network



This view on how connective and protective behavior are both present within professional networks can take us quite some way in current debates in the sociology of professions, including that over connective and protective professionalism. The sociology of professions has primarily documented forms of closure over professional jurisdiction and forms of professionalism that encourage homophily. More contemporary debates question this long-standing logic or provide variations on it. This includes research on how established professions deal with those offering connections (Essén et al. 2018) and professionals who rely on the maintenance of looser networks, defying conventional logics of professional settlement (Nicklich et al. 2020). The development of more 'corporate' professions and their jurisdictional claims can also be viewed as the realignment of in-group closure with a determined interest from those professionals to foster new opportunities for connection (Hodgson et al. 2015; Heusinkveld et al. 2018; Salman 2021). Work focusing on how professionals develop claims to connectivity that extend beyond their formal

jurisdictional bounds can also be seen through a network analytic lens (Boussard 2018; Francis 2020). The growing interest in transnational forms of professional activity can also be viewed as instances of in-group and out-group designation that is taking place across countries, with professionals maximizing their positions to exploit protection and connection in a 'thinner' social space (Tsingou 2015; Blok et al. 2018; Christensen 2021; Christensen et al. 2021). Discussions of *boundary work* and *boundary maintenance* are clearly linked to what we identify as the use of bridges and barricades (Liu 2018). Much of this work prefers the imagery of ecology to denote additional actor roles and a view social space as governed by material and ideational resources, but we see little issue there. Ecology, field, and network are different metaphors for social space, and even if they differ in what assumptions are most useful in understanding actors' behavior, they all focus on connection and protection.

We also suggest that network approaches allow the layering of different roles and complexities in how networks allow professionals to connect and protect themselves. This includes not only the presence of different kinds of actors, such as non-professionals with claims to expertise (Eyal 2013), but also different organizations through which professional work is conducted. Importantly, identifying bridges and barricades in networks doesn't require us to assume that the aim is jurisdictional control, as has been typical in the work on professional and 'linked' ecologies. Ties between actors in the network may also be based on 'antagonism', whereby actors reject "the terms already set within the network of expertise" (Brady 2018: 124). Greater role complexity can then provide insights into how in-group and out-group formation relates not only to strategic professional interests but is an outcome of the social structure.

Accordingly, our approach also resonates with notions of 'relational inequality'. Tomaskovic-Devey and Avent-Holt (2019) point to the importance of categorical distinctions for producing status hierarchies in organizational networks, leading to what they term relational inequalities. From this view the power relations between actors are based on a range of intersecting categorical distinctions, permitting the consideration of complex interactions. The intersection of categorical hierarchies - such as those related to professional status, class, gender, race, and others - may compound or undermine intersections of inequalities (Tomaskovic-Devey and Avent-Holt 2019, 48). These complex social hierarchies play out in different ways across workplaces and contexts, as do the qualities and structured interactions of professional networks and their effects on inequalities within and between professions. These complex social hierarchies also strongly inform professionals' claims to authority, autonomy, and expertise, producing multiple avenues for bridges and barricades to be put to use. Asymmetries in social structure may then be magnified at a global level, as has been identified in the racial, linguistic, educational, and class traits of many 'transnational professionals' and elites (Harrington and Seabrooke 2020; Young et al. 2021; Cousin and Chauvin 2021).

Conclusions

In sum, we suggest that Noordegraaf has done us a service to make us think harder about forms of connective and protective behavior among professionals. We have illustrated the questions raised and ideas inspired, firstly through discussion of their relevance of the core ideas to the effects of AI on accounting and law in England. This suggests that the thesis perhaps needs a little refining to build on its strength. The emphasis of the significance of connective tendencies is to be welcomed, but not if it means losing sight of the continuity of protection, albeit in new forms and often tied to connective practices. The idea of *protective connectedness* was proposed as a recalibration of Noordegraaf's (2020) thesis to recognize the way changes have blurred boundaries and emphasised collaboration, but often with protective ambitions. We have also, secondly, illustrated the questions raised and ideas inspired through a focus on 'issue professionals' and the use of

network theories. This further reveals that one does not have to choose between connective or protective professionalisms to recognize that forms of connectivity that matter for professional actions, including claims to authority, autonomy, and expertise. Rather, recognising both connective and protective forms provides a means to understand cases, be it behavior within a profession, professionals and organizations, or locating professionals and expertise in and across societies. The theoretical lens of the network allows scholars to track variation in forms of action. Applying more insights from network theory will allow the sociology of professions to discuss findings across cases and investigate not only rich micro-level interactions in workplaces but also discuss how professionals inform and reflect social structure and relational inequalities.

In sum, Noordegraaf (2020) provides an important intervention, his ideas with some refinement being capable of accounting for connective tendencies, their role in protective projects, and the variations in both protection and connection that exist between professions and countries.

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