Who Interacts with Whom?
Drivers of Networked Welfare Governance in Europe
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Migration is often perceived as a challenge to the welfare state. To manage this challenge, advanced welfare states have established transgovernmental networks. In this paper, we examine how domestic factors condition the interaction of representatives of advanced welfare states, when they are to cooperate on transnational welfare governance. Based on new survey-data, we compare who interacts with whom in one of the oldest transgovernmental networks of the European Union (EU), namely, the network dealing with EU citizens’ rights to cross-border welfare. First, we perform a welfare cluster analysis of EU-28 and test whether institutional similarity explains interaction. Furthermore, we test whether the level and kind of migration explains interaction and examine the explanatory value of administrative capacity. To test what drives interaction we employ social network analysis and exponential random graph models. We find that cooperation in networked welfare governance tends to be homophilous and that political cleavages between sending and receiving member states
are mirrored in network interaction. Domestic factors are key drivers when advanced welfare states interact.

*Keywords*: transgovernmental networks; welfare states; migration; cluster analysis; social network analysis; European Union
1 Introduction

Migration is often perceived as a challenge to the welfare state. When people take up work and reside in different states, the national borders of the welfare state are disturbed (Ferrera 2005). States have tried to manage this challenge in different ways, for instance by restricting residence rights for foreigners or limiting access to welfare benefits for those on the move. The European Union (EU) is exceptional in this regard and in global comparison (Geddes and Hadj-Abdou 2016; Maas 2013). Not only can EU citizens and their family members move freely and take up work in other member states; under certain conditions they are even entitled to the welfare benefits of the hosting state, on equal terms with its native population.

Yet, this path-breaking approach has come under an increasing strain. After the EU enlargements in 2004 and 2007, internal migration has increased substantially, primarily through movement from poorer to richer member states (Blauberger et. al. 2018; Cappelen and Peters 2018). In the wake of this increase, EU free movement and cross border welfare have become increasingly contested and politicised in the receiving states (Blauberger et al. 2018; Roos 2018; Roos and Westerveen 2019). Welfare chauvinist attitudes, according to which immigrants’ access to the welfare system should be restricted, inform political positions and electoral considerations within several member states (Hjorth 2016; Ruhs and Palme 2016; Cappelen and Peters 2018), as was epitomized by the 2016 Brexit vote (Hobolt 2016).

The EU legislation that is to ensure social protection for those on the move, results from delicate compromises between the member states, and is rife with potential distributive conflicts. The crux of the matter is about access to national labour markets and to national welfare protection. EU legislation is to ensure a level playing field in relation to internal mobility, while at the same time clarifying who pays for matters like healthcare, pensions, unemployment benefits, social assistance
and the schooling of their children. The legislation details which of these benefits follow the beneficiary across borders, i.e. through the principle of exportability, and how benefits or eligibility requirements can be aggregated between member states. The EU rules are detailed but also complex, allowing for further interpretation of key concepts and the various conditions attached to the rights.

Crucially, implementation of the rules and rights pertaining to social benefits for EU migrants is the province of the member states. This decentralized implementation system offers manifold opportunities for decentral shirking and strategic reinterpretation of rules. National implementation thus is an attractive ‘safety valve’ for governments presented with increased contestation of welfare states access for European migrants. Indeed, a recent analysis has shown the ways in which receiving member states have tried to ‘regain control’ over access to welfare systems during implementation (Sampson Thierry 2019). In addition, given the contentious and incremental setting in which EU welfare regulation is developed, problems of interpretation are bound to materialize during processes of national implementation.

How do the administrations of advanced welfare states cooperate to settle problems with national implementation and issues that supranational compromises have left unclear? As in other domains of global governance they resort to transgovernmental networks. Already back in 1958, an Administrative Commission for the Coordination of Social Security Systems (AC) was established to support the European Commission with the implementation of rules and rights. The AC is an EU transgovernmental network which consists of civil servants from EU member states who are supposed to interact to share information about and solve problems concerning the practical application of EU regulation. The policy theory behind the AC would require learning, capacity building and the peaceful resolution of conflicts. Ideally, a fully integrated network should develop: a network in which welfare states representatives interact and solve joint problems despite any institutional differences between them. This is desirable, because administrative capacities and welfare approaches
differ greatly between EU member states. Capacity building and learning would require interactions between dissimilar network members, to be effective.

The AC has good cards for organizing into a fully developed network. It is likely to develop interactions across the board, as it scores positively on a number of necessary contextual and network-level conditions for network impact, as developed in the literatures on TGNs and policy networks more generally. Firstly, interactions within a network take time to materialise. Yet, the AC is an old and established network, with an extensive history of collaboration - a key contextual requirement for network interactions (Turrini et al., 2010). Second, there is a great degree of interdependence between member states, which is a second condition for network interactions occurring (Van Boetzelaer and Princen, 2012). The reason is that intra EU-migration necessitates administrative interaction between sending and receiving states - the latter being primarily responsible for providing social security to the migrant. Third, the AC has a number of characteristics that are conducive to the development of interactions throughout a network: it has been explicitly constituted and has formalised mechanisms of network functioning (Isett et al., 2011). Fourth, it has a secretariat, which allows that resources are in place to sustain network interactions (Turrini et al, 2010) and makes for a more effective network than networks that are shared only between the members (Provan and Kenis, 2008). And indeed, the AC is a very active network in terms of tasks, meeting frequencies and development of its competences- it takes administrative decisions, it has an audit board, and in 2004 a conciliation board to solve disputes between members was established.

In sum, based on its governance structure and background, the AC seems a highly likely case for full network interactions. Yet, given the highly politicized nature of the policy area, this expectation can be questioned. This insight, firstly, flows from the work by Vantaggiato (2018) and Efrat and Newman (2018), who argue that political and institutional factors at the domestic level may condition interaction within a transgovernmental network (Ibid.) Similarly, Beyers and Kerremans
(2004) have pointed out that political cleavages are a structuring factor for interactions within networks, and the more recent literature notes that political factors count when explaining who interacts with whom in network governance (Bach and Newman 2014). In addition, Ruhs and Palme (2018) argued that national institutional differences in regulating labour markets and welfare states contribute to divergent political responses to free movement and cross border welfare. That is, political conflicts around EU free movement relate to national institutional factors, e.g. welfare states. Welfare institutions affect political and administrative positions on the deservingness of migrants, the appropriateness of sharing social responsibility between jurisdictions and how reciprocity should be the guiding principle in the provision of welfare benefits for migrants (Ruhs and Palme 2018). These insights inform our understanding of domestic factors, which in particular brings national welfare institutions and political factors into focus.

This article takes these conflicting expectations on network interactions in the AC as its basis. It asks the question to what extent domestic factors relating to social security drive member state interactions within the AC. To this end, we present three hypotheses on what explains network interaction, which follow the recent call for more fine-grained analysis of institutional and political factors as structuring premises for network interaction (Efrat and Newman 2018; Ruhs and Palme 2018; Vantaggiato 2018). Our first hypothesis brings in welfare state types as an explanation for who interacts with whom. Intra EU-migration has different - real or perceived - impacts on welfare systems, leading to different implementation problems. Thus, our first hypothesis is one of homogeneity: welfare states interact with other welfare states that are similar in the ways social security are provided. Our second hypothesis holds that migration patterns explain interaction. We expect that member states that encounter higher levels of intra-EU migration interact more in the network and that this effect is stronger for those at the receiving end of migration. As such, we expect that interactions mirror the political cleavage that we currently see in EU politics between receiving
and sending states. The issue at hand, i.e., cross-border welfare, is increasingly politicised at the national level. This politicisation may impede or condition interactions, establishing more frequent interactions by a subset of peers while leaving others at the periphery of the network. Finally, we hypothesise that some members are more capable of participating in the network than others. We expect that members from countries with high administrative capacity tend to interact more in the network than those from low-capacity countries.

We base our analysis on new and unique survey data on the interactions among national representatives in the Administrative Commission. Using these data, gathered for the purpose of this paper, we analyse who interacts with whom in the network. To identify patterns of institutional similarity among EU member states, we perform a cluster analysis based on three key fiscal welfare state attributes: quantity of welfare provided, type of financing and investment in welfare services. We identify four European welfare clusters: a continental, a Nordic-Atlantic, an Eastern European and a Southern-mixed welfare cluster. Social network analysis allows us to analyse the institutional dynamics underlying network governance. We use exponential random graph models (Handcock et al 2008) to test what drives interactions in the AC.

Our findings provide support for the institutional and political image of network interactions. Networked welfare governance indeed takes place but it is not a level playing field: interactions do not spread evenly between all peers. Instead, they occur in particular among countries belonging to similar welfare types and between member states that are confronted with high incoming EU mobility. Cooperation in networked welfare governance thus tends to be homophilous, foremost taking place between similar types of welfare states. Furthermore, we find that the political cleavage between sending and receiving member states is mirrored in network interactions. This finding suggests that the network foremost serves as a platform for addressing the problems and challenges associated with
incoming EU mobility among receiving member states, instead of the more general resource for learning and building capacities related to social security in the European Union.

2 EU cross-border welfare: political contestation and network governance

Before spelling out our theoretical argument, this section sketches the regulatory and institutional context within which the AC operates. The rules governing cross border welfare in the European Community date back to one of the oldest EU regulations, regulation no. 3/58 adopted in 1958. The regulation was later reformed into regulation 1408/71, which currently is titled regulation 883/2004. This regulation details EU citizens’ rights to social security in other member states, specifying which benefits can be exported to other member states and how benefits can be aggregated between jurisdictions. Furthermore, the AC deals with the social security aspects of the posting of workers directive 96/71 and the interplay between the residence directive 2004/38 and regulation 883/2004.

The EU rules have had far-ranging consequences for the provision of social welfare and hence the functioning of national welfare states (Ferrera 2003; Ferrera 2005; Hemerijck 2013; Leibfried 2015). Today, all EU workers, self-employed persons, and citizens who can provide for themselves and their family members have a right to move to and reside in the EU member state of their choice. In addition, they become eligible for welfare benefits in a hosting state under certain conditions. A wide range of welfare benefits are covered, including healthcare, pensions, maternity and paternity benefits, unemployment benefits, and family benefits. Thus, member states can no longer limit social benefits to their own citizens but shall treat citizens from other member states equally to their own
Furthermore, an EU state can no longer insist that some of its benefits are provided within its own territory only (Ibid.).

The political importance of EU welfare regulation has increased over time, as evidenced by the UK Brexit debate, in which ‘welfare tourism’ featured prominently (Blauberger et al. 2018). In addition, the topic has become increasingly politicised in several member states (Ibid.; Cappelen and Peters 2018; Roos 2018; Roos and Westerveen 2019). A new political cleavage has been identified in Europe, juxtaposing support for welfare state ‘closure’- primarily expressed by receiving member states - against support for free movement of labour, a position primarily held by sending member states (Dancygier and Walter 2015; Ferrera and Pellegata 2018; Hemerijck 2013; Teney et al. 2014; Walter 2017). This cleavage also manifests itself in EU legislative politics (Roos and Westerveen 2019). In December 2016, the European Commission proposed a revision of the Social Security Coordination regulation. After intense discussion in both the Council of Ministers and the European Parliament, the proposal was rejected in a Council meeting on 29 March 2019. That day, Austria, Belgium, Denmark, Germany, Luxembourg, the Netherlands and Sweden formed a blocking minority, opposing enhanced rights to cross-border welfare, particularly those concerning facilitated access to and exportability of unemployment benefits. The Czech Republic also voted against the proposal but on the position that the proposal did not sufficiently facilitate free movement.

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2 See Politico, 29. March 2019, “EU countries reject proposal on social security coordination”.
Behind the political scene, bureaucrat experts join one another in the Administrative Commission on Coordination of Social Security to address and solve problems on the practical application of the cross border welfare rules. Civil servants from each member state are sent to participate in Brussels meetings by their competent national ministry or agency, and interact with their EU counterparts. The AC and its subgroups are characterised by a very high meeting frequency with more than 90 meetings a year under the AC umbrella (European Commission, SWD (2018) 68, 19). The functions of the network are fourfold. First, the AC shall facilitate uniform application of Community law, in particular by promoting the exchange of experiences and best practices between the member states. Second, the AC can issue recommendations and make decisions on how the articles of the EU regulation shall be interpreted and applied. Over time, the AC has issued 243 decisions and 15 recommendations. Third, the AC provides a forum for dispute settlement. In 2004, a conciliation board was set up as part of the AC. If two member states disagree on who is responsible for the social security of a migrant worker or how to interpret or apply the rules of the EU regulation, the national authorities concerned may call on the Administrative Commission to intervene. The AC conciliation board will then interpret the dispute and decide on the case. Meeting minutes testify that disputes brought to the conciliation board typically involve a receiving and a sending member state. Furthermore, the AC has an audit board which deals with the financial and

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3 The tasks and mandate of the Administrative Commission are established in article 71-76 of regulation 883/2004.
4 Advanced EUR-LEX search for decisions and recommendations authored the Administrative Commission for the Coordination of Social Security Systems. The AC has furthermore authored a number of communications and notices among other documents.
6 See meeting minutes AC 827/16, 608/16, 889/16, 261/17, main conclusions of the 347th, 348th, 349th, 351th meetings of the Administrative Commission.
cost related aspects of the regulation.⁷ Fourth, the AC has a *quasi-legislative function* when the Commission prepares legislative proposals for reforming cross-border welfare.

These four functions make AC committee members interact on a wide range of issues. Some issues are regulatory in nature. Others concern how to improve cooperation and trust between competent national authorities. Other issues are distributive, relating to benefit costs and reimbursement between member states. Through the many meetings in the committee and its ad-hoc groups, representatives from member states will discuss and decide on key concerns of transnational welfare governance: which documents can member states exchange to certify an EU migrant’s right to reside or eligibility for social benefits and which portable documents fulfil the necessary authentication requirements. Ad hoc groups are established to work on which data can be exchanged electronically between national authorities and to promote cooperation between member states to avoid fraud and errors. AC members interact to prevent or solve distributive conflicts. For example, family benefits are a topical issue. As a result of migration, EU families may live in different Member States and may draw rights to family benefits from different countries. Such situations can lead to disputes between member states in determining which national institution is competent for what type of family benefit. The AC is the forum in which disagreements will be addressed and conflicts prevented or solved by decisions or the conciliation board. Another example is healthcare. If an EU citizen is insured in Sweden but treated in Poland, Sweden is obliged to reimburse the cost of care to Poland- but what is the right level of reimbursement? Or if an EU citizen has a car accident and has to be hospitalised in Sweden, but has no healthcare insurance in his state of origin, who is then to pay? In case of ambiguity or disagreement, the AC will step in and decide.

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With its administrative decisions, the AC takes on a quasi-legislative role. It also does so when a legislative proposal is prepared by the European Commission. In preparing the proposal for reforming regulation 883/2004, the AC was the forum where different political scenarios and reform options were discussed, data provided and member state positions presented beforehand. For example, the export of child benefits is a topical issue in EU cross border welfare. In Council negotiations, Germany, Ireland, Austria and Denmark worked firmly to have the Commission propose an indexation of child benefit so that benefits paid to children living in another member state would reflect the cost of living in the child’s state of residence. In preparing its proposal, the Commission presented different options to the AC on how to reform the exportability of child benefits: including the status quo option, an indexation option, and a no exportability option among other options (SWD (2016) 460, part 1/6). National opinions on the different options were submitted by AC members and discussed in the committee. As part of reasoning its proposal, the Commission came to the conclusion that the status quo option was preferred by the majority of member states and with reference to AC discussions, the indexation option was discarded by the Commission (SWD (2016) 460, part 4/6. See the different positions as submitted and discussed by AC members, page 139-140).

It is important to note that the issues addressed in the AC are equally relevant for receiving and sending member states: they concern cooperation and trust between national authorities, they involve mutual decisions on which state take over the social responsibility for the EU migrant, they decide on reimbursement levels and which documents shall be certified and exchanged between

8 See joint letter, submitted to Commissioner Marianne Thyssen 27. July 2017, by the governments of Germany, Ireland, Austria and Denmark.
receiving and sending member states and they are quasi-legislative, assisting the Commission in the preparation of legislative proposals.

3 Theory

Transnational cooperation in transgovernmental networks is commonly explained as a functional necessity flowing from the interdependencies created by complex governance challenges (Eberlein and Newman 2008; Hartlapp and Heidbreder 2018; Keohane and Nye 1974; Raustiala 2002; Slaughter 2004). The idea is that networks expand the capacity to address transnational policy challenges, allowing for the technocratic responses that only specialised domestic officials can provide. This flexible governance mode lowers transaction costs by focusing on the exchange of information, best practices, advice and problem solving (Slaugther and Hale 2010). In short, networked interaction is presented as a recipe for solving complex governance problems effectively and efficiently.

However, this ‘technocratic’ understanding of transgovernmental networks may run into limits in the case of politicized policy areas. Our thesis is that institutional differences and political cleavages will be important drivers of networked governance, in line with recent scholarly work by Vantaggiato (2018) and Efrat and Newman (2018) among others. Interactions are found to be influenced by domestic factors (Bach and Newman 2014), strategic action (Danielsen and Yesilkagit 2014; Ruffing 2015), political cleavages (Beyers and Kerremans 2004), and capacity (Beyers and Donas 2014). Furthermore, interactions are more likely among members that are perceived as similar or more influential (Vantaggiato 2018; Efrat and Newman 2018). Therefore, we assume that network members are strategic actors that choose with whom to interact based on domestic considerations. In
line with this assumption, we hypothesise that member states will interact mainly with member states that are institutionally similar and that that interaction depends on the level (high/low) or kind (incoming/outgoing) of migration, as well as the country’s administrative capacity.

First, *institutional similarity* is likely to drive interactions. Seeking out similar and like-minded partners for exchange, a type of homophily, is a pattern found in many studies on social networks (McPherson et al. 2001; Cranmer and Desmarais 2011). Indeed, recent contributions on European regulatory networks have found that networking is most extensive among national representatives from countries with similar types of capitalism (Lazega et al. 2017; Vantaggiato 2018) and that learning most often occurs among like-minded peers that are perceived to face similar institutional challenges (Papadopoulos, 2018). Efrat and Newman (2018) call for a more fine-grained examination of national institutional characteristics to explain network interaction. The willingness to share information is the critical component of network interaction, but as Efrat and Newman show, network members consider their domestic institutional context when assessing the reliability of their peers and thus who they are willing to share information with. Coming from similar institutions foster a shared understanding of relevant and trustworthy information and thus whom among the network members one should interact with (Ibid.). The same reasoning is likely to apply to a network as the AC with extensive tasks of information sharing, rule clarification and dispute resolution. Dealing with the application of European rules on social security, representatives coming from welfare states that are more similar are expected to experience comparable implementation challenges and draw from more equivalent practices. We thus expect that interactions concerning the coordination of social security systems and the uniform application of Community law are primarily driven by institutional similarity by means of welfare state types. Existing research on welfare typologies inform us that in particular three main characteristics distinguish welfare states from each other: welfare quantity, the type of financing, and investment in welfare services (Bambra 2007; Bonoli 1997; Kautto 2002;
Wendt 2009). These national institutional factors and divergences are likely to inform political and administrative positions to free movement and cross border welfare (Ruhs and Palme 2018).

For our purposes, a first relevant welfare state characteristic is the quantity of welfare being provided (Bonoli 1997). That is, member states with more generous welfare benefits in cash are likely to favour more conditional implementation of EU rules, in order to maintain national control on the uptake of national benefits (Hjorth 2016; Ruhs and Palme 2018; Sampson Thierry 2019).

The type of financing is a second relevant welfare state characteristic likely to affect the implementation of EU social security legislation (Bonoli 1997). A widespread view among member states is that reciprocity should guide EU migrants’ welfare entitlements (Ruhs and Palme 2018, 1490). Welfare states with a high degree of contribution-based rather than tax-financed welfare are better able to ensure that migrants’ welfare entitlements mirror what they have contributed into the welfare budget by means of contributions.

Thirdly and finally, member states’ investment in welfare services is likely to affect implementation. For example, access to and reimbursement of healthcare are a key part of EU rules. Whereas the redistribution strategy for some welfare states is mainly a transfer approach, where the emphasis is put on cash benefits, others make more extensive social service investments (Bambra 2007; Kautto 2002; Wendt 2009). The latter are likely to favour a more conditional implementation of the rules on welfare services, in order to maintain national control (Sampson Thierry 2019).

In sum, three aspects of welfare state types are expected to affect implementation and hence administrative positions and interaction in the network: welfare quantity, the type of financing, and investment in welfare services. On the basis of these aspects, the member states can be clustered into distinct welfare state type, on the basis of which we formulate the following hypothesis:
**Hypothesis 1:** Members of the AC are more likely to interact with members that belong to the same type of welfare state as they do.

Secondly, interactions within the AC are likely to be contingent on the level of migration that network members experience. The higher the number of EU migrants a country is hosting, the higher the likelihood that that state encounters administrative questions regarding welfare regulations across borders. The same goes for sending member states. The higher the number of outgoing migrant workers from a member state, the more likely the occurrence of administrative challenges concerning access to and exportability of welfare benefits for their citizens residing in other member states. We therefore expect the network to be more relevant for member states with higher levels of migration.

**Hypothesis 2a:** The higher EU migration AC members encounter, the more likely they are to engage in network interactions

However, receiving and sending member states may not engage in network interactions in an equal fashion. Political interests may define how actively a member engages in a network. Networks can be conceptualised as patterns of interaction and exchange specific for dealing with a certain policy problem (Kenis and Schneider 1991; Scharpf 1997). These patterns of interaction compose the network structure, determining who is at the core and at the periphery; the structure is therefore expected to reflect the purpose of the network and how the policy problem is defined. Problem definition is all about politics. While horizontal networks of bureaucrats representing their member states may be presented as a way of depoliticising sensitive issues (Eberlein and Newman 2008), it is questionable whether political cleavages are in fact overcome in real network interaction. The reason is in the political structure underpinning network establishment: this is an attractive alternative to
supranational oversight for national governments wanting to cooperate on sensitive issues, while wishing to maximise national sovereignty (ibid, p. 35; Kelemen and Tarrant 2011). Especially in case of distributive conflict, such a network is not likely to overcome existing cleavages. This has also been shown by Beyers and Kerremans (2004). In their study of a governance network with bureaucrats, politicians and societal interest, they demonstrate that network interactions tend to reflect political cleavages between member states, instead of overcoming them.\textsuperscript{9} In other words: the political incentives leading to network establishment may also drive interactions within that network, and ultimately, its impact.

This dynamic is highly likely to occur in the field of EU social security for EU migrants. The heated political debate on EU free movement and access to welfare has in particular portrayed the receiving member states as paying the price for EU migration, as a result of ‘welfare tourism’ and ‘social dumping’ (Blauberger et al, 2018). Additionally, in Council negotiations, a political cleavage has manifested depending on the kind (incoming/outgoing) of mobility a member state encounters, dividing members before and after the 2004 enlargement, i.e., between ‘old’ and ‘new’ member states (Roos and Westerveen 2019). We thus expect that the kind of mobility a member state encounters also drives interactions within the network, with receiving member states being more active in the network than member states on the sending side of migration.

\textit{Hypothesis 2b:} AC members that are on the receiving end of migration are more likely to engage in interactions than sending members.

\footnotesize{\textsuperscript{9} Yet, even if cleavages between network members are not overcome, EANs may have another type of depoliticizing effect, in that networks help to shift conflicts between network members from the public space to a secluded space, not visible to the larger public. We thank one of our anonymous reviewers for pointing this out.}
Apart from their readiness to interact, some members are expected to be more capable of participating in the network than others. Although governance networks stimulate coordination and reduce transaction costs of exchanging valuable information and practices to solve common problems associated with high interdependence (Jones et al. 1997), active participation requires a certain administrative capacity. The reasons are twofold. First, administrative capacity is found to significantly improve the legal implementation and application of EU law in domestic practices (Zhelyazkova, Kaya and Schrama 2016), which makes national representatives of more effective governments more attractive to gain information, advice and best practices from. Second, establishing and maintaining ties with peers and actively participating in networks requires time and resources (Leifeld and Schneider 2012). Accordingly, staff size has been identified as a significant driver of interaction in networks (Beyers and Donas 2014). The degree to which network members can spare the time and resources to engage in the activities related to the Administrative Commission is likely to drive engagement in the network.

Hypothesis 3: The higher a member state’s administrative capacity, the higher the likelihood of it interacting in the Administrative Commission.

4 Methodology and data collection

4.1 Social network analysis and exponential random graph models

Having specified the theoretical expectations for network interactions in the AC, we now describe our methods. To describe interactions, we use social network analysis. To take into account the relational character of EU welfare governance, our unit of analysis is the bilateral interaction among
members of the European administrative network regulating welfare across EU borders. Social network analysis enables us to study what drives these network interactions.

We develop exponential random graph models (ERGMs) to test our hypotheses regarding the driving forces of network interaction (see Handcock et al. 2008). The underlying assumption of ERGMs is that networks self-organise through continuing processes of tie formation over time, influenced by both attributes of the actors involved as well as network dependency structures (Robins et al. 20012; Schrama 2018; Vantaggiato 2018). Simply put, network ties are dependent on one another by definition, as one tie influences the likelihood of the existence of another tie. In this sense, they self-organise, and this process is influenced by network structures. To ascertain the effect of actor attributes on the likelihood of a certain tie, these dependencies need to be taken into account. Modelling the effects of interest and taking network structural tendencies into account allow us to estimate the significance of institutional similarity, EU mobility, administrative capacity and multiplex relations with regard to interactions in EU welfare governance.

4.2 Data collection

4.2.1 Dependent variables

We collected our data on network interactions through an online survey distributed to all national representatives of the Administrative Commission in 2018. In the survey, respondents were asked with which other national representatives they most frequently 1) exchanged best practices, 2) provided and received advice, 3) exchanged information and 4) resolved a problem in relation to the coordination of social security. They were free to list as few or many as they saw fit. The survey had a 100% response rate and resulted in four distinct adjacency matrices for each type of bilateral
interaction. These matrices represent four different networks in which different kinds of resources are mutually exchanged and were each used as dependent variables in our models.

4.2.2 Explanatory variables

To test whether network interaction is driven by institutional similarity of welfare states, we group all 28 EU member states according to the three key indicators of welfare models introduced above. First, we measured total social protection expenditures as a percentage of GDP. Second, we measured social contributions as a percentage of total social protection receipts. Third, we measured welfare services as the share of the total social protection benefits. All three indicators were compiled from Eurostat. To establish distinct welfare clusters, we ran a Ward’s hierarchical cluster analysis (Murtagh and Legendre 2014), grouping countries according to similarity on these indicators. In our model, institutional similarity is treated as a dyadic attribute, which takes into account whether two network members belong to the same welfare cluster.

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10 In doing so, we also add to the literature on welfare states. Although comparative welfare studies have developed much over time and have become more refined in how welfare state typologies are generated, only a limited number of countries have been classified along these three dimensions. Classifications have been limited to either the 18 OECD states that Esping-Andersen’s three worlds of welfare originally included (Esping-Andersen 1990; Kangas 1994; Korpi and Palme 1998; Bambra 2005) or the 15 member states of the EU up to the 2004 enlargement (Ferrera 1996; Kautto 2002; Wendt 2009). Until this point, however, the welfare regimes of EU-28 remained unmapped.

11 We used the following Eurostat data files: spr_rec_sumt, spr_exp_fto and spr_exp_sum. We used year 2016, for which the data was most complete for all indicators and member states. See table 1 in the appendix for the raw data.

12 This algorithm recursively groups countries together based on how similarly they score on the set welfare indicators, trying to minimise the variance within the clusters.
Next, we operationalised *EU mobility* by taking into account both the number of EU migrants that EU member states are *hosting*, as well as the number of EU migrants EU member states are *sending*. The data on EU mobility were taken from Eurostat\textsuperscript{13}.

Furthermore, we operationalised administrative capacity both at the level of the national government and the level of the administrative unit represented in the network. The former was operationalised as the level of *government effectiveness*. This indicator was taken from the Worldwide Governance Indicators (World Bank, 2017) and captures the quality of public, civil services and policy implementation more generally. *Staff*, on the other hand, represents the level of staff employed in the administrative unit that is involved in the network one way or the other. The data on staff levels were collected through our survey and are categorised as less than 1, one to two, two to three, or at least four fulltime (or equivalent) employees (FTEs).

We control for the interdependency related to *geographic proximity*, which is an identified driver of interaction in other transgovernmental networks (Vantaggiato 2018). Geographic proximity is a matrix of countries that share a border (1) or not (0). Countries are considered to share a border if they are separated by a land or river border or no more than 24 miles of water. Moreover, we consider *transitivity*, which is the network structural tendency of actors to close triads. This is a common social pattern of being more open for interactions with others that you already know indirectly through others (Goodreau et al. 2009). We include a geometrically weighted edgewise shared partners (GWESP) statistic in our model to take this into account (Snijders et al. 2006).

\hspace{1cm}

\textsuperscript{13} We used the following Eurostat data file: migr_pop9ctz. Data on EU mobility were taken from 2017.
5 Results

5.1 Cluster analysis on welfare indicators

Our analysis starts with the results of our cluster analysis, which will provide the basis for testing hypothesis 1. The raw comparative data behind the cluster analysis are listed in table 1 in the appendix. Using the three elements of expenditures, contribution, and service emphasis, our analysis groups EU member states in four welfare clusters. The heatmap in Figure 1 shows how each country scores on the welfare indicators relative to each other. The tree structure on the side of the heatmap shows the following: while the four clusters of countries fall apart in even smaller clusters, the differences between these four groups of EU member states are larger than the differences within them. Looking more closely to how these welfare clusters of EU member states map on the three indicators, we can recognise four distinct patterns (see both Figure 1 and Figure 2).

Overall, our categorisation of welfare clusters of EU member states based on levels of social contribution, social expenditure and share of service benefits is more complete, although largely in line with earlier classifications (Bambra 2007; Wendt 2009). The first cluster is the Continental welfare cluster, composed of Germany, the Netherlands, France, Austria and Belgium. This cluster is characterised by relatively high total social expenditures as a percentage of GDP and by being mainly contribution-financed. In terms of welfare financing, this cluster is typically Bismarckian (Bonoli 1997). At the same time, the service-emphasis of this welfare cluster is lower than the second cluster described below for most countries.

The second cluster is the Nordic-Atlantic welfare cluster, which is characterised by a relatively high level of welfare services and by being primarily tax-financed. In terms of welfare financing, the cluster belongs to the Beveridge type (Bonoli 1997). Within this cluster, we find
Sweden, Finland, Denmark, the UK, Ireland and Malta. Compared to previous cluster analyses (Bonoli 1997; Esping-Andersen 1990; Ferrera 1996), it may come as a surprise that the Nordic countries are grouped together with the UK, Ireland and Malta. This finding is, however, in line with Kauto’s (2002) clustering and reflects the fact that whereas the UK, Ireland and Malta score lower on total social expenditures as a percentage of GDP than their Nordic counterparts, they share a relatively high service emphasis and have a welfare system that is mainly tax-financed. Thus they fall into the same cluster.

Figure 1 Heatmap of welfare indicators for each cluster of EU member states
Note: Dark-coloured cells reflect higher relative values, and light-coloured cells reflect lower relative values. The colour bar on the left reflects the identified clusters.
The third cluster is the Eastern European welfare cluster. Here, we find Slovenia, Croatia, the Czech Republic, Hungary, Slovakia, Estonia, Lithuania and Romania. This group of countries has thus far been largely unmapped by existing literature, and it is interesting to see that they represent a distinct welfare cluster. In this cluster, total social expenditures as a percentage of GDP are low and mainly contribution-financed. Out of the welfare provided, there is, however, a certain relative service emphasis. However, this is indeed a relative measure drawn on the basis of benefits in kind as a percentage of total social benefits, and as can also be drawn from table 1 in the appendix, the actual benefits in kind as purchasing power per inhabitant remains low.

The fourth and final cluster we define as the Southern-Mixed welfare cluster, since we find a mix of EU member states here, including all southern European member states, Italy, Greece, Spain, Portugal and Cyprus, as well as Luxembourg, Poland, Bulgaria and Latvia. This welfare cluster is
characterised by being relatively low on total social expenditures as a percentage of GDP, albeit with Italy, Spain, Greece and Portugal scoring somewhat higher. Furthermore, the cluster has the lowest score on service emphasis across the four clusters. Finally, its welfare is primarily contribution-financed.

5.2 Social network analysis of networked welfare governance

Visualizing networked interactions regarding the coordination of social security in the Administrative Commission and the welfare cluster to which each national representative belongs, we can recognise a distinct pattern. Similar to the welfare clusters, we find that actors tend to cluster together with regard to their interactions (see Figure 3). This clustering seems to be especially strong for the countries belonging to the Continental welfare cluster and the Nordic-Atlantic welfare cluster. Moreover, we see a particular central role for Germany, demonstrating the highest number of connections among members of the Administrative Commission. In contrast, both Eastern European and Southern European countries generally appear to be more towards the periphery of the network.

To test whether national representatives significantly engage more with their counterparts from similar welfare types and whether this is the case for all kinds of exchanges, we rely on the results from our exponential random graph models. See Table 1 for the results of the models, each estimating the hypothesized effects on the likelihood to interact for the exchange of best practices, advice or information or for problem-solving (goodness-of-fit diagnostics of each model can be found in the appendix, figures 1-4). Before we interpret the results of the models in relation to our hypotheses, we discuss the structural dependencies we controlled for in the models: transitivity and geographic proximity. First, we find that there is an overall network tendency to close triads, no matter what, as shown by the significant effect of transitivity for all interactions but problem solving. This
indicates that interactions are dense but also clustered, which is something that is in line with what we see in the visualisation of the network in Figure 3. The fact we do not find a significant effect for transitivity for problem solving does not mean there is no tendency for this kind of clustered interaction but that we can explain this by the other included variables. Second, geographic proximity is a significant and strong determinant of interaction. When two countries share a border, they are likely to interact in the network as well.

**Figure 3.** Network interactions based on the exchange of information, best practices, advice and problem solving in the Administrative Commission.

Note: The thicker the tie, the more types of exchanges were involved in network interactions. The size of the nodes represents the number of connections, and the colour represents the welfare cluster (light grey = Continental welfare cluster; lilac = Nordic-Atlantic welfare cluster; blue = Eastern European welfare cluster and turquoise = Southern-Mixed welfare cluster).
Beyond these factors influencing network interactions, we test what drives national representatives to interact and with whom to interact. First, in line with hypothesis 1, we find a significant and positive effect of institutional similarity on the likelihood of two types of ties materializing: the exchange of advice and information sharing. The effect is particularly strong for the likelihood that national representatives give each other advice. The odds\textsuperscript{14} that two institutionally similar welfare state representatives exchange advice are 1.97, meaning that national representatives from similar welfare clusters are almost twice as likely to give each other advice. The exchange of advice can be interpreted as a kind of exchange that is most relevant for representatives coming from similar systems in regard to welfare policies. Network members coming from a similar institutional background in regard to welfare policies can be assumed to be more likeminded and therefore more open to each other’s advice on the coordination of social protection.

Furthermore, in line with hypothesis 2a, we find that EU mobility drives interactions in the network. However, this effect is not similar for sending and receiving members. In line with hypothesis 2b, we find very strong and significant effects for members that encounter high incoming EU mobility, while there is no significant effect for members that encounter high outgoing EU mobility. The higher the number of EU migrants hosted by EU member states, the more actively their national representatives use the European administrative network. This holds true for both the exchange of best practices and information sharing, indicating that the administrative network is most beneficial for those EU member states that are on the receiving side of EU mobility. While interactions related to problem solving show a similar tendency, the effect is not significant at a 5% level and should therefore be interpreted with caution. No significant effect of EU mobility is found

\textsuperscript{14} The odds are calculated by taking the exponential function of the relevant ERGM coefficient: $\text{Exp}(0.678) = 1.97$. 
for the exchange of advice, suggesting that countries that host more EU migrants are not significantly more active in all kinds of interactions. In regard to emigrating EU citizens, we do not find that their number positively affects the likelihood of the national representative of their home country to engage in the network. Overall, the finding that sending member states do not engage to the same extent as hosting member states suggests that cooperation and learning are biased towards those that are at the receiving end of EU mobility. This is contrary to the objective of the network to enhance horizontal cooperation and interaction and even reflects political cleavages and a core-periphery structure.

Interestingly, we do not find a clear and consistent effect of administrative capacity on the likelihood of network engagement (hypothesis 3). First, overall government effectiveness does not significantly affect whether or not members engage in any kind of network exchange. However, no matter the effectiveness of national governments, we do see that for some kinds of exchanges, it matters how many employed staff members are involved in the activities of the Administrative Commission. The results indicate that administrative units with higher staff levels were more likely to exchange best practices and information, whereas this is not the case in regard to the exchange of advice or problem solving. On the one hand, this indicates that the former activities require more administrative capacity; on the other hand, this could mean that the exchange of advice and problem solving are considered more vital to the network members.
### Table 1. Exponential random graph models on network member attributes

<table>
<thead>
<tr>
<th></th>
<th>Best practices</th>
<th>Advice</th>
<th>Information</th>
<th>Problem solving</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Density</strong></td>
<td>-7.225***</td>
<td>-2.592**</td>
<td>-5.011***</td>
<td>-4.375***</td>
</tr>
<tr>
<td></td>
<td>(1.115)</td>
<td>(1.040)</td>
<td>(1.104)</td>
<td>(1.155)</td>
</tr>
<tr>
<td><strong>Transitivity</strong></td>
<td>1.740***</td>
<td>0.504**</td>
<td>0.876*</td>
<td>0.286</td>
</tr>
<tr>
<td>(GWESP, $\alpha=0.3$)</td>
<td>(0.584)</td>
<td>(0.212)</td>
<td>(0.500)</td>
<td>(0.201)</td>
</tr>
<tr>
<td><strong>Geographic proximity</strong></td>
<td>2.617***</td>
<td>2.118***</td>
<td>1.649***</td>
<td>2.651***</td>
</tr>
<tr>
<td></td>
<td>(0.436)</td>
<td>(0.370)</td>
<td>(0.386)</td>
<td>(0.399)</td>
</tr>
<tr>
<td><strong>Institutional similarity (H1)</strong></td>
<td>0.125</td>
<td>0.678**</td>
<td>0.515*</td>
<td>0.087</td>
</tr>
<tr>
<td></td>
<td>(0.307)</td>
<td>(0.296)</td>
<td>(0.269)</td>
<td>(0.346)</td>
</tr>
<tr>
<td><strong>EU mobility (H2)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosting EU migrants</td>
<td>0.144**</td>
<td>0.091</td>
<td>0.176**</td>
<td>0.183*</td>
</tr>
<tr>
<td></td>
<td>(0.073)</td>
<td>(0.080)</td>
<td>(0.074)</td>
<td>(0.094)</td>
</tr>
<tr>
<td>Sending EU migrants</td>
<td>0.098</td>
<td>-0.122</td>
<td>0.021</td>
<td>0.099</td>
</tr>
<tr>
<td></td>
<td>(0.073)</td>
<td>(0.079)</td>
<td>(0.068)</td>
<td>(0.088)</td>
</tr>
<tr>
<td><strong>Administrative capacity (H3)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff level</td>
<td>0.242***</td>
<td>0.039</td>
<td>0.261***</td>
<td>0.087</td>
</tr>
<tr>
<td></td>
<td>(0.085)</td>
<td>(0.087)</td>
<td>(0.080)</td>
<td>(0.096)</td>
</tr>
<tr>
<td>Government effectiveness</td>
<td>0.093</td>
<td>-0.157</td>
<td>-0.127</td>
<td>-0.141</td>
</tr>
<tr>
<td></td>
<td>(0.164)</td>
<td>(0.193)</td>
<td>(0.166)</td>
<td>(0.206)</td>
</tr>
<tr>
<td><strong>Akaike Inf. Crit.</strong></td>
<td>363.684</td>
<td>326.431</td>
<td>441.457</td>
<td>317.793</td>
</tr>
<tr>
<td><strong>Bayesian Inf. Crit.</strong></td>
<td>395.163</td>
<td>357.910</td>
<td>472.936</td>
<td>349.272</td>
</tr>
</tbody>
</table>

Note: Coefficients are log odds ratios and standard deviations are in parentheses. Significance levels: *$p<0.1$ **$p<0.5$ ***$p<0.01$. 
6 Conclusion

Across the globe, migration is regarded as a challenge to the welfare state, forcing states to decide on how to regulate social protection for those on the move. The EU has adopted exceptional rules in this regard, allowing EU migrants the right to move to and access welfare in other member states. At the same time, the rules are complex and detailed, filled with political compromises and judicial interpretations, which bring implementation challenges to national administrations, having to manage between the specific characteristics of their national welfare schemes, increased politicisation of the rules and the requirement to comply with EU obligation. To ensure cooperation between the representatives of advanced welfare states, the Administrative Commission is a key instrument to enable information sharing, rule clarification and dispute resolution.

Crucially, the AC is to enable learning, capacity building and dispute settlement between member states. It also is a rather likely case for network interactions to develop across the board, as it scores high on a number of prerequisites for interactions to materialize across the network: it is an explicitly formalised network with a long history of collaboration between members that are highly interdependent, and it has the required resources to sustain interactions. At the same time, we can doubt whether interactions really develop across the board, given the contested nature of welfare provision to migrants, and the fact that previous network research has shown that political and institutional factors at the domestic level may structure interactions within a network.

Following recent work on how domestic factors structure international cooperation (Bach and Newman 2014; Efrat and Newman 2018; Ruhs and Palme 2018; Vantaggiato 2018), we presented the theoretical argument that network members of advanced welfare states seek out peers coming from similar institutional contexts for their network interaction. National welfare institutions are likely to structure interaction, not only because they represent strong institutional legacies and ways
of doing things, but also because institutions contribute to divergent political responses to free movement and cross border welfare (Ruhs and Palme 2018). The civil servants interacting bring with them a specific institutional and political context that inform implementation challenges and therefore their administrative positions in transnational welfare governance.

Our analysis identified four welfare state types: a continental, a Nordic-Atlantic, an Eastern European and a Southern-mixed welfare cluster. We find that these welfare state types indeed structure who interacts with whom in the AC. Welfare state representatives turn to peers from similar institutional contexts when exchanging information and seeking advice in regard to free movement and cross border welfare. In particular, our analysis revealed a strong tendency of national representatives from similar welfare state types to exchange advice with one another. Advice giving in relation to implementation challenges express trust between peers, but such tends to be directed towards counterparts coming from similar institutional contexts. Furthermore, we found that those countries confronted with high numbers of incoming EU migrants more often engage in network interactions, primarily to exchange best practices and information. Member states with high outgoing migration, in contrast, do not engage in interactions more often than others. Finally, we find that differences in the overall government effectiveness do not affect activity in the network. However, higher staff levels do enable more activity for some type of exchanges, indicating that even though highly embedded relations may reduce transaction costs, some member states are more capable of participating in the network.

Our results demonstrate that networked welfare governance indeed materialises but not evenly throughout the network, as the policy theory underpinning the AC would entail. Instead of exchanging information, best practices, giving advice and solving problems across the spread of experiences of EU-28, interaction occurs particularly among similar welfare types. Furthermore, our findings show the centrality of receiving member states in the network. Whereas political and administrative
challenges can be expected to occur to the same extent for receiving and sending member states, receiving member states tend to define the network, being the network core, whereas sending member states are placed at the periphery of the network. Cooperation in networked welfare governance is rather homophilous and mirrors the political cleavages between sending and receiving member states that have also been identified in Council negotiations between national ministers.

These findings have several implications. First, in terms of the rules at stake; EU free movement and cross border welfare, the benefits of cooperation do not reach evenly. Information is a core input of governance (Efrat and Newman 2018). Advice giving is just as essential as input when implementation challenges in transnational welfare governance are to be solved. However, our analysis shows that information and advice primarily flow between peers from the same institutional context, thus hindering a more even spread of core inputs to improve EU governance. Second, given that we have investigated a case with high likelihood to be fully integrated and with ability to depoliticise issues, our finding of homophilous network interaction have implications for other network types. The findings suggest that less developed networks, be they younger, having less meeting frequency, fewer functions or without a secretariat, will be less able to overcome political differences and clustered interactions. Third, the core-periphery structure identified between receiving and sending member states in transnational network governance contradict the conventional theoretical argument that network interaction revolves around interdependencies created by complex governance challenges. Despite interdependencies between receiving and sending member states, the former are in the center to define the challenges and solutions of transnational welfare governance. We see that peers interact with peers, but that some peers are more active than others. These peers interact at the core of the network, with more ability to define problems and solutions in the everyday governance of Europe.
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