



## Measures and Meanings: Exploring the Ego-Net of Helen Kirkpatrick Watts, Militant Suffragette

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### Abstract

In this paper we discuss the personal network or ‘ego-net’ of Helen Kirkpatrick Watts, a militant suffragette and one of the founder members of the Nottingham *Women’s Social and Political Union* (WSPU). Our aims are fourfold. Firstly, we want to make a contribution to the growing literature, briefly reviewed, on the significance of social networks in relation to social movements. Secondly, we want to make a contribution to the academic literature on the suffragettes. Thirdly, at a methodological level, we want to contribute to on-going efforts, briefly reviewed, to bring qualitative concerns and issues back into social network analysis, generating a dialogue between quantitative and qualitative approaches. Finally, we conceive of this paper as a pilot for a much larger study of suffragette networks. Specifically, it allows us to experiment with ways of drawing network data from an archive and, relating to our third aim, to dry run an approach to network analysis which integrates quantitative and qualitative approaches.

**Key words:** ego-net, Helen Kirkpatrick Watts, social networks, social movements, suffragette networks

### Introduction

In this paper we discuss the personal network or ‘ego-net’<sup>1</sup> of Helen Kirkpatrick Watts, a militant suffragette and one of the founder members of the Nottingham *Women’s Social and Political Union* (WSPU). Our aims are fourfold. Firstly, at a substantive level, we want to make a contribution to the growing literature, briefly reviewed below, on the significance of social networks in relation to social movements. Focusing upon a suffragette allows us to ascertain whether observations derived from other movements apply to this one and focusing upon her ego-net in detail affords us a greater depth of observation than is usual in studies of this issue. Secondly, again substantively, we want to make a contribution to the academic literature on the suffragettes. There has been a great deal of good work on the suffragettes, covering a range of themes as well as the general history of the movement (e.g. Phillips 2003, Mackenzie 1975). Whilst some of this work highlights the importance of suffragette activist networks, particularly on local levels and in relation to friendship and kinship (Stanley and Morley 1988, Stanley Holton 1996, Cowman 2000, Crawford 2001), it does not engage with the formal social network analysis literature. We hope to show that such engagement can be productive. Thirdly, at a methodological level, we want to contribute to on-going efforts (briefly

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reviewed below) to bring qualitative concerns and issues back into social network analysis, effecting a dialogue between quantitative and qualitative approaches. Finally, we conceive of this paper as a pilot for a much larger study of suffragette networks. Specifically, it allows us to experiment with ways of drawing network data from an archive and, relating to our third aim, to dry run an approach to network analysis which integrates quantitative and qualitative approaches.

The paper begins with a brief review of both the literature on movement networks and certain recent calls for a revival of the qualitative aspect in network analysis. This is followed by a brief introduction to the protagonist of our paper, Helen Watts, and to the archival materials regarding her network. Finally, we present, in a number of stages, our analysis of this network. In addition to drawing substantive conclusions about the network, we hope to show that (and how) qualitative and quantitative methods can be mutually informative in network analysis.

### **Social Networks and Social Movements**

The concept of networks and the methods of formal social network analysis have enjoyed a growing importance in the study of social movements in recent years (Diani and McAdam 2003, Crossley 2007). Most movement scholars agree that networks play various crucial roles in relation to extra-parliamentary political engagement. It has been noted, for example, that movements and protests are more likely to take shape within aggrieved populations when those populations are networked, not least because established connections afford the mechanisms of coordination, solidarity and trust required for effective collective action (McAdam 1982, Morris 1984, Gould 1991, 1993a, 1995). Moreover, this effect has been shown to be enhanced where members of a network belong to a common social category, generating a so called ‘catnet’<sup>ii</sup> (White 1992, 2008), which can be invoked as a collective identity (Tilly 1978, see also Melucci 1989, Gould 1995, McAdam and Paulsen 1993). Similarly, it has been noted that networks allow a critical mass of suitably resourced and interested actors to ‘find’ one another, forming bonds which, in turn, lead to collective action. This process is further enhanced to the extent that the networks in question are either dense or centralized (Marwell et. al 1988, Gould 1993b, Kim and Bearman 1997).

In a different vein, it has been argued that networks are a crucial means of recruitment to activist groups. Many activists report both coming to activism via personal relations and recruiting friends and associates (Snow et.al. 1980, 1983, McAdam 1986, McAdam and Paulsen 1993, Sageman 2004, Opp and Gern 1993). And it has been shown both that the conversion of interest into actual involvement is affected by connection to other activists (McAdam 1986), especially where individuals enjoy ‘prominence’<sup>iii</sup> within a network (Fernandez and McAdam 1988), and that connection to an activist shapes the way in which individuals perceive activism and encourages assimilation of a (positive) activist identity (Passy 2001).

Different ‘network domains’ (White 1995) or ‘social circles’ (Simmel 1964) have been explored in this work, including those rooted in religion (McAdam 1982, Morris 1984), neighbourhoods (Gould 1991, 1993a,b, 1995), the university campus (McAdam 1986, Crossley 2008a) and the workplace (Edwards 2008). It is particularly noteworthy for our purposes, however, that kinship networks are deemed central in a number of studies. These studies suggest both that there is tendency for activists to come from either religious or political families, pointing to the significance of political socialisation in kin networks (Downton and Wehr 1997, Searle-Chatterjee 1999), and that family responses to planned political involvement play a role in determining whether those plans come to fruition. In particular young people whose parents support their proposed political involvement are more likely to become involved (Fernandez and McAdam 1988, McAdam 1986). Conversely, when parents are unsupportive or disapproving involvement is less likely.

As this point suggests, networks can hinder recruitment and mobilisation too. Relations with others opposed to activism or to a specific movement may inhibit the impulse to become involved. Likewise, a high level of involvement in any type of non-activist relations (e.g. family, work, school etc.) may render an actor ‘structurally unavailable’ for recruitment and mobilisation by consuming their available time, energy and other resources (Snow et.al.1980, 1983, Kitts 2000, McAdam and Paulsen 1993). Furthermore, ‘multiplex’<sup>iv</sup> relations between oppressed groups and their oppressors can compromise the potential for mobilisation

(McAdam 1982). The involvement of blacks in the civil rights movement in the USA was greater in more segregated (geographical) areas, for example, not only because segregation increased grievances but also because minimal contact between blacks and whites reduced both the likelihood and the effectiveness of informal mechanisms of social control between the two groups. Bonds of affection and familiarity with one's oppressors make militant action against them more difficult.

The conclusion that we might draw from this is that recruitment and mobilisation are more likely in situations where potential activists are tightly networked with one another and with those who will support their mobilisation but relatively segregated from those who would disapprove or seek to prevent it. This is the ideal network figuration for mobilisation. More generally, however, our conclusion must be that the link between networks and mobilisation/recruitment is strong but complex. To grasp the significance of networks in any concrete context we must engage with their details.

At another level, analysts increasingly understand social movements as networks and there is a growing tendency towards mapping these networks using the tools of formal social network analysis (on these tools see Scott 2000, Wasserman and Faust 1994). Analysts have looked at the network structures connecting individuals within particular 'social movement organisations' (SMOs) (Ray et.al 2003); at the ties between organisations effected by way of formal agreements, overlapping memberships and links between individual members (Diani 1990, 1995, Saunders 2005, 2007, 2008, Sageman 2004); and they have looked more generally at ties between key activists in particular movement and geographical contexts (Rosenthal et.al 1985). It is generally argued that specific network figurations and the particular position that an actor or SMO enjoys within a network generate both opportunities and constraints for action.

Within this work, moreover, there is a recognition that networks are dynamic structures which evolve as new actors come into play and established actors variously make, break and maintain relations in the course of their on-going interactions. Diani (1990, 1995) and Saunders (2007, 2008) in particular have sought to explore the underlying dynamics of relationship formation (between SMOs) in a movement context (see also Takács et.al 2008).

Activist networks and ties have also been key themes in recent work on the UK suffragettes, particularly following Stanley and Morley's (1988) work on suffragette friendship networks and what Liddington and Norris (1978) identify as a re-focusing of suffragette research away from high profile organisations and leaders towards local, grassroots activity. This work has employed a variety of methods, often focusing upon individual life-histories and narratives (Stanley Holton 1996, Crawford 2001) or upon local suffrage groups (Cowman 2000). Relatively few of these studies engage with the abovementioned literature on networks and movements, however (key exceptions are Mueller 1994, Keck and Sikkink 2000, Ryan 2001). And none of them use formal social network analysis. Indeed, Rosenthal et. al's (1985, 1997) work on nineteenth century women's reform movement in the USA is the only formal analysis of 'first wave' women's activism that we have been able to find. We do not, to date, know how well the networks of the UK suffragettes bear out the general claims of the movement networks literature therefore. And we have yet to see how, if at all, social network analysis might contribute to our understanding of suffragette networks. The present paper is a preliminary step towards answering these questions.

### **Qualitative Approaches**

The developments outlined above are important and there is a great deal of scope for further advancement along these lines, particularly given the considerable developments in quantitative network methods in recent years; that is, in mathematical (albeit often descriptive) methods of mapping networks and measuring their properties (see Carrington et.al 2005). Notwithstanding this, however, there has also been a notable growth of work, both in the social movements area and in relation to network analysis more generally, pointing to aspects of networks and social relations which, it is argued, are often ignored in quantitative network analysis and which are best, indeed perhaps only accessible by qualitative means (Mische 2003, Emirbayer and Goodwin 1994, Knox et.al 2006, Prell 2006). Thus, Ann Mische seeks to open up new avenues for research on movement networks when she reminds us that, "Relations in networks are about what people do in

interaction” (Mische 2003, 258). She adds that “It is not just networks or memberships that matter, but also how these relationships are represented, activated or suppressed in social settings” (ibid). The obvious implication, given that the ‘doing’ and ‘representing’ of networks is not captured in sociometric graphs and matrices, is that network analysis needs to supplement its procedures for mapping and measuring networks with more qualitatively sensitive forms of analysis. Mische’s work on ‘network switchings’ and ‘cross-talk’ in movements both exemplify this (Mische and White 1998, Mische 2003).

Likewise, Emirbayer and Goodwin argue that:

Network analysis gains its purchase on social structure only at the considerable cost of losing its conceptual grasp upon culture, agency and process. It provides a useful set of tools for investigating the patterned relationships between historical actors. These tools, however, by themselves fail ultimately to make sense of the mechanisms through which these relationships are reproduced or reconfigured over time. (Emirbayer and Goodwin 1994, 1446-7)

They add:

Our position is that a truly synthetic account of social processes and transformations that takes into consideration not only structural but cultural and discursive factors will necessarily entail a fuller conception of social action than has been provided thus far by network analysis. (Emirbayer and Goodwin 1994, 1447)

Similarly, McLean maintains that:

...the social network ties we have with each other are not merely given, nor do they have a simple fixed meaning. They are constructed, managed and maintained by means of the cultural work involved in discursive practice. (McLean 2007, xi)

Finally, Harrison White (1992), one of the key innovators in quantitative network analysis, and particularly blockmodelling methods, offers a theorisation of networks which at least implicitly points to a role for qualitative forms of analysis. White highlights the importance of ‘identity’ in networks and interactions, for example, arguing that relationships should be conceived as ‘stories’ which embed these identities.

This qualitative gap in network analysis is relatively recent in origin. Although there has always been a quantitative focus in network analysis, much of the early work was rooted in ethnography, where formal measures were interwoven with rich qualitative description (Knox et.al 2006, Scott 2006, Freeman 2006). Insofar as the balance has shifted in the quantitative direction within network analysis, therefore, this is a departure from its original form. What Mische, Emirbayer and Goodwin, and McLean are calling for is not a new departure but rather a return to the mixed method approach that once characterised network analysis. Or rather, what is being called for is development on the qualitative side of network analysis to match the considerable recent advances on the quantitative side, thus bringing the method back into balance by restoring the interplay of qualitative and quantitative insights that is evident in its history.

We share this critical view. The quantitative methods of network analysis are invaluable. We do not seek to deny or challenge this. However, as the above writers indicate, there are properties of networks, additional to quantifiable measures, which are better and more easily accessed via qualitative methods, such that re-opening the qualitative dimension could make a strong contribution to our overall understanding. Specifically, qualitative analysis can open up and explore complexities which are boxed off in quantitative work. When we indicate a relation between two nodes by way of a ‘1’ within a matrix or a connecting line (an ‘arc’ or ‘edge’) on a graph, for example, we bracket out the complexities of social relations and interactions, reducing them to a binary category (specifying the strength of ties and indicating whether they are positive or negative allows more detail but not much). Human relations have a meaning for the parties to them. They have a history and are always ‘in process’ as actors build upon them through repeated interaction. They vary across contexts and may be conditional. And this is important. It lends relationships a complexity that defies straightforward categorisation or statistical predictability. It is not certain, for any number of reasons, that I will pass on information I receive to everybody I know, for example, as a simple model of diffusion might assume. Some relationships may be going through a difficult patch; some may have become latent. I might filter my

dissemination by reference to what I think will be of interest to others or by reference to my own interests and so on. Likewise, trust in others might be contextual: Jane may trust John with respect to keeping personal secrets but not money, and Janet with money but not secrets. It is impossible, as an analyst, to know in depth the details of each and every tie in a network, at least if the network is reasonably large, but we can make more sense of what is happening if we have qualitative data on the history and meaning of specific ties. To the quantitative researcher this might be so much 'noise' that a stochastic model can bracket as such but the qualitative tradition affords us tools for rendering this 'noise' intelligible and reducing the margin of apparent randomness. There is no good reason not to do so.

The same is true in respect of the currently expanding area of network dynamics. Advanced mathematical techniques and, in particular, agent-based simulation models have facilitated enormous progress and fascinating work. However, these models typically involve explicit assumptions which everybody takes to be simplifications of empirical reality. Moreover, it is widely accepted that network 'outcomes' might be arrived at by different routes such that simulation models which successfully predict changes in real empirical networks across time can only claim plausibility; it could have happened like 'this' because the maths work but it might have happened differently. Ethnographic or historical research which seeks to describe, qualitatively, what is actually going on within a network between two points of time would clearly complement this work, providing evidence that plausible network dynamics actually were or were not in play.

Our position, to reiterate, is not qualitative versus quantitative. We are calling for a multidimensional approach to network analysis which combines the most sophisticated quantitative methods with the most appropriate and advanced techniques of qualitative analysis.

Marrying qualitative and quantitative approaches should, in principle, be relatively easy in network analysis because they explore different sides of the same coin. Where quantitative network analysis brackets out details of relations in order to better comprehend the larger patterns they cumulatively give rise to, qualitative analysis brackets out questions regarding the larger patterns in an effort to deepen our understanding of the details. 'Deconstructing' the assumption that relations are either present or absent, it seeks to explore their history, phenomenology, contextuality, variability etc. Moreover, and more straightforwardly, it facilitates an exploration of what is 'going on' within relations in a network over a given period of time. These two research agendas (quantitative and qualitative) are different but complementary. And they are equally necessary to an adequate understanding of the significance of networks in relation to social movement mobilisation and recruitment.

Moreover, they can be drawn from the same data sources. Structured questionnaires which elicit basic quantitative data regarding who knows whom can incorporate open ended questions on the history or nature of a relationship. Likewise, as noted, it has been relatively commonplace in the history of network analysis for researchers to construct adjacency matrices<sup>vi</sup> on the basis of data coded up from either ethnographic observations or historical archives; that is to say, data sources which are ordinarily deemed qualitative (or at least 'open ended') in nature and which are open to qualitative analysis. There is no methodological or epistemological inconsistency involved in both coding up source materials to construct an adjacency matrix and then further exploring those materials, qualitatively, for additional and perhaps crucial information regarding the 'adjacencies' involved.

Our analysis in this paper does exactly this. We use archive materials pertaining to the militant suffragette, Helen Watts, to derive successive quantitative mappings of her ego-net of activist-related personal contacts. But we also read those archives qualitatively in an effort to put meat on the skeleton that these sociometric mappings provide. We seek to add meanings to measures and, in doing so, offer a more comprehensive and robust account of the role of her ego-net within her activism.

## **A Project and a Pilot**

The material that we analyse is drawn from a pilot study for a much bigger project. The bigger project will seek, by means of archival analysis, to map the network of relations between activists in the UK suffragette

movement during their peak period of militancy (1904-1914), exploring dynamics of network formation and evolution as well as the general effects of the network and its structure. It will give special attention, moreover, to letters written by and to suffragettes. Many letters exist in the suffragette archives and we hope to use these letters both as a means of glimpsing into the phenomenology of the relationships/interactions we will be mapping in our wider project and also of engaging with the methodological challenge of comparing qualitative and quantitative approaches.

The aims of our pilot exercise, as presented here, are somewhat less ambitious. We explore the ego-net of just one suffragette, Helen Watts, drawing upon an archive which is described below. This dataset, bearing as it does upon an ego-net, differs significantly from the complete network dataset we propose to use in the bigger project. However, it is sufficient to test out the possibility for a mixed methods approach. Moreover, as we show, it is substantively revealing with respect to the impact of networks within the suffragette movement.

In addition, our analysis continues the trend in suffragette literature for a focus upon local, grassroots activists and their networks within and outside of the WSPU. Moreover, since Helen Watts is relatively unknown (see below), it furthers the goal of 'recovering' the stories of suffragettes 'hidden from history' (Liddington and Norris 1978, Stanley Holton 1996).

### **The Protagonist**

Helen Watts was a middle-class suffragette, born in Bishops Wearmouth in Durham in 1881. In 1893 her father became the Vicar of Holy Trinity in Lenton, Nottingham, and the family moved there.

During 1907 Helen joined the Women's Social and Political Union (WSPU). The WSPU, led by Emmeline and Christabel Pankhurst, had been founded in Manchester four years previously in order to drive forward the issue of female suffrage, which had been on the political agenda in England since the 1860s but had failed to achieve the gains that the Pankhursts and others had hoped for by the turn of the century. In 1906 the WSPU moved premises to London and sought to open local branches throughout the country. Helen was a key figure in establishing a Nottingham branch (in 1907).

Having initially disagreed with the use of militant tactics by some WSPU members, Helen soon embraced them and, in 1909, was imprisoned twice. Her first sentence, in March 1909, followed her involvement in a thirty-strong deputation to the House of Commons which sought to present the then Prime Minister, Herbert Asquith, with a resolution on 'Votes for Women'. With the others, Helen was arrested and sentenced to one month in Holloway jail. Her second sentence, in September of the same year, followed her involvement with a smaller group who sought to disrupt a public meeting in Leicester at which Liberal MP, Winston Churchill, was speaking. She was again arrested and sentenced to five days in Leicester jail. During this time she went on hunger strike, a form of protest first used within the suffragette movement by Marion Wallace Dunlop in July 1909 and subsequently adopted by militant suffragettes as a protest against their categorisation as 'second class' criminals rather than 'first class' political prisoners (Smith 1998). Many strikers were force fed but Helen seemingly escaped this response.

Like many of the suffragettes who were imprisoned, Helen was invited by both her local and the wider national WSPU to give public lectures upon her release, encouraging others to do as she had done. In this way she became a 'name' in the WSPU, albeit only a minor name. Her involvement in the abovementioned actions, imprisonment, and subsequent speeches are the extent of her documented involvement in the suffragette struggle and we have not been able to trace her whereabouts or actions after this point.

### **The Archive**

The archive relating to Helen Watts' activism can be found at the Nottingham Archive Office, where photocopies of her papers were deposited after their discovery in an unclaimed trunk at Avonmouth Docks in

the early 1980s. Before this discovery she was apparently undocumented in the academic literature and the papers have received little in the way of academic attention since (although see Whitmore 1996; 2007).

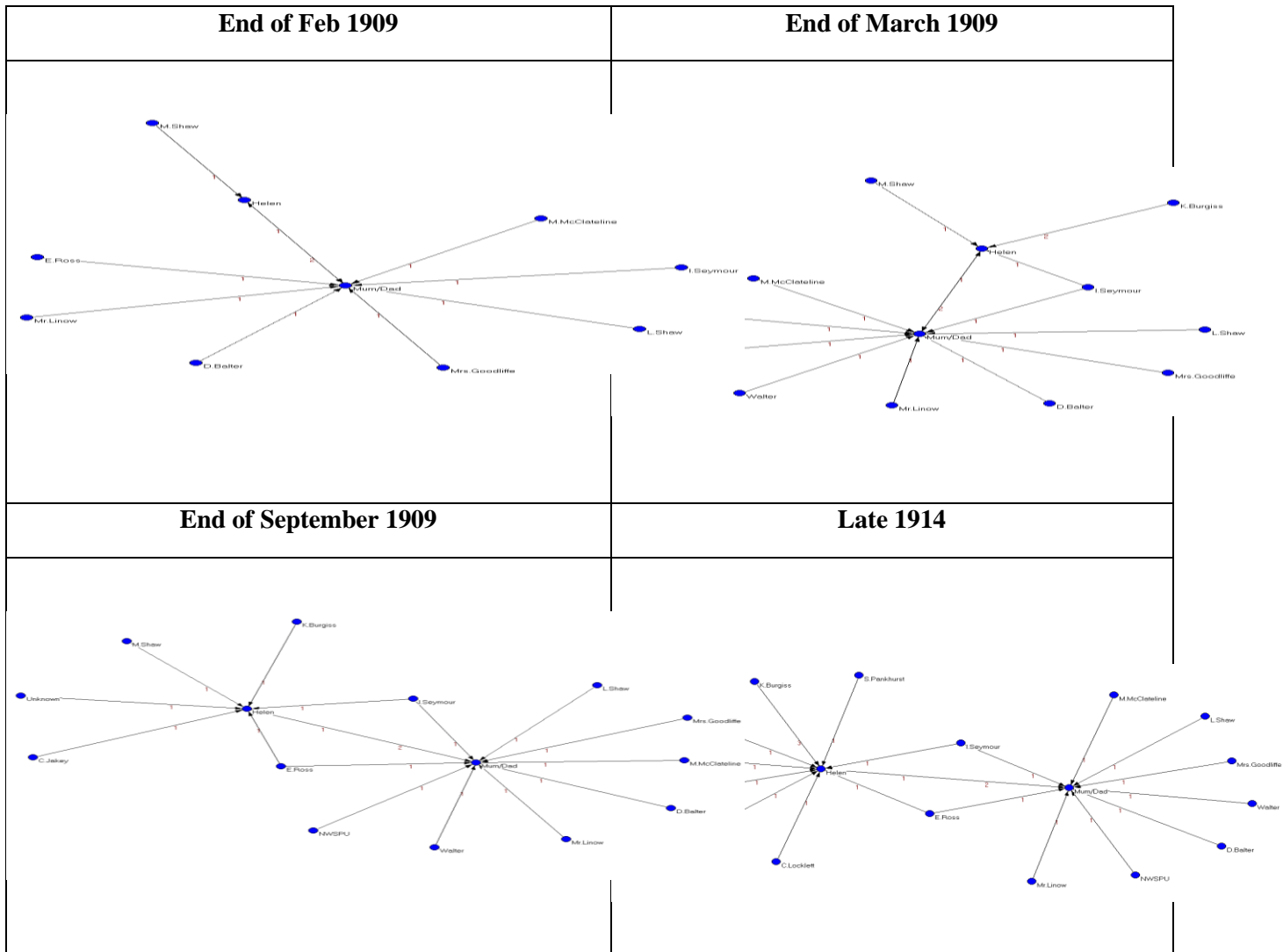
The original archive contained 23 letters (dated 1090-14) to Helen or her family concerning her activism and 8 of Helen's written speeches (dated 1909). It has subsequently been expanded, however, through inclusion of articles from the *Nottingham Evening News* and *Nottingham Guardian* (1908-11) reporting Helen's activism and suffragette activity in Nottingham more widely.

## **Analysis**

The archive contained a large amount of data relating to Helen's ties with other suffragists. This information was often submerged within letters and speeches. In order to extract it, and to gain a clearer picture of her activist network, we mapped Helen's ego-net in three stages, recording and visualising its basic structure at each stage by means of the (free-to-download)<sup>vii</sup> *Pajek* social network analysis software (on *Pajek* see de Nooy et. al 2005).

### *Stage One*

Stage one focused upon the letters in the archive. We mapped the network of direct correspondence between senders and receivers, noting who wrote to whom, when and with what frequency. Most of the letter-writing followed key events, in particular Helen's two periods of imprisonment. It is also possible, however, to see the development over time (1909-1914) of an activist letter writing circle involving Helen and other suffragettes. Some of these fellow activist writers (like C.Lockett and Nellie Crocker) were in prison themselves at the time of writing to Helen. Figure 1 shows the evolution of the letter writing network that formed around Helen's activism.

**Figure 1: the Evolution of the Letter Network**

From our preliminary qualitative reading of the letters we had formed an impression that Helen's parents were central players in the network generated by the letters. Many of the letters were written to them rather than Helen. Figure 1 allows us to sharpen up that impression. It shows that all ties centre upon one of two distinct 'vertices'<sup>viii</sup>. Helen and her parents. The network is 'duocentred' (on 'duocentred' networks see also Coromina et.al 2008).

We can add further precision still by measuring the 'centrality' of all vertices in the network and comparing Helen with her parents. Centrality within networks can be measured in various ways but the three most common measures are: 1) *degree centrality*, which counts the number of arcs or edges attached to each vertex (each vertex's 'degree'<sup>ix</sup>); 2) *closeness centrality*, which measures the cumulative distance<sup>x</sup> that each vertex has to travel to make contact with every other vertex in the network; and 3) *betweenness centrality*, which measures the extent to which each vertex lies in the paths connecting every other pair of vertices in the network, such that they have to go through it to 'make contact'.

Each of these measures potentially tells us something different. In our case, for example, degree centrality tells us how busy the various actors are, interacting and perhaps coordinating with others, and also their importance as actors that others feel the need to communicate with. Closeness centrality, by contrast, tells us something about the 'reach' of the various actors; how much effort each has to go to in order to get

information on what is happening in various parts of the network and how likely they are to get such information. Finally, betweenness centrality is a measure of the extent to which each actor mediates between the others, occupying the sometimes difficult (Crossley 2008b) but often advantageous position of the ‘broker’ (see below). We would ordinarily select one of these measures for our analysis, according to our purposes, but as our aim is to demonstrate and explore the methodological potential of network analysis we will briefly measure each.

If, for sake of ease, we bracket out the frequency of letters between parties, indicated by numbers at the side of the arcs, and also the direction of the contacts, focusing only upon the basic picture of who was in contact with whom, then Helen’s parents are only fractionally less central than Helen in this network by each of the three main measures: their degree is 8 compared to her 9; their closeness 0.7 compared to her 0.737; and their betweenness 0.609 compared to her 0.698. Moreover, if we focus only upon the letters of 1909, at the time of Helen’s imprisonment, then her parents are more central than her by each of these three measures. Their degree is 8 to her 7; their closeness is 0.750 to her 0.705; and their betweenness is 0.689 to her 0.583. If we account for direction, focusing upon all the letters, then both vertices are identical. They have the same ‘in-degree’<sup>xi</sup>, the same ‘out-degree’<sup>xii</sup>, the same (in-degree) closeness and the same betweenness.

Helen’s parents were as central as her within the letter network, therefore, in three key respects. They were as busy and accorded the same importance (degree centrality). They had the same reach (closeness centrality). And they were in a position to play a similar mediating or brokerage role. This latter observation was further supported when we examined ‘aggregate constraint’ (for the 1909 data). ‘Aggregate constraint’ measures the extent to which each possible pair of a given vertex’s ties are themselves tied. As such, it indicates the extent to which the vertex bridges so-called ‘structural holes’<sup>xiii</sup> in a network, a position which further enables brokerage (de Nooy et.al. 2005). Lower scores for ‘aggregate constraint’ indicate greater potential for brokerage and Helen’s parents had the lowest score in the network.

A brokerage position, spanning structural holes, is often deemed advantageous in network analysis (Burt 1992, 2005). Brokers control the flow of valued resources, including information, between parties and this makes others dependent upon them, generating a power imbalance in their favour. Furthermore, brokers are relatively free from the constraint (captured in ‘aggregate constraint’) which can arise when an actor’s alters are connected to one another. Connection between alters is said to generate constraint because it facilitates a more effective surveillance of the actor, increases the homogeneity of the expectations placed upon the actor (thereby narrowing the options open to the actor) and increases the likelihood of sanctions attaching to those expectations (as the costs of imposing sanctions can be shared and sanctioning itself can be more effectively enforced). Because their ties are not connected brokers escape this constraint. They have more ‘wriggle room’ in their relations and can even play their alters off against one another. Finally, brokers are in a position to take credit for and derive status from information and innovations which, in effect, they are only passing from one party to another.

These supposed advantages of the broker are not inevitable, however. To the contrary, bridging structural holes can entail mediating between hostile parties who make competing claims upon one’s loyalty (Crossley 2008b). It can be a difficult and unrewarding position. Just because Helen’s parents occupied a structural position wherein they bridged structural holes does not mean that they played a brokerage role or enjoyed any of the advantages of such a role. To find out if they did we need to switch our mode of analysis again, back from the quantitative/formal method of SNA to a more qualitative and content-focused approach.

A qualitative-thematic analysis revealed that those letters triggered directly by the imprisonments had one or both of two primary purposes; firstly, to request or give information (see Keck and Sikkink 1998 on ‘information politics’ in movements). Few people had known of Helen’s intention to partake in an action which she knew would get her arrested and most were inexperienced in such matters. They wanted to know *if*, and if so *how*, they could write to Helen. Helen’s parents, who hadn’t known her plans, were amongst those seeking such information but they were also a key target for other information seekers. From the letters it appears that this is one, if not *the* key reason why Helen’s parents enjoyed such a high (degree and betweenness) centrality in her egonet. Her imprisonment made her important but inaccessible. And those who wanted to communicate with or ask after her, on account of her importance, perceived her parents as the best point of contact. This constituted them as information brokers.

Furthermore Helen's parents come in for considerable praise in many of the letters. There are several reasons for this, including simply their association with a 'heroine'. At least some of the praise is attributable to their brokerage role, however. They were perceived to be 'part of the action' by some correspondents, at least in virtue of what they were assumed to know. They were 'players' and important as a consequence. Furthermore, as we discuss below, they became important to some of Helen's fellow activists because they were *the* link to her at a difficult and politically important time.

Our qualitative analysis of the letters confirms what our structural analysis might have led us to suspect, therefore. Helen's parents were brokers in the network and enjoyed the benefits sometimes attached to that position. Qualitative analysis revealed much more than that besides, however. It gave many detailed insights into the flurry of interaction that generated the network. To illustrate this we will consider what emerged as the second key purpose of many of the letters.

Many of the letters appeared to re-work identities and relations. This is assumedly common in all interactions but in this case it assumes special importance given the impact of Helen's actions. Three impacts are particularly evident from the letters. Firstly, Helen had 'come out', very publicly, as a militant suffragette and had declared this on the public stage. She had acquired a new identity. She was no longer the 'self' that her family, friends and acquaintances had previously assumed her to be. Moreover, she had kept an important secret from them which, *qua* secret, potentially distanced her from them (on secrets in relationships see Simmel 1906). Thus we find her apologising to her parents for not telling them of her intended action and its likely consequence (i.e. imprisonment):

I'm afraid it will be a great shock to you to see my name in the paper as taking part in the WSPU deputation to the House of Commons this evening .... (Letter from Helen to her parents, dated 24<sup>th</sup> Feb 1909 )

We find her mum apologising to her for not having realised how seriously she took her political project:

I am only very, very sorry that you should have suffered so much quietly for so long. I wish you had told me about it – long ago. (Mother to Helen, dated 25<sup>th</sup> Feb 1909)

And we find most other authors positioning their selves in relation to her new identity. All of the letters are supportive but where some authors declare themselves fellow suffragettes others are clear to admire only that she had the courage to do what she (but perhaps not they) thought was right:

Of course father and I are proud of your being so brave for what you thought was right (Mother to Helen, dated 25<sup>th</sup> Feb 1909)

I do not pretend even to begin to understand the intricacies of political feelings and tendencies in England, nor to fathom the depths of the minds of English women... If they are sure they are doing right, then it is right they should do as they do (Helen's Uncle Walter to her Mother, dated 2<sup>nd</sup> March 1909, his emphasis)

Secondly, she had aligned herself with a controversial social movement and had broken the law. In the eyes of some, her new identity was 'spoiled' (Goffman 1968) and this could have consequences for both her and those closely tied to her, not least her parents. This prompted various attempts to minimise or repair the potential damage and, more generally, to offer support. Interestingly, though perhaps not surprisingly, it is Helen's parents that are offered much of the support in this respect, a fact which further explains their centrality. They became central in the network, in each of the above senses, because others contacted them to offer their support. Clearly many felt that it was they, as much as she, who needed support. Or they recognised that they could only support Helen indirectly by supporting and keeping 'on side' those who were in a position to support her more directly (i.e. her parents). Helen's parents had to be strong for her and had to view her actions positively if they were to offer the 'right' support. And Helen's fellow suffragettes evidently felt that they could help her by positively framing events for her parents and reinforcing their support (for her)

and positivity. London-based suffragist, Estelle Ross, for example, writes to Helen's mum to tell her that she would gain more friends than she would lose by her action:

If by any misunderstanding prejudice she loses a few friends through her action she has made many to replace them, and among them myself, my sister and some of our suffragist comrades, who knew what she was going through and how only the strongest sense of duty helped her to face the ordeal (Estelle Ross to Helen's Mother, dated 26<sup>th</sup> Feb 1909)

Moreover, several members of the local WSPU wrote to Helen's parents at the time of her arrest in February 1909, offering their support and congratulations:

Congratulations on the extreme pride you must feel in your brave girl to so face the 'unknown' for the women's Cause. I do admire Miss Watts so much and feel sure you who have watched the strong character developing must rejoice. (Letter from Mrs Goodliffe to Helen's Mother, dated 25<sup>th</sup> Feb 1909)

I hope her example may encourage others of her Union here in Nottingham to demonstrate their faith in the same and other ways. We all think it very fine of her and I am sure you must both be very proud of her as we are. (Letter from Leonora Shaw to Helen parents, dated 27<sup>th</sup> Feb 1909)

Helen recognised the role that local activist letter writing played in this respect, in one of her speeches:

I am grateful in a very special way to those who by letter and by word of mouth cheered my Mother and Father through an exceedingly trying time: I know that your sympathy was a very great comfort and help to them (speech dated March 1909)

Thirdly, Helen was in an unfamiliar and dangerous place, sequestered from her network and with few opportunities for communication. Those who cared for her could only imagine what was happening to her and there was little feedback or basic information to tame their worst fears. The intersubjective fabric of the relationship, ordinarily nourished through contact, communication and familiarity, was distorted. Some of the letters orient to this distortion, seeking variously to communicate their worst fears or to allay the fears of others. Thus, in a letter to Helen, her mother asks:

And what are you going through now I wonder! Is your room - I cannot say cell - very very cold? What kind of food have you to eat? I am longing to know more (Mother to Helen, 25<sup>th</sup> Feb 1909).

And, perhaps anticipating his sister's response, Helen's uncle seeks to comfort her mother by imagining that things won't be too bad in prison:

She won't have exactly 'a good time' but I think she is sure to be looked after and there is little to be anxious about on the score of her health. Then, the satisfaction of 'having done it' and become a martyr in the cause cannot fail to keep her spirits and inspire her to resignation to the change in environment. For, of course she acted in a full sense of duty and sacrifice, which brings rewards as genuine as the sincerity which promoted the action' (mother's brother (Walter) to mother, dated 2 March 1909)

Of course absence of information was mutual. Helen did not know what reaction her imprisonment had caused back at home nor what those in her network were doing on her behalf. And her friends knew that she did not know this and that she might therefore be feeling abandoned and alienated from the wider significance of her act. Many of the letters seek to fill in details for her, allowing her access to aspects of her story that she would otherwise have been denied. An interesting, if somewhat untypical example of this comes from Kay Burgis, the secretary of the Nottingham WSPU at the time of Helen's first imprisonment and one of the few people to know in advance that she was planning to take part in the deputation. Having travelled to Leicester to support Helen on her second illegal action, but then failed to meet up, she seeks to repair any damage this might have caused to their relationship by offering her story of events. She re-stories and re-pairs their relationship:

.....I had rushed off the wrong place and never saw you at all after the trial. When we turned back to the Police Station you were gone and then I learned that you had sent for me. ... (Kay Burgis to Helen, her emphasis. Letter undated but seemingly sent during Helen's second prison sentence)

We could pursue this analysis of the letters in much greater depth. It must suffice for present purposes, however, to draw three brief conclusions before moving on to the next stage of our analysis. Firstly, we have indicated how qualitative and quantitative analysis can be used together in a productive analysis. We used network mapping and measures to draw out, test and clarify a qualitative hunch regarding the centrality of Helen's parents in her ego net and we then returned to the qualitative detail to seek to put explanatory meat on the structural skeleton this unearthed.

Secondly, we have shown how networks are activated and also reshaped by activism. Helen's imprisonment caused some who didn't know her to seek to make contact; others who did know her to seek to renew and/or renegotiate their ties; and many to reroute their communication with her through her parents, affording them a priority they would not otherwise have experienced. It is perhaps obvious that prison will have effects upon social networks but we believe that this signals an issue not yet sufficiently explored in the social movement literature; namely, that activism has an effect upon networks and does not simply draw upon them as a precondition or resource (see also Takács et.al 2008).

Finally, our analysis has demonstrated the importance of kinship networks in relation to activism. Or more precisely, since the importance of families is widely acknowledged, we have shown that and how the family unit can become structurally central during activism and can be oriented to as such both by activists and those with direct ties to the family. The family is not simply a support structure but a structure which activists, recognising its role, seek further to support – a supported support structure. In a manner nicely suggestive of networks, activists support the (family) actors who, in turn, support their fellow activist.

### *Stage Two*

The network comprising senders and recipients of letters is only one of a number that can be derived from the Helen Watts' archive. By way of a content analysis of the 23 letters we were able to map another, larger ego-net. The letters supplied data about who knew whom, not only on the basis of the relationships formed through letter writing but on the basis of 'who mentions whom' as a mutual friend/acquaintance. On many occasions, for example, people expressed their relationships with other activists in the course of letter writing; they 'talked their ties'. This was sometimes part of the course of describing events and making them more meaningful for the addressee:

Mrs Pankhurst, Mrs Tuke, Jessie Kenney, and Miss Seymour and others have been round beaming at us all through the hole in the door, and making us all feel puffed up. Soon they are going to bring us a grand lunch. I am getting hungry! Miss Davies Colley is an awfully nice girl - and two or three others too, that I have been chumming up with. Kate Walsh was my partner in the deputation, Miss Fahey has been staying at 36 Westminster Mansions. She walked home with me last night, and called for me this morning to go to Bow St. (Letter from Helen Watts to her Parents, dated 24<sup>th</sup> Feb 1909).

We have Mrs P. here with us. Mrs Smythe and Miss Garrett Anderson are about 60 (Letter from Nellie Crocker to Helen Watts, writing from prison, dated 23rd March 1912).

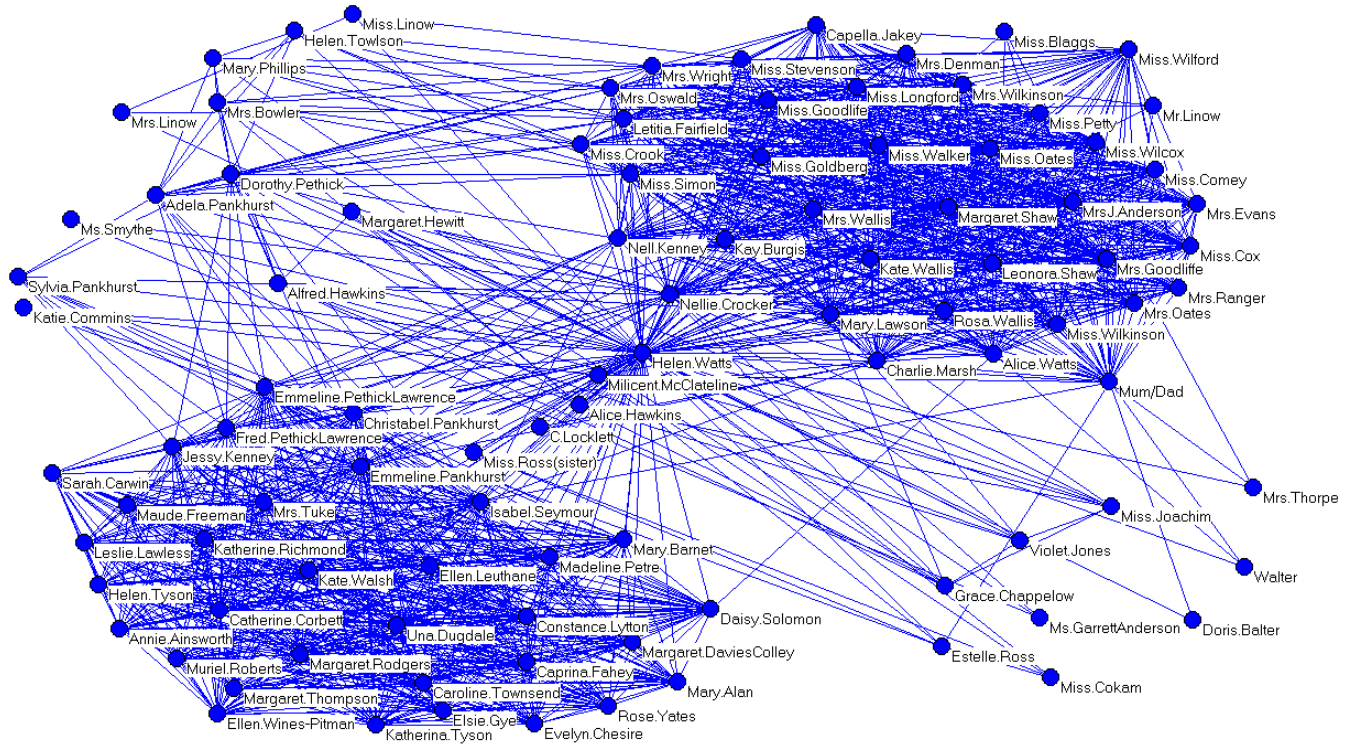
'Talking ties' also resulted when writers made an effort to position themselves in relation to the recipient of their letter. This happened particularly in letters from activists to Helen's parents, where they did not directly know the parents and sought to justify their approach on the basis of mutual ties:

I feel I must write and congratulate you on the bravery of your daughter Helen. I met her with Miss Commins first at the house of my friend Miss Ross... I do hope you will forgive me writing



Nottingham WSPU meetings at which she spoke. Pulling these data together it was possible to produce a much bigger picture of the ego-net of contacts surrounding Helen (qua activist). Although there will inevitably be gaps in this picture, due to the nature of archival and historical data, figure 3 is a representation of the network as revealed in the archive.

**Figure 3: Ties deducible from archival and historical data**



Given the size of this network it is necessary, if only for descriptive purposes, to use quantitative measures. Before we attempt this, however, it would be useful to reflect briefly upon the qualitative insights that can be deduced from the archive material from which it was extrapolated. As we will see, much of what can be discerned appears to support the literature on the significance of networks for activism that we discussed at the outset of this paper.

It is clear from the material both that Helen's activist career was shaped by her network and that she, in turn, shaped the activism of others. We see this, firstly, in relation to her family contacts. She talks in one of her speeches, for example, of the significance of her father as a source of inspiration. Her father, who later became an active supporter of the non-militant National Union of Women's Suffrage Societies (NUWSS) in Nottingham, she notes, taught her by his example to fight for and remain true to her convictions: 'it would have been a shame indeed if my father's daughter, when her chance came, had not accepted the great honour of standing by her guns and fighting for her convictions' (speech dated 18<sup>th</sup> May 1909). And from her own side, Helen sought to bring her younger sisters into the suffrage movement. Through her involvement in the campaign, Helen sought to raise the awareness of her younger sisters, telling her mother in a letter from prison that, 'I have ordered 'V. for W.' [the WSPU magazine] to be sent to Alice and Ethel every week till I come out', (letter to parents 25<sup>th</sup> Feb 1909). In time Alice became a member of the Nottingham WSPU. The Watts family network was, in this respect, a site of politicisation and recruitment – an observation which supports our earlier point, as well as the wider literature, regarding the importance of family networks in relation to activism.

Relations with other activists in the WSPU, both national and local, were important too. Whitmore, who has written about Helen Watts in a study of Alice Hawkins (Whitmore 2007), the working class Leicester suffragette she was imprisoned with in September 1909, argues that Helen's conversion to militancy was 'a direct result of her association with other Suffragettes' (Whitmore 1996). Our own research supports this. In 1907, when Helen first joined the WSPU, she recalls how she was opposed to the use of militant tactics. On hearing of the arrest of Mrs Pethick Lawrence she thought her a 'terrible woman'. Over a period of two years in the movement, however, she changed her mind, saying that 'had anyone told me that next time that 'terrible woman' went to prison, I would accompany her, it would have seemed to me an utterly impossible and absurd idea' (speech dated March 1909).

Three figures were particularly important in Helen's radicalisation. Firstly, there was Nell Kenny, a national WSPU organiser. Nell Kenny went to Nottingham to assist the WSPU in 1908 and Helen helped her on several open air meetings in nearby market places. Helen described Nell Kenny as an inspiration: 'a real spiritual force in this town', adding that 'many of us owe more than we can say to Miss Nell Kenney's stay in Nottingham...the movement became holier and greater than before' (speech dated March 1909). Nell Kenney offered a positive militant role model for Helen and served as a conduit through which the activist culture of the national suffragette movement could find its way to Nottingham.

Secondly, there was Kay Burgis, the secretary of the Nottingham branch of the WSPU in 1909 when Helen served her first prison sentence. Helen's relationship with Kay Burgis during the time leading up to the Caxton Hall deputation was particularly important: 'Miss Burgis was the only one of you that knew my intention: and I can never say what she has been to me. She was a tower of strength all through, and I can't imagine how I would have got on without her' (speech dated March 1909). The nature of public speeches does lend itself to this kind of 'effusing' about fellow activists but it is also evident from the letters from Key Burgis to Helen that their relationship was intimate and involved strong mutual support.

Thirdly, there was Nellie Crocker, cousin of Emmeline Pethick Lawrence (a key leading figure of the WSPU). Nellie Crocker took over from Kay Burgis as Nottingham Secretary in 1909, and went to prison with Helen in September 1909. Nellie Crocker was arrested in 1912 on a raid at the WSPU headquarters in London (spurring Christabel Pankhurst's flight abroad), and writes to Helen from prison, 'I often think of you - all the brave pioneers I know and know that you and they were the Comrades. It is comparatively easy now' (letter to Helen, dated 23<sup>rd</sup> March 1912). If Helen inspired Nellie Crocker, as this suggests, there is good reason to think that the influence was reciprocal. As noted, Crocker had wider movement connections and was a key player in the actions which led to Helen's second imprisonment in September 1909. On this occasion Helen broke a window in her cell as a protest against being denied political prisoner status. She was moved to a punishment cell. Here her motivation was sustained by Nellie Crocker's prior actions:

Even punishment had its consolations. When I was left alone in the other cell, I noticed some half-obliterated chalk marks on the wall and floor, and looking at them more closely I read 'Votes for Women'. Miss Crocker had occupied that cell for the first few hours of imprisonment and had left behind her traces' (speech 17<sup>th</sup> September 1909).

Beyond specific individuals, it is also evident that the members of the Nottingham WSPU, functioning as a 'generalised other' (Mead 1967), exerted some pressure on Helen, not only to adopt militant tactics but to be the person in their number to do so. Addressing her fellow activists in Nottingham, Helen writes:

Friends, many of you have made me feel ashamed of myself in the past of my half-hearted support of our splendid ideals and principles: and I would have felt it a life-long disgrace had I let my chance of taking part in the militant action of the Union slip past me - knowing as I did, how many of you would have almost given your right hands to be in my position (Speech, March 1909).

Here Helen shows an acute awareness of the fact that she, more than most of the local women, was 'structurally available' for militant activism. Others had ties which limited their involvement. Local member, Mrs Goodliffe, for example, explains to Helen's mother on the occasion of Helen's first imprisonment: 'forgive my intrusion, I am so strongly in sympathy that were it not for my helpless babies I should have done

more active work long since' (letter dated 25<sup>th</sup> Feb 1909). In turn, however, Helen describes the network of local WSPU members as a great source of strength and support for her activism: 'Friends, I cannot tell you what a help your loyalty and enthusiasm were to me...sources of inspiration and strength for which I can never thank you enough' (speech, March 1909). She goes on to state that 'I am a part of all that I have met' and talks of how 'this lovely sense of companionship never really left me. I knew – because I know you so well – that some of you would be thinking of me everyday'. As such, Helen saw her actions as belonging to all the members of the local WSPU network. She did not see herself as having acted alone or for herself primarily, but as a representative of this section of her network. The strength of her feeling in this respect surprised some of the local members:

One of the first things I did when I got back to Nottingham after my month in Holloway was to thank the local WSPU members very much for having sent me there. They expressed surprise. 'But we knew nothing about it until you had gone', they said, 'we had nothing to do with it', I told them, 'it was your unconscious influence, your earnestness and enthusiasm, that made me go...I would have been a poor little coward I am afraid, going just for myself (speech dated 18<sup>th</sup> May 1909).

As in the case of her family, however, we find evidence that this influence was reciprocal, with Helen acting as a positive activist role model for other members of the local WSPU and attracting a degree of admiration:

I hope her example may encourage others of her Union here in Nottingham to demonstrate their faith in the same and other ways. We all think it very fine of her (letter from Notts WSPU member Leonora Shaw to Helen's Parents, dated 27<sup>th</sup> Feb 1909).

I merely write these few words to thank you for the valiant work you undertook for us all...I simply just had to say something tremendous but can't...I can only from the bottom of my heart say 'thank you' (letter from Notts WSPU member Capella Jakey to Helen, 17<sup>th</sup> September 1909).

Alongside her family and fellow WSPU activists, the fellow activists she was imprisoned with (and some she met inside) were key contacts for Helen (on prison relations see Purvis 1995). She notes, for example, that:

It is hardly possible for those who have not had the experience to quite understand the sort of feeling that Suffragists who have been in prison together have for one another... and I understood a little better than before what the word comrade might mean (speech to the Nottingham NUWSS, 1909).

The special relationship of those who had been imprisoned is apparent in the letters. Both of the letters in the archive, to Helen from others in prison, adopt a 'tone' quite distinct from the other letters and convey an *esprit de corps* between those 'in the know'. It is difficult to pin down exactly what defines this 'tone', at least if we are to remain brief. It must suffice to say that the letters are much less formal, more 'chummy' and tend to allude to shared experiences (of both prison and protest) and reference points not referred to in other letters.

From this qualitative analysis we derive a sense of the various, densely networked social circles (family, the WSPU and the two activist/prison cohorts) within which Helen's activist career and identity took shape. Moreover, we acquire a sense of the individuals who were influential upon her. These insights beg questions, however, that cannot be answered by qualitative means alone: namely, 1) do the (qualitatively) important individuals occupy distinctive positions in the network? 2) Is the network cohesive? 3) Are the different social circles that have been identified distinct, only intersecting, as Simmel (1964) would have it, via Helen, or do they overlap and intersect independently of her. Indeed, 4) are they distinct social circles at all in network terms or are they just different identities/categories in one big social circle? In other words, do the various category divisions of contacts (e.g. family, local WSPU, fellow prisoners etc.) that we can deduce from the qualitative material actually form distinct clusters within her network?

These questions are important in relation to an understanding of Helen's activism. They require us to further explore the structural conditions in which her activism took shape. Note in particular that our third question, regarding the intersection of social circles, returns us to the questions of brokerage and constraint that we addressed in relation to Helen's parents in section one of our analysis. Helen is at the centre of her own ego-net, of course, and an analysis of her centrality, as measured earlier, is therefore redundant. In asking whether

the qualitatively distinct social circles that Helen belongs to are structurally distinguishable (in network terms) and/or whether they are interconnected, however, we are asking again whether she enjoys a position of brokerage in relation to them and how much constraint they are likely to impose upon her.

The questions are also important because they tell us something about the structure of suffragette networks more widely. Helen can serve as a point of access to the wider activist network to which she belonged and can allow us to form an impression of the cohesion of that network –albeit an impression perhaps biased towards cohesion since it forms in relation to the ego-net of a single individual, an individual whose connection to each might, as arguments on ‘transitivity’<sup>xiv</sup> suggest, have increased their chances of meeting one another.

We do not have the space to conduct a full analysis of (structurally) influential players in Helen’s network here. However, for illustrative purposes we will focus upon one measure of importance (degree centrality), comparing the information we glean from this with our qualitative observations (above) reading the special importance of Nellie Crocker, Kay Burgis and Nell Kenny. Degree centrality is important in this context because it indicates which amongst Helen’s contacts enjoyed a high level of connection with her other contacts, such that they could, for example, mobilize these contacts in any attempt either to help or influence her.

The mean degree for the network was 29.08, suggesting that most people in the network enjoy contact with 29 others. The standard deviation is high (15.431), however, indicating that many scores are either much higher or much lower than this mean. In fact, the range runs from 2 to 97 or, if we discount Helen herself, to 59. But over 75% of the vertices in the network enjoy a degree greater than 10. The three highest scorers, apart from Helen herself, are: Nellie Crocker (59), Mary Lawson – a fellow Leicester prisoner and Nottingham WSPU member (44), and Nell Kenny (43). Note that two of these figures, Crocker and Kenny, were also identified as key contacts in our qualitative analysis. This is significant because it suggests that the influence of Kenny and Crocker, as suggested in our qualitative analysis, was reflected in their network position. We should also note, however, that this is not true of Kay Burgis. Her degree is only 11. This illustrates that there are different ways of being influential or important in another’s ego-net which do not necessarily correspond. Kay Burgis meant a great deal to Helen and no doubt influenced her as a consequence but she did not occupy an influential position in Helen’s wider activist network. One advantage of a mixed methods approach is that it allows us to tease out these important differences.

There are various ways of assessing cohesion in the network. In the first instance we can measure its density; that is, the proportion of actual ties in the network to potential ties. The density of this network is 0.3, indicating that 30% of all possible ties in the network are present. It is difficult, for various reasons, to assess whether density scores are high or low in any absolute sense. However, this figure at least indicates that most people in Helen’s network did not know most of the others. This would seem to suggest that constraint was relatively low and that Helen had reasonable room for manoeuvre. There are gaps within her network which would have afforded her ‘wriggle room’. This is also reflected in her ‘aggregate constraint’ score for this network. She scores 0.047, suggesting that her network is 5% as ‘constraining’ as it could be.

Though useful, density scores reduce integration within a network to a single figure, failing to capture the uneven dispersion of dense patches within a network. There are various ways to correct for this; different ways of defining and identifying dense patches within a network. The most useful/appropriate measure in our case is the ‘k-core’. K-cores are sub-networks within a network, all of whose members are tied to a specific number (‘k’) of the others. There may be a sub-set of 15 vertices in a network, for example, all of whom are linked to at least 10 of the others. In this case we would say that have a 10-core of size n=15. The *Pajek* software that we have used detects the core memberships of every vertex and reports the largest core to which each belongs. Using this routine we were able to establish that over 75% of the actors in Helen’s network belong to a core of 10 or more others, 38% belonging to a core of 32 or more and only 10.2% belonging to a core smaller than 4. This supports the notion that Helen’s ego-net involves ties not simply to individual others but rather to cohesive clusters of others, or ‘social circles’, and it suggests that most of her contacts were also contacts to at least some (10 or more) of the others. This indicates rather more cohesion than we might be inclined to assume on the basis of the density score – though, of course, it leaves open the possibility that different cores are not connected to one another, except via Helen.

Density and cores offer us a general picture of the level of cohesion in Helen's ego-net. They do not yet tell us how integrated her various social circles were, however. As a preliminary step to finding this out we can consider what the network looks like if we remove Helen from it. Does it fragment into multiple (unconnected) 'components'<sup>xv</sup>? Interestingly, given that this is an ego-net, it doesn't. It remains a single, fully connected component. Moreover, its density only drops slightly (to 0.29). This suggests that our attempt to explore the further reaches of 'Helen's network' have brought us to a point where it is no longer strictly 'her's' but is rather a network to which she belongs. Her network has a life and coherence independently of her. Moreover, it indicates that the circles within her ego-net are not distinct.

The only key sociometric property that changes significantly when Helen is removed is diameter; that is, the shortest 'path' of connections between the two most distant vertices. When Helen is included in the network she is a common link between everybody in it, such that even those not directly linked to one another are linked by a path of only 2 ties ('degrees'); that is, their tie to Helen and her tie to the other. This means that nobody in the network has further than 2 degrees to 'travel' in order to contact anybody else and the diameter of the network is therefore 2. Without Helen, however, certain network chains lengthen, the longest extending to 4 degrees. This suggests that information will, at the very least, spread much more slowly and be more prone to distortion through 'Chinese whispers' if not mediated directly by Helen. And this in turn points to a measure of autonomy and power for her. Even if Helen is not a necessary intermediary for moving information through 'her' network she certainly has the potential to increase the speed and accuracy of the traffic.

The most obvious way to extend this, determining more clearly whether Helen's social circles are structurally distant and/or connected is by way of a blockmodel. To blockmodel is to cluster vertices within a network according to a given criteria, usually the similarity in their profile of ties (their 'structural equivalence'), and then to study the relations between the clusters (or 'blocks'), effectively constructing a higher order but smaller and more manageable network. The rationale for blockmodelling is usually that it affords information on roles within networks (although it is commonly recognized that this claim is problematic (Scott 2000, Wasserman and Faust 1994, de Nooy et.al 2005). Roles are effectively redefined as structurally equivalent positions within networks and mapping their connection is therefore said to illuminate the social structure or system embodied in the network. The logic of the techniques involved in blockmodelling is no less conducive to the identification of social circles and their interconnection in our view, however, and in what follows we seek to explore this possibility.

To construct a blockmodel we first performed a hierarchical cluster analysis on our data matrix (on cluster analysis in blockmodelling see Wasserman and Faust 1994). Consultation of the dendrogram suggested a 10 'block' solution, the details of which are given in Figure 4.

**Figure 4: Block Profiles**

Block Number	Block Size	Description	Internal Density
1	1	Helen Watts.	-
2	15	Assorted but most in contact with family ( <i>Girls Realm Guild</i> , Nottingham activists, London contacts, family friends).	0.13
3	35	Nottingham WSPU activists	0.99
4	33	Activists involved in Helen's first deputation/imprisonment.	0.99
5	1	Sylvia Pankhurst.	-
6	1	Nellie Crocker.	-
7	6	Activists involved in the Leicester protest.	1.00
8	1	Helen's parents.	-
9	2	Activists involved in Leicester protest.	1.00
10	3	Activists involved in the Leicester protest.	1.00

Hierarchical cluster analysis of a network (adjacency) matrix groups vertices on the basis of the similarity in their profile of connections to others ('structural equivalence'). As vertices may share a similar profile of connections without actually being connected to one another it is possible that the internal density of the identified blocks will be low. Blocks are not necessarily integrated and cohesive groupings. In the case of Helen's network, however, all but one of the identified blocks containing more than one person are either maximally dense or very close to being so. In this case then, with one exception, the clustering procedure has identified cohesive sub-networks within the network. Density scores are given in Figure 4.

Having identified the blocks we determined who was in each block in an effort to interpret them. Four of the blocks contain single individuals. The first of these is Helen herself, which was inevitable given that she is in the peculiar position of being tied to everybody else in the network. Sylvia Pankhurst was a separate block, in consequence of the fact that she had ties to a number of other key activists, including her sisters and mother, but wasn't directly involved in the activities that tied these other activists to a much larger grouping (in this case). Nellie Crocker was a separate block because she had links both to the Nottingham WSPU and to Helen's co-participants in the Leicester action (which Crocker took part in), whilst the others who were involved in either of these contexts were only involved in one of them. Finally, Helen's parents were a distinct block, assumedly on account of the unique brokerage position they occupied and which we discussed earlier.

The largest block identified, Block 3 (n=35), fairly straightforwardly represents members of the Nottingham WSPU, most of whom were involved in the 'welcome home' activities following Helen's first imprisonment. The second largest, Block 4 (n=33), contains those activists involved in Helen's first deputation, most of whom were imprisoned with her. The third largest block, Block 2 (n=15), is the block identified above as being low in density. This block contains: family friends; members of the *Girl's Realm Guild*, to which Helen belonged; certain Nottingham activists; and the women with whom Helen stayed prior to her London action. What seems to distinguish most (but not all) members of this block, and thus explain their clustering, is their contact with Helen's parents (generally by letter). The remaining three blocks, Block 7 (n=6), Block 9 (n=2) and Block 10 (n=3) all involve activists involved in Helen's second major protest/period of imprisonment.

It is apparent, we hope, that this blockmodel maps onto certain of the distinct social circles identified in our qualitative analysis. Although the fit is not perfect the two forms of analysis agree to some extent in partitioning the network. The different categories identified qualitatively correspond to some extent to the structural blocks identified by a cluster analysis of the adjacency matrix. We already know that these circles intersect by means of Helen. To reiterate, however, we want to establish how far they integrate independently of her.

Having identified these 10 blocks and measured their own internal density (Figure 4) we considered the links between them. The blocks are linked, where they are, by way of the links between their members. It is usual in blockmodelling to use a threshold value in deciding whether or not to count blocks as linked (Wasserman and Faust 1994). Usually this value will be a proportion of the number of ties possible between blocks (i.e. a density value) (ibid.). We elected to work with two models. Firstly, we counted blocks as tied if there were any connections across them at all. Secondly, we deployed a 10% threshold, only counting blocks as connected where the density of their tie was  $>0.10$ . The figures are provided in matrix form in Figure 5. The matrix gives the absolute values for number of ties across blocks and then, in parentheses, the proportion of possible number of ties this represents. Where no tie at all exists, the cell is shaded green. Where ties are present but their density is  $<0.10$  the cell is shaded purple. Where tie density is  $>0.10$  the cell is shaded yellow.

It is apparent from this table that there are a great many ties between the blocks and that most have a density  $>0.10$ . In fact, if we take any level of connection as our threshold, the density of the model as a whole is 0.733, indicating that 73% of all possible ties across blocks are present. Moreover, every block belongs to a core  $>5$ , except for Block 10, which belongs to a core of 4. Finally, every block has a degree of 4 or above, with the average being 6.6. These figures drop if we exclude those connections with a density  $<0.10$  but not by a large amount. Density drops to 0.644. Average degree drops to 5.8. And all blocks belong to a core of size 4. Still, however, the cohesion of the overall network is high.

**Figure 5: Block Interconnections**

	1	2	3	4	5	6	7	8	9	10
1	-	15 (1)	35 (1)	33 (1)	1 (1)	1 (1)	6 (1)	1 (1)	2 (1)	3 (1)
2		-	6 (0.01)	0	15 (1)	2 (0.13)	0	7 (0.47)	0	0
3			-	10 (0.0008)	35 (1)	35 (1)	6 (0.03)	30 (0.86)	11 (0.16)	15 (0.14)
4				-	26 (0.79)	7 (0.21)	0	1 (0.03)	11 (0.17)	0
5					-	1 (1)	6 (1)	0	2 (1)	0
6						-	6 (1)	1 (1)	2 (1)	0
7							-	0	2 (0.17)	2 (0.11)
8								-	0	0
9									-	6 (1)
10										-

In response to our own earlier questions, therefore, it would seem that the different circles implicated in Helen's activism, whilst distinguishable in many cases on the basis of their pattern of ties, are closely interwoven. The implications of this are, firstly, that the suffragette movement as a whole, whilst it consisted of multiple social circles, nevertheless appears to have been highly integrated as a network. Secondly, it suggests, somewhat at variance with Simmel (1964), that the social circles in which an individual moves, at least insofar as they are united by a single theme, such as activism, will tend to overlap independently of any one actor. Thirdly, this suggests that activists such as Helen, even when they operate across different social circles, have relatively little structural opportunity for brokerage and might be subject to the constraint that results from closure within the network spanning their various social circles.

## Conclusion

In a speech in March 1909 Helen Watts told her audience (quoting Emerson): ‘I am a part of all I have met’. In this paper we have attempted to identify some of those whom she met and to trace the network of which she was a part. Our analysis confirms her claim at least insofar as it suggests that her actions were supported and shaped, in various ways, by her network. Helen received support from and was influenced by both her family and various circles and individuals within the wider suffragette movement, and particularly within the WSPU. Our analysis also establishes, however, that these were not independent sources of influence. We have been able to confirm both that these ‘blocks’ (or circles) within Helen’s ego-net interpenetrate and, in the case of her family at least, that they are supported in their supporting role by other blocks and actors in the wider network. On this substantive level our paper both confirms and, we believe, extends and deepens the findings of the emerging literature on movement networks reviewed at the outset of this paper.

In addition, the paper has established that the importance attributed to networks in the social movements literature applies and is further confirmed in relation to the suffragettes. Moreover, the paper has begun to explore ways in which suffragette networks might be accessed and analysed.

Beyond this substantive level, we have also attempted to explore the possibility for integrating qualitative and quantitative methods in network research. Again we believe that the paper has succeeded in this respect. In ‘stage one’ of our analysis, for example, we were able, firstly, to use quantitative methods to sharpen and make more precise a vague qualitative impression regarding the centrality of Helen’s parents within ‘her’ ego-net, and then secondly, to use qualitative methods to explore questions raised by this quantitative pattern. Then, in ‘stage three’, we were able to use quantitative methods to further explore a question raised by our qualitative analysis. Finally, in all stages, we were able to derive quantitative data (adjacency matrices and blockmodels) from a ‘naturally occurring’ and open ended archival source which we simultaneously analysed by qualitative means.

As noted in the introduction, this paper was just a pilot exercise. Our plan is to replicate this type of analysis on a much larger scale, focusing not upon the ego-net of an individual suffragette but rather on the available archival material for the suffragette movement as a whole. We believe on the basis of our pilot work that this wider project is feasible and could yield many further important insights into the importance of networks within social movements.

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<sup>i</sup> An ego-net is a network mapped around and centred upon a specific individual. In most cases all nodes in the network are linked to that individual. This contrasts with a 'complete network' which focuses upon ties within a specific population.

<sup>ii</sup> Catnets entail that a set of actors are both closely networked and also share a common identity (identify with a common social category) (White 1992, 2008). White envisages that this might happen when close ties give rise to a shared identity or when a shared identity/category tends to drive actors into clos(er) association, where they form bonds and build networks.

<sup>iii</sup> This is a difficult concept to define briefly. Suffice it to say that 'prominence' entails being both central in a network and linked to others who are also central. On measures of 'centrality' see notes 5, 7, 8 and 9 below.

