A 'Different Class'?: Homophily and Heterophily in the Social Class Networks of Britpop

Abstract

Social network analysis is increasingly recognised as a useful way to explore music scenes. In this article we examine the individuals who were the cultural workforce that comprised the 'Britpop' music scene of the 1990s. The focus of our analysis is homophily and heterophily to determine whether the clusters of friendships and working relationships of those who were 'best connected' in the scene were patterned by original social class position. We find that Britpop's 'whole network' is heterophilic but its 'sub-networks' are more likely to be social class homophilic. The sub-networks that remain heterophilic are likely to be united by other common experiences that brought individuals in the network to the same social spaces. We suggest that our findings on Britpop might be generalised to the composition of other music scenes, cultural workforces and aggregations of young people. Our study differs from research on, first, British 'indie music' and social class which focusses upon the construction, representation and performance of social location rather than the relationships it might shape (such as Wiseman-Trowse, 2008) and second, the pioneering social network analyses of music scenes (such as Crossley 2008; 2009; 2015; Crossley et. al 2014) which currently lacks the explicit emphasis on social class.

Keywords:

Social network analysis; social class; music scene; 'Britpop'; homophily; heterophily; popular music, cultural production; friendship; place.

A 'Different Class'?: Homophily and Heterophily in the Social Class Networks of Britpop

Introduction

Britpop was an 'indie' music scene that broke into the mainstream ascendency in the mid-1990s (Bennett and Stratton 2010; Petridis 2014). Britpop bands, including Blur, Oasis, Pulp, Suede, Elastica and Menswear, shared the common characteristics of referring to British places and culture in their songs and singing in regional British accents (Harris 2010; Miles 1998). This article's title borrows from Pulp's best-selling album 'Different Class' that was released in October 1995: both the record and the people related to the group were broadly considered to be central to the scene (Hatterley 2011). At the time Different Class was released, journalist John Mulvey described the album as 'a memoir of the tense and skint [financially poor] years' set against 'simple revenge on some Year in Provence-toting prick' (28 October 1995, p. 52), in the prominent British weekly music magazine *The New Musical* Express (NME). The theme of performance and representation of social class featured prominently in the finite amount of research on the Britpop music scene (Hawkins 2010; Jones 2013; Morra 2014; Wiseman-Trowse 2008). In contrast, this article aims to explore 'Britpop' through the lens of a formal social network analysis (SNA) in the way that Crossley explored punk and post-punk scenes in the UK (see 2008; 2009; 2015; Crossley et. al 2014). While social class remains implicit in Crossley's analysis we break conceptual ground by putting 'social class' at the forefront of a SNA of a music scene-making cultural workforce. Therefore, this article answers two interrelated questions: first, what was/were the social network(s) that made up 'Britpop'? Second, how did social class homophily and/or heterophily exist in the Britpop network? Our literature review begins by discussing scholarship on social class and popular music before unpacking homophily and heterophily.

Literature Review

Two decades after 'Britpop', Oakley and O'Brien (2016) pointed out that the middle and upper classes dominate the cultural and creative workforces. O'Brien *et. al* (2016) drew upon the 2014 Labour Force Survey to show that over 60 per cent of those working in 'music, performing and visual arts' were qualified to at least degree level. Additionally they found that a disproportionate number of musicians hail from higher professional and higher managerial original social class positions. Social class is a

regular theme in the lyrics of some music genres and in contrast to theatre, selective dimensions of working class culture are celebrated in popular music (Gildart 2012; Harkness 2014; Hesmondhalgh 2013; McDonald 2009; Palmer 2014; Power *et. al* 2012; 2016). Indeed, Wiseman-Trowse (2008) found social class to be 'performed' through the actions and managed identities of musicians. 'Authenticity' - which Spracklen (2011; 2013) argues is a vexed concept in cultural sociology - is paralleled with social class representations, with working-class musicians portrayed as more 'real' than those from the middle and upper classes (Wiseman-Trowse 2008). Petersen (1997), Fox (2004) and Harkness (2014) found similar patterns in the North American context in the musical genres of country, folk and rap. However, Wiseman-Trowse goes further by exploring how performances of class are a way in which the 'meaning' of music is communicated to audiences. Thus, a musician's projected social class may be a performance, drawing upon widely held reference points (lyrics, dress, accent and biography) and aiming to connect with a fan-base. In other words, figures in popular culture – such as musicians – become part of public understandings about the 'essential properties' of social class.

This article does not dispute these arguments but rather addresses another area where social class and music connect. We apply Tilly's (2002: 72) relational realist ontological position 'that transactions, interactions, social ties and conversations constitute the central stuff of social life' to a social class-focussed SNA of Britpop. Specifically, we explore processes of social class homophily and heterophily by examining with whom musicians and other key individuals in the scene came together in friendships, sexual partnerships and working relationships.

'Homophily' works on the premise that birds of a feather flock together (Borgatti *et. al* 2012). *Homophilous networks* consist of people who are similar in characteristics such as social class and age (McPherson *et. al* 2001). Indeed, Huckfeldt (1983) found that even schoolchildren who may not be explicitly aware of 'social class' are more likely to hold friendships with others from similar social locations while social class has also been shown to influence the choice of partner (Kalmijn and Flap 2001). Homophily limits people's social worlds in a way that has powerful implications for the information they receive, the attitudes they form, and the interactions they experience (McPherson *et. al* 2001). Homophily can help people access information (Choudhury *et. al* 2010), bond people together to support diffusion of ideas and innovations (Christakis and Fowler 2007) and play a crucial role in forming opinions and norms (Centola *et. al* 2005). Mark (1998) studied diffusion of music preferences within networks and found that tastes are transmitted through homophilous class networks. Building on

Mark's position, Crossley (2015) demonstrated that social networks in which music scenes develop tend to be homophilic, giving such groups distinct demographic characteristics.

In contrast, *network heterophily* indicates a diverse mix of individuals, including those from different social classes. As such, networks are organised through weak ties into a larger heterophilious network. These differences help to foster creativity, which is important for music and other artistic networks. Rodgers' work on diffusion of innovations (2003), Granvettor's theory of weak ties (1973), Simmel's thinking on the stranger (1950), and Lin's theory of social capital (2002) all demonstrate the importance of heterophily in network ties. Heterophily, has been shown to be important in social mobility and employment (Granovettor 1973), social support (Crossley *et. al* 2015), and the diffusion of new conventions and innovations (Rodgers 2003). Thus music scenes, such as Britpop, may develop around diverse groups of people from which a distinctive innovative scene or sound develops.

Academic literature on Britpop has argued that the use of the Union Jack flag by some bands unwittingly excluded some social groups from the scene (Cloonen 1997; Navarro 2016) with Huq (2006: 144) suggesting such imagery implied a sense of compulsory 'whiteness'. Also Benwell (2003) paralleled Britpop with a renewal of hegemonic masculine values communicated in the magazines that were set up to cater for young men (Benwell 2003). Britpop bands were not always male but as Whiteley (2010) suggests, female performers were often sexually-objectified by the 'new lad' media forms. However, it was the 'class war' (Wiseman-Trowse 2008:1) of 'The Battle of Britpop' between Blur and Oasis that brought the scene to the cultural mainstream in 1995 (Huq 2006). Spurred on by the media, the two groups engaged in the 'British Heavyweight Championship' (12 August 1995), as the *NME* dubbed it, in the quest to register the highest charting single. Such was the magnitude of the 'chart battle' it was covered in the national media, including *BBC One*'s flagship '9 O'Clock News' programme (Navarro 2016). The opening lines of this feature are of particular pertinence:

It's been described as the 'British Heavy Weight Pop Music Championship'. In one corner, four young middle class men from the South of England, collectively known as Blur, and in the other corner, five young working class men from Manchester called Oasis.

BBC One '9 O'Clock News', 14 August 1995

Similarly, a day later London Tonight, an *ITV* evening regional news and magazine show, described the two groups as:

Blur have always played up their cheeky Londoner image, while Oasis revel in being seen as Northern hard men. Blur support Chelsea [Football Club] whereas Oasis are fans of Manchester City [Football Club] and Blur nicknamed Oasis 'Oasis quo' [after the band 'Status Quo'] because they say their songs all sound the same. Oasis say Blur are 'a bunch of middle class art students'.

During the week that followed the release, Blur sold 274,000 copies of 'Country House' to Oasis' 216,000 copies of 'Roll With It', charting at number one and two respectively. Both subsequently achieved high selling albums - with Oasis' second album selling in excess of four million copies in the UK, becoming the third best-selling album in British history (Bennett and Stratton 2010). It is not clear if representations of working class culture (dis)advantaged the bands but the news items encouraged the grounds for social distinctions. Little was made of the fact that all members of the two groups were young men, and there was no mention of the likelihood that all would have probably defined themselves as ethnically 'white'. The markers of difference were starkly drawn from socio-cultural connotations of geography ('from the South of England' or 'cheeky Londoner image' in the case of Blur, and 'from Manchester' and 'Northern hard men' for Oasis) or outright social class position. Oasis described Blur as 'a bunch of middle class art students' as social class ('middle class') and its markers ('art students') were widely known distinctions they formed against their 'rivals'. In return, Blur hurled insults of a similar nature back, referring to Oasis as 'making our vulgarity very tame' (Blur singer Damon Albarn cited Jones 2001). Bourdieu (1990 [2000]: 6) argued that 'taste classifies, and it classifies the classifier. Social subjects, classified by their classifications, distinguish themselves by the distinctions they make'. In front of a watching public, Blur and Oasis mutually classified each other and themselves in their distinctions.

The socio-political context in which Britpop developed shaped these distinctions. Navarro (2015) notes how Britpop emerged as a response to the end of 'Thatcherism'. The political outlook of the period was distinctly neo-liberal, thus favouring economically strong regions of the UK, such as London and the South East of England (Cremin 2012). The relative regional differences in job opportunities increased intra-UK geographical mobility, as young people moved to London from elsewhere in the country to gain employment (Porter 1998). As a result, spatial inequalities grew between the 'poor North' and the

affluent South-East in the 1980s and 1990s (Savage *et. al* 2015: 265-276). This underlines the connotations signalled by the media when they referred to 'Northern' Oasis and 'Southern' Blur. In 1997, Tony Blair brought his 'New' Labour Party into the British government. Both Blur and Oasis publicly supported the politician in his successful General Election campaign despite the persistent representations of their apparent class differences when the press reportage of the period would suggest that by being 'Southern' and 'middle class', Blur might have instead favoured The Conservative Party.

However, representation is just one dimension of the relationship between social class and popular music. There are other dimensions of such relationships, as discussed by Jones (2013: 60-61) who argued that the 'northern lasses [and lad]' from the band Kenickie were portrayed in classist terms by the music and mainstream press. However, the siblings that formed one-half of the band, Lauren Laverne and Peter Gofton, hailed from a middle class family in which their father worked as a university lecturer and their mother was a local councillor. In other words, Laverne and Gofton's original social class position contrasted sharply with their representation in the music and mainstream media. Rather than examine these tensions in terms of performance of social location, we explore original social class positions effects on the relationships and networks of the music scene.

Methodology: A Social Network Analysis of Britpop

We follow Crossley's (2008; 2009; 2015) use of SNA to understand the punk and post-punk scenes in Manchester, Liverpool, Sheffield and London, which involves adopting a mixed method qualitative and quantitative approach. The boundary specification and systematic data collection method was developed in six stages. First, data was derived from several sources: a) a corpus of weekly music magazines from 'indie' facing *NME* and *Melody Maker* that focused on the years 1993-1997; b) a large number of *NME*'s monthly offshoot, *Select* magazine; c) data from biographies and autobiographies of individuals and bands that were involved in the scene and a range of online archives of print, visual and audio material. This archival dataset offered the most comprehensive way of capturing relational dynamics in a scene which was operating over 20 years ago, replicating how Crossley (2008; 2009; 2015) explored punk and post-punk networks, but we have to acknowledge that the materials were produced for commercial purposes and therefore contains biases that might help to sell magazines, books and recordings.

Second, the boundary delineating musicians and other people within the scene was established using the Wikipedia's 'List of Britpop musicians' which named 30 bands and musicians. A strength of this approach was that we could follow the general consensus of who constituted the scene - thus we did not decide which bands and musicians were initially included/excluded." The term 'Britpop' clearly has elastic boundaries – we did not initially include or induct Kenickie into our network, for example – and thus the inclusion or exclusion of those on the scene is contestable. Third, details were gathered from our media texts to tease out working relationships and 'friendships' from all individuals amongst the 30 bands and musicians. When an additional person's name came up in three or more texts, s/he was inducted into the network and subsequently searched for in the texts. To ensure edges and connections were robust, there was a cross validation of ties from a minimum of two independent sources. Ultimately, this provided a list of 149 agents who were involved in what we have identified to be the 'inner circle' of Britpop. It is important to note that at this next level not all individuals were musicians rather we follow Crossley (2008; 2009; 2015) by including those who might also be involved in the business, management or reporting of events and issues (such as Artists and Repertoire - A&R people, P.R. agents, journalists and photographers as well as those who worked in/ran the social spaces in which the key players 'hung out').

The fourth stage involved adding attribute data, such as original social class position, which was defined through the National Statistics Socio-Economic Classification (NS-SEC) schema. However, a further limitation in the study was that even with such a large volume of data we could not find complete details for all 149 members of the scene. Fifth, together this data was analysed through a formal SNA. It is necessary to point out that most variations of quantitative SNA use a variety of mathematical formula to give ways of exploring networks. In contrast, we defined, populated and visualised our network in *NodeXL* (see Hansen *et. al* 2010) and exported this to *UCINet* (see Borgatti *et. al* 2012) to generate graph metrics. SNA provides a way of describing and explaining the structure of relationships (Scott 2011; Crossley 2015). However, we acknowledge weaknesses in this approach and subsequently our method. To be clear, relationships in our method - and often in the approach more broadly - are reduced to 'edges' (as lines or links) that connect people, which means it does not take into account the 'quality' or endurance of that relationship. In performing this analysis, we decided that an 'edge' had to be either a friendship or business relationship; claiming to know someone or having shared a tour with an individual did not qualify. While defining business relationships was a binary decision, a more subjective judgement was required to code whether or not individuals 'knew'

each other through friendships. Thus, in those cases where a person reported another to be his or her 'friend', 'mate' or 'boyfriend/girlfriend', the link was recorded as an edge. Similarly, if they lived together or told several subjectively defined 'positive' stories about each other we recorded that relationship as an edge. Lots of 'friendships' were recorded in textual material of the time but as Sleeper frontwomen, Louise Wener, later recounted not all of these were genuine: 'We were civil but, secretly, there were machinations and schadenfraude. We would look at each other askance, with eyes narrowing and claws were out, mine included' (quoted in *Mojo Classic* 2009: 67). Accordingly, we recognise that the data used might be contaminated by the commercial purpose of the interview. This must be acknowledged as a limitation of the data, but we found no alternative but to accept the individual's report of a friendship relation, as Crossley (2008; 2009; 2015) did in his research.

Representing a music scene as a social network shows how individuals connect to create structural configurations. SNA graph metrics allow us to examine these configurations at three levels. First at the *whole network level,* by looking at the relationships and connectedness of all 149 people in Britpop's inner circle. Second, at the *sub-network level* exploring specific groups or clusters of people in the broad network, and third, at the *nodal or individual level* by looking at the specific attributes and narratives set around people in the network. Many cultural sociology and cultural studies which examine music scenes focus deeply on this third level of analysis by giving biographical accounts of important people. Some examples of this type of analysis include Stevenson's (2006) excellent account of David Bowie and Rojek's (2004) impressive historiography on Frank Sinatra because they are based on the individual level but they are weaker at recognising that, as Crossley (2008; 2009; 2015) points out, music production is a collective activity.

Our whole network analysis uses the Clauset-Newman-Moore cluster algorithm to draw out the subnetworks of Britpop, exposing the divisions within the scene (Clauset *et. al* 2004; Hansen *et. al* 2010). Prestigious positions in the whole and sub networks were measured through three centrality measures: *degree*, *betweenness* and *closeness*. First, degree centrality is the number of ties an individual has within a network. Second, betweenness centrality is a measure of how often a node (as an individual) falls along the shortest path connecting two other nodes, such that they might 'broker' between these individuals (Crossley *et. al* 2014). Third, closeness centrality is the sum of the path lengths connecting

a node (an individual) to every other node in the network, so that higher scores indicate shorter distances. We now turn to the Britpop network.

Britpop's Key Players and Network Structure

Analyses of the textual dataset led to the inclusion of 149 key players in the Britpop network. The whole Britpop network has a maximum geodesic path of 4 and an average geodesic distance of 2.3. This means that the maximum number of connections to join any two people is network is 4 steps with the mean number of steps at 2.3. The graph density is 0.10, which means 10 per cent of ties are realised. The whole network's ties and connections were recorded in our dataset and visualised in Figure 1 (below):

INSERT FIGURE 1: Sociogram Showing Clustering of the Britpop Network

Figure 1 identifies 8 subgroups within the Britpop network (labelled G1 to G8) but is clearly dominated by two clusters which are densely connected within, and to a certain degree between, each other (G1 and G2). The remaining clusters are on the edge of the scene. G1 is the largest cluster and is centred on the foci of the London Borough of Camden which has been described as 'the most polarised borough in London [with ...] residents living in one of the most deprived wards in the country, and the gap between the most and least deprived wards is bigger than in any other London borough' (London Borough of Camden 2003: 3). The affluent Primrose Hill lies just one mile away from Camden, where few pockets of social deprivation exist. The central offices of Creation Records were located in Primrose Hill and is important to G2, which is dominated by Oasis and the label (see Hesmondhalgh's 1999 discussion of Creation Records). G3 is made up of members of bands The Bluetones and Dodgy, a friendship group that lived together and near each other in Hounslow, G4 is made up of members of Gene who 'always hated being bundled in with the Britpop bands' (see Wilde 2012) and their associates (including music producer Stephen Street). Meanwhile G5 consists of several individuals residing in Camden, who were never strongly connected to members of G1 (or G2), while G6 is made up of the Northern Irish band Ash, who also did not identify with the label 'Britpop'. G7 centred on Hut Records manager Dave Boyd and includes frontman from The Auteurs Luke Haines, while G8 was set

around the only loosely connected singer Rick Whitter, from York-based band Shed Seven. To begin to address issues surrounding connections in the network, we used the centrality measures of degree, betweenness and closeness offered in Table 1 (below), which aggregates the top-10 ranked individuals from the network according to these measures, to piece together influential members of the scene. All of these individuals belonged to either G1 or G2.

INSERT Table 1: Centrality Measures

Of the ten with the highest *centrality* measures, only four- Oasis' Liam Gallagher and Noel Gallagher, Powder's Pearl Lowe and Limousine's Simon Mason - are musicians. From these, Simon Mason's (2013) autobiography extensively details him selling drugs to unnamed Britpop artists. The remaining six work in public relations ([hereafter P.R.], Savidge and Best), journalism (Harris - although he also set up a small independent record label, Fierce Panda) or were D.Js (Tunkin, Jackson and Lewis although the latter played bass guitar for Paul Weller). Betweenness is also dominated by nonmusicians, such as those who work in P.R. (Best, Savidge, Hall and Hopkins), journalists (Harris and Williams - who worked together at the NME and co-founded Fierce Panda), D.Js (Lewis) and photographer Brian Cannon - thus the nexus of press and commercial agents dominate the shortest paths across the network. Once more, PR. agents (Best, Savidge and Hopkins), journalists (Harris and Williams), and D.Js (Lewis and Jackson) are dominant in the ranked *closeness* 'top 10' list. Above all else, Table 1 is dominated by the presence of John Harris, who is highest ranked in all three measures, P.R. agency owners, Phill Savidge and John Best, nightclub D.Js, Ian Jackson and Andy Lewis and Oasis' Noel Gallagher and Liam Gallagher (all later discussed). At this point, we shift our focus to G1 and G2 as they are the two largest clusters and therefore constitute the 'critical mass of the scene' (see Crossley 2015).

G1: The Camden Cluster

Figure 1 shows members of Blur, Elastica, Suede, Pulp and Menswear are located in G1. Additionally, a large number of non-musicians populate this group. These non-musicians include P.R. agents Phill Savidge and John Best, who set up 'Savage and Best PR', a company that was based in Camden and carried out PR work for bands including Blur, Elastica, Suede, Pulp and Menswear. It also included Food Records' co-owner Andy Ross, who worked in the same building off Arlington Road (in Camden)

as Savage and Best P.R. Figure 1 and Table 1 show that D.Js Paul Tunkin, Ian Jackson and Andy Lewis, who ran 'Blow Up!' – a cult club night above The Laurel Tree public house in Camden – were also well connected in G1. This club was an important 'foci' for the network. Figure 2 (below) and Table 2 (below) isolate those highlighted as G1 members in Figure 1, discounting links to beyond its boundaries.

INSERT Figure 2

INSERT Table 2

There were 61 individuals in G1. The graph metrics showed an average geodesic distance of 1.91 with a maximum geodesic distance of 5. G1's density is 0.27. Compared to the whole network, G1 has a shorter average geodesic distance and higher density. While musicians made up a majority of the group, it is noticeable that the data in Table 2 shows that musicians did not make up the majority of the best connected in people in the cluster. From these, betweenness showed Pearl Lowe to be the best 'broker' between individuals in the group. Lowe's (2008) autobiography attests that between 1994 and 1997 she fronted the band Powder – an act signed by Parkway Records (a label put together by P.R. agents Phil Savidge and John Best) - and lived in Camden and then Primrose Hill. Although she is recorded as a musician, her band released only three singles in the period, the highest charting at number 72. Due to her connections in the scene, she met and formed a long-term relationship with Supergrass drummer Danny Goffey, whose father was a presenter on the BBC television programme Top Gear', and whose mother was a former Labour Party councillor. Lowe also hailed from an artistic background; her mother was a high-end interior designer (classified as Lower managerial and professional occupations in NS-SEC) and as such was part of north London's 'creative class' (Florida 2002). Similarly, Salad frontwoman Marijne van der Vlugt hailed from the 'creative class', as her father is the Dutch television actor and voice over artist Bram van der Vlugt. Marijne Van der Vlugt was connected but her band also experienced only modest commercial success; despite recording two albums their highest placing was number 16. P.R. agents Best and Savidge were near the top of all centrality measures in G1. Given that they had a different occupation to the musicians, they employed other P.R. agents (such as Polly Birkbeck, now owner of Complete Control P.R. agency) which qualified them as the highest NS-SEC level. Indeed, Savidge and Best's job was to ensure that their clients received media coverage and so they brokered relationships with other skilled professionals, including record label personnel (such as Saul Galpern), journalists and band managers (such as Adrian Webb). Blow Up! D.Js Paul Tunkin and Andy Lewis both attended Art College before they set up their club night with Ian Jackson. Little is known about their social class backgrounds but it appears that Tunkin,

Lewis or Jackson had professional occupations before they moved to London. All that can be determined is that Tunkin moved to Camden from Southend, where he had known Todd Permenter, who was the original drummer in the band Menswear. From the other musicians situated amongst the best connected in G1, Blur guitarist Graham Coxon grew up in a home where his father was a clarinet player and army bandleader while his mother worked as a language educator; he later met Blur bassist Alex James while studying Fine Arts at Goldsmiths College. Simon Mason, another central individual, came from 'a reasonably well-to-do family in Weston-super-Mare' (Mason 2013: 3) and attended a private boarding school. Lush singer Miki Berenyi, whose band Lush predated 'Britpop', was in a relationship with P.R. agent John Best in the mid-1990s and hailed from a family where her mother was a well-established Japanese actress and her father was a Hungarian journalist of strong repute.

Well-known players in G1, who are defined as such according to their band's status and/or their media presence, include Elastica's Justine Frischmann, Suede's Brett Anderson, Blur's Damon Albarn and Pulp's Jarvis Cocker. Due to their public profiles it is worth exploring their original social class backgrounds alongside those who were best connected. Justine Frischmann's father was a multimillionaire and the chairman of an internationally recognised firm of consulting engineers (higher managerial and professional occupations from NS-SEC). Frischmann's boyfriend in 1993, Brett Anderson, was the son of a single parent father who worked as a taxi driver (a semi-routine occupation in NS-SEC) in Haywards Heath, a distinctly middle class West Sussex town where they also lived. Frischmann's boyfriend by 1995, Damon Albarn, came from a middle class background with his father a television arts programmer (higher managerial and professional occupations from NS-SEC) who also managed the 1970s psychedelic 'prog-rock' band Soft Machine. Jarvis Cocker's father was a D.J and actor but left the family to move to Australia when Cocker was seven. Jarvis Cocker was subsequently raised by his mother who worked for a 'fruit machine' gambling company. Her job was to collect money from one-arm bandits and report any faults on the machines. These four individuals did not come from the same social class backgrounds.

Three key trends emerge from G1 analysis. First, there are a sizable number of individuals (six from ten in each of betweenness, closeness and degree measures of centrality) who are not musicians but have jobs that are related to the 'music business'. Thus, occupation rather than original social class position should be taken into account in the analysis of the group. Second, although there is a heavy representation of musicians hailing from higher social classes and 'creative classes' (Florida 2002), the group appears to be marked by class heterophily. Indeed, the common theme was not original social

class background but keenness to socialise in the public houses and nightclubs of Camden, especially participation in *Blow Up!*, which seems to have brought the group together. Third, despite all musicians in key Britpop bands such as Suede, Blur, Pulp and Elastica being part of G1, members of those bands are rarely the best connected in the group, with Coxon and Welch the exceptions.

G2: Oasis and Creation Records

Figure 1 shows that members of Oasis form a significant part of G2. As in G1, there are a large number of non-musicians in this group, including Creation Records owner Alan McGee and NME journalists Simon Williams and John Harris (who together co-owned the Camden-based indie record label Fierce Panda). The group is less defined by one geographical position than G1. At the beginning of 1994, all five members of Oasis lived in their home town of Manchester but by the end of the year singer-songwriter and guitarist Noel Gallagher had relocated to Camden (see Harris 2003; 2010).

Nevertheless, they were still known as a 'Manchester band', bringing with them the stereotypes of behaviour and fashion associated to the northern city (see Wiseman-Trowse 2008: 146-167 for elaborated examples of these stereotypes). Alan McGee first saw Oasis play the King Tut club in his home city of Glasgow before moving to the capital and establishing his company's office in Primrose Hill. Liam Gallagher and Tim Burgess also made the move south. Relocation was common in this cluster and mirrored the trend in the wider society of moving to London to increase employment prospects.

G2 included musicians that remained from the 'Baggy' British independent scene which flourished five years before the 'start' of Britpop, particularly those that hailed from Manchester, such as Shaun Ryder and Bez from The Happy Mondays, Tim Booth from James, and The Charlatans' Tim Burgess and Mark Collins, whose band were experiencing a renaissance in the new scene. Many of these 'Baggy' veterans knew Noel Gallagher from his position as a roadie and technician for the Manchester band, The Inspiral Carpets, a position he held between 1988 and 1990. As with G1, Figure 3 (below) and Table 3 (below) isolate those highlighted as G2 members in Figure 1, discounting links to beyond its boundaries.

INSERT Figure 3

INSERT Table 3

There were 58 individuals in G2. Its maximum geodesic distance is 4, with an average of 1.88. While the average geodesic distances in G1 and G2 are similar, the maximum distance in G2 is smaller. However a smaller percentage of ties are realised in this network with a slightly lower graph density of 0.22. Data in Table 3 shows that only eleven individuals make up the 30 slots allocated in the top-10 ranks for each of the three measures of centrality. Those individuals are Noel Gallagher, Liam Gallagher, Paul Arthurs, Tony McCarroll, Paul McGuigan, Tim Burgess, Alan McGee, Jeff Barrett, Johnny Hopkins, Terri Hall and John Harris. The first five of these were original members of Oasis with one further musician, Tim Burgess, amongst the number. There are two direct members of Oasis' record label, Alan McGee and in-house P.R. agent Johnny Hopkins, and an additional P.R. agent, Terri Hall, who had previously worked with many 'Baggy' band and who worked with Oasis after the closure of Creation Records. In addition, Jeff Barrett worked for Alan McGee as a general assistant at Creation Records between 1985 and 1988, before he launched Heavenly Records. The best-connected people in G1 are Oasis and members of the support team from Creation Records.

Qualitative material in Tony McCarroll's (2011) autobiography shows that he, Liam Gallagher, Paul Arthurs and Paul McGuigan were a tightly knit group of friends from the working class districts in south east Manchester (the Gallaghers from Burnage, Arthurs from Longsight, and he and McGuigan from Levenshulme). All were born to Irish migrant families. Noel, the older Gallagher brother, joined the band in 1991. The Gallaghers were raised by a single mother who worked in a factory (routine occupations based on NS-SEC) while McCarroll and Arthurs' fathers were builders and plasterers (making them from semi-routine occupations in NS-SEC). They shared the broad position of 'working class'. Although Burgess did not encounter the other members of Oasis until the 1990s, he was from a similar class location; his autobiography testifies that his mother worked in a newsagent's shop in Northwich, a small town less than 20 miles away from where the other Oasis band members grew up.

Meanwhile, Alan McGee also hailed from a working class background, his mother 'doing the books for the car mechanics where [his] dad worked as a panel-beater' (McGee 2013: 1). In other words, McGee came from a 'skilled manual' family (lower supervisory and technical occupations – NS-SEC). To our knowledge, there is no publicly available information on the original class background of Johnny Hopkins or Jeff Barrett but both performed public relations duties at Creation Records, before the later founded Heavenly Records. Prior to working at Creation Records, Barrett worked as singles buyer for a record shop in Plymouth while Hopkins had studied at the University of Hull. Much like fellow P.R. agent Terri Hall and journalist John Harris, Hopkins and Barrett held employed professional positions in the network, all in occupational higher managerial and professional occupations based on NS-SEC.

John Harris grew up in the affluent Manchester suburb of Wilmslow, graduated with a degree in Politics, Philosophy and Economics from Oxford University and is the son of a university lecturer and a teacher.

Three key trends emerge from our analysis of G2. First, like G1 there are a sizable number (five out of eleven names) of those individuals with high measures of centrality are part of the 'music business' but they are not musicians. Second, the six musicians among the best connected were from the 'working classes', with all coming from Manchester or its nearby towns. In other words, there exists a social class homophily amongst musicians - in contrast to G1. Third, this group of musicians are based upon the members of Oasis, the most commercially successful band in G2 (and perhaps the whole Britpop scene). The other best-connected musician in G2, was Tim Burgess, the lead singer of The Charlatans, a band who achieved three 'number one' albums in the 1990s. Thus, unlike G1, the 'highest profile' musicians were amongst the best connected in G2.

Conclusions

Literature on the cultural workforce of music production contains some findings that initially look contradictory. For instance, O'Brien *et. al* (2016) found that musicians are likely to be originally drawn from higher professional and higher managerial social class positions, while other research suggests that the music industry encourages popular musicians to present themselves as being from the working classes (Fox 2004; Harkness 2014; Hawkins 2010; Jones 2013; Morra 2014; Petersen 1997), with such positions generally celebrated in popular music (Gildart 2012; Harkness 2014; Hesmondhalgh 2013; McDonald 2008; Palmer 2014; Power *et. al* 2012; 2015). Indeed, Wiseman-Trowse even goes as far as to suggest that social class becomes a way of conveying 'meaning' through music. This article does not contest any of these positions but rather adopts a relational realist ontological position (Tilly 2002) to question whether musicians and other key people in the Britpop movement clustered together under their original social class positions, thus exploring homophily and heterophily in a music scene. This means we have departed from previous studies of Britpop which have stressed representations of class rather than its impact of forming friendships and relationships. In this respect it echoes research into the influence of social class on choices of school friendships (Huckfeldt 1983) and, into adulthood, mating partners (Kalmijn and Flap 2001).

Academic work that has discussed social class in Britpop has looked at the movement as *either* middle or working class (see Hatherley 2011; Hawkins 2010; Huq 2006; Jones 2013) assuming the movement to be *singular* when, in fact, it was not. Accordingly, we have argued that the *whole* Britpop social network was social class heterophilic, with its members arriving from different social locations. However, on further analysis through a Clauset-Newman-Moore cluster algorithm, Britpop's cultural workforce - encompassing A&R people, P.R. agents, journalists, band managers, record producers and record label owners as well as musicians - is broken into eight groups, of which the majority of members fall into one of two distinct main clusters, G1 and G2. Cross sub-network connections existed between some groups, but despite some in G1 and G2 living, working and spending leisure time in the same physical space, divisions broadly fell between those hailing from the 'North' and those from 'South'. According with Wiseman-Trowse's findings (2008) it is not surprising that the media, including *BBC*'s '9 O'Clock' news, were quick to draw on the social class differences between bands such Oasis and Blur, their claims partially based upon cultural stereotypes of the 'North' and 'South'.

The exploration of G1, whose members were mainly based in the socially diverse Camden borough of London, found that group members hailed from a range of social class backgrounds. In other words, G1 was a heterophilic network in class terms. Hatherley (2011) held that Britpop bands that were associated with Camden, such as, Pulp and Blur were more 'creative' than Britpop bands from outside the cluster. 'Creativity' is notoriously difficult to measure (O'Brien 2013) but if G1 was more creative, it would be typical of a socially heterophilic network - reflecting the socially mixed immediate urban environment that makes up Camden's populace. G1 contained a large number of connections that were romantic relationships and this is less typical of a social class heterophilic network. Social spaces such as the *Blow Up!* in Camden served as hubs where relationships and interactions between those from the scene, blossomed and were of key importance in overcoming typical divisions in heterophilic networks, while maintaining some of the innovations that are typically offered in such social formations.

Musicians in G2 were homogenously 'working class'. By the 1995, members of this group were more likely to live in different cities to each other than members of G1, but most originally hailed from Manchester and its surrounding hinterlands. It was a more homophilic social class network than G1. Members of Oasis were amongst the best connected in this group. Once again, 'creativity' is difficult to measure in music but bands in this group were often criticised for a lack of innovation by some segments of the music press (Bennett and Stratton 2010; Harris 2003; 2010). If this criticism did hold

up, it would be typical of homophilic networks which are typically less innovative than heterophilic communities. It is also unsurprising that many of the non-familial relationships in this group long predated Britpop, but it is more surprising that so few romantic interactions took place in G2 - a factor which is probably accounted for in terms of gender and sexuality sameness, rather than social class homophily.

John Harris was clearly a broker between the two groups and when the two groups were detached he held less power in the network. His social power came from fusing G1 and G2 together and his cultural power came from his brokerage of discrete networks through his connections to the cultural workforce involved in making the scene, including other journalists, record label owners, band managers, D.Js, musicians and, crucially, P.R. agents. Harris and P.R. agents, such as Savidge and Best, mediatised the scene, and did so using mechanisms that played on the above stated cultural stereotypes. Whilst the music these bands produced was not contrived by them, the production of the scene was broadly developed through the professional music journalism industry ready for consumption by the public.

This article's findings are sociologically important for three reasons. First, we have underlined the need to interrogate how original class position shapes connections and relationships between individuals. In this case, the individuals of interest are those young people engaged in the production of a music scene, through their various professional roles and our aim was exploring the extent to which social class homophily and heterophily existed. This is important for scholars who research cultural production and cultural consumption and, more broadly, the cultural sociology of social class. Second, we demonstrated how social network analysis can be used to understand the relations underlying the production of a music scene, building on Crossley (2008; 2009; 2015), but choosing an explicit focus on social class. Further research in this vein could analyse other music scenes in the U.K. and across the world. If a full dataset on original social class position were to be compiled, autocorrelation tests could take place to investigate whether friendship is patterned by class across a whole network or subnetwork; in this study, we were limited to focusing only on those individuals who were 'best connected' as defined through high centrality measures. Third, we have contributed to the literature on music and social location by stepping away from a social constructivist position and the issues of class performance and representations. The results we have produced from a relational realist position have added to the literature in this area rather than disputing the findings offered by those such as Wiseman-Trowse (2008) on this important cultural sociological theme.

References

BBC One (1995) '9 O'Clock News', 14 August.

Bennett, A. (2010) 'Missing Links: Britpop Traces, 1970-1980' In: A. Bennett and J. Stratton (Eds.) (2010) *Britpop and the English Music Tradition*, Farnham: Ashgate.

Bennett, A. and Stratton, J. (2010) 'Introduction' In: A. Bennett and J. Stratton (Eds.) (2010) *Britpop and the English Music Tradition*, Farnham: Ashgate.

Benwell, B. (2003) 'Ambiguous masculinities: heroism and anti-heroism in the men's lifestyle magazine' *The Sociological Review*, *51*(1): 151-168.

Berliner, P. J. (1994) Thinking in Jazz: The Infinite Art of Improvisation. Chicago: University of Chicago Press.

Borgatti, S.P., Everett, M.G. and Johnson, J.C. (2013) Analyzing Social Networks. London: Sage.

Bourdieu (1990 [2000]) *Distinction: A Social Critique of the Judgement of Taste.* Boston/London: Harvard University Press.

Centola, D., Willer, R. and Macy, M. (2005) 'The Emperor's Dilemma: A Computational Model of Self-Enforcing Norms' *American Journal of Sociology*, 110(4): 1009–40.

Christakis, N.A., Fowler, J.H. (2007) 'The Spread of Obesity in a Large Social Network over 32 Years' *New England Journal of Medicine*, 357:370-379.

Choudhury, M., Sundaram, H., John, A., Seligmann, D.D., and Kelliher, A. (2010) "Birds of a Feather": Does User Homophily Impact Information Diffusion in Social Media? arXiv preprint arXiv:1006.1702.

Cloonan, M. (1997) 'State of the nation: "Englishness," pop, and politics in the mid-1990s' *Popular Music & Society*, *21*(2): 47-70.

Cremin, C. (2012) 'The social logic of late capitalism: Guilt fetishism and the culture of crisis industry' *Cultural Sociology*, *6*(1): 45-60.

Crossley, N. (2008) 'Pretty Connected: The Social Network of the Early UK Punk Movement' *Theory, Culture & Society*, 25(6): 89-116.

Crossley, N. (2009) 'The man whose web expanded: Network dynamics in Manchester's post/punk music scene 1976–1980' *Poetics*, 37(1): 24-49.

Crossley, N. (2015) *Networks of sound, style and subversion: The punk and post-punk worlds of Manchester, London, Liverpool and Sheffield, 1975-80.* Manchester: Manchester University Press.

Crossley, N., Bellotti, E., Edwards, G., Everett, M.G., Koskinen, J., and Tranmer, M. (2015) *Social Network Analysis for Ego-Nets*. Sage London.

Crossley, N., McAndrew, S. and Widdop, P. (2014) *Social Networks and Music Worlds* (Eds.). Abingdon: Routledge.

Florida, R. (2012) The Rise of the Creative Class and How It's Transforming Work, Life, Community and Everyday Life. London: Basic Books.

Fox, A.A. (2004) Real Country: Music and Language in Working-Class Culture. London: Duke University Press.

Friedman, S., O'Brien, D. and Laurison, D. (2016) Like Skydiving without a Parachute': How Class Origin Shapes Occupational Trajectories in British Acting. *Sociology*, (online first).

Gildart, K. (2012) 'From 'Dead End Streets' to 'Shangri Las': Negotiating Social Class and Post-War Politics with Ray Davies and the Kinks' *Contemporary British History*, 26(3): 273-298.

Granovetter, M. S. (1973). "The Strength of Weak Ties". American Journal of Sociology, 78 (6): 1360–1380.

Hansen, D., Shneiderman, B. and Smith, M.A. (2010) *Analyzing social media networks with NodeXL: Insights from a connected world*. New York: Morgan Kaufmann.

Harkness, G. (2014) Chicago Hustle and Flow. Minnesota: University of Minnesota Press.

Harris, J. (2003) Britpop! Cool Britannia and the Spectacular Demise of English Rock. London: HarperCollins.

Harris, J. (2010) The Last Party: Britpop, Blair and the Demise of English Rock. London: HarperCollins.

Hatherley, O. (2011) Uncommon: An Essay on Pulp. Winchester: Zero Books.

Hawkins, S. (2010) 'Unsettling Differences: Music and Laddism in Britpop' In: A. Bennett and J. Stratton (Eds.) (2010) *Britpop and the English Music Tradition*, Farnham: Ashgate.

Hesmondhalgh, D. (1999) 'Indie: The institutional politics and aesthetics of a popular music genre' *Cultural Studies 13*(1): 34-61.

Hesmondhalgh, D. (2013) Why Music Matters. John Wiley & Sons: Chichester.

Huckfeldt, R.R. (1983) 'Social contexts, social networks, and urban neighborhoods: Environmental constraints on friendship choice' *American Journal of Sociology*, *89*(3): 651-669.

Huq, R. (2006) Beyond subculture: Pop, youth and identity in a postcolonial world. Abingdon: Routledge.

ITV (1995) 'London Tonight' 15 August.

Jones, L. (2001) 'All a bit of a blur' *The Telegraph*, 5 June http://www.telegraph.co.uk/culture/4723916/All-a-bit-of-a-blur.html [accessed 7/2016].

Jones, R.E. (2013) Clampdown: Pop-Cultural Wars on Class and Gender. Winchester: Zero Books.

Jonze, T. (2014) 'Blur's war against grunge: could the Brits take on U.S. pop again?' *The Guardian*, 7 March https://www.theguardian.com/music/musicblog/2014/mar/07/blurs-girls-boys-britpop-american-grunge [accessed 7/2016].

Kalmijn, M. and Flap, H.D. (2001) 'Assortative meeting and mating: Unintended consequences of organized settings for partner choices' *Social forces*, 79(4): 1289-1312.

Lin, N. (2002) Social Capital: A Theory of Social Structure and Action. Cambridge: Cambridge University Press.

London Borough of Camden (2003) 'Social Inclusion Strategy' www.camden.gov.uk [accessed 8/2016]

Lowe, P. (2008) All That Glitters. London: Hodder Publishers.

Mason, S. (2013) Too High, Too Far, Too Soon: Tales from a Dubious Past. London: Mainstream Publishing.

Mark, N. (1998) Birds of a feather sing together. Social Forces, 77(2): 453-485

Martin, P. J. (2006) Music and the sociological gaze: Art worlds and cultural production. Manchester University Press

McCarroll, T. (2011) Oasis the Truth: My Life as Oasis's Drummer. John Blake Publishing Ltd

McDonald, C.J. (2009) *Rush, Rock Music, and the Middle Class: Dreaming in Middletown*. Bloomington: Indiana University Press.

McGee, A. (2013) Creation Stories: Riots, Raves and Running a Label. London: Pan.

McPherson, M., Smith-Lovin, L., Cook, J. M. (2001) Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27: 415-444.

Miles, S. (1998) Consumerism: As a Way of Life. London: Sage.

Mojo Classic (2009), p. 67.

Morra, I. (2013) *Britishness, Popular Music, and National Identity: The Making of Modern Britain*. London: Routledge.

Mulvey, J. (1995) 'Pulp: Different Class' The New Musical Express, 28 October, p.52

Navarro, B. (2016) 'Creative industries and Britpop: the marketisation of culture, politics and national identity' *Consumption Markets & Culture*, *19*(2): 228-243.

O'Brien, D. (2013) *Cultural policy: Management, value and modernity in the creative industries*. London: Routledge.

O'Brien, D., Laurison, D., Friedman, S., Miles, A. (in press 2016) 'Are the Creative Industries Meritocratic?' Cultural Trends 25:3, 182-193.

Oakley, K. and O'Brien, D. (2016) "Learning to labour unequally: Understanding the relationship between cultural production, cultural consumption and inequality". *Social Identities*, 22(5): 471-486.

Palmer, A. (2014) "In a Land that I Love": Working-Class Identity and the End of Empire in Ray Davies' Arthur or the Decline and Fall of the British Empire' *Popular Music and Society*, 37(2): 210-232.

Peterson, R.A. (1997) Creating Country Music: Fabricating Authenticity. Chicago: University of Chicago Press.

Petridis, A. (2014) Britpop and Kurt Cobain 20 Years On – Don't Look Back in Anger' *The Guardian*, 3 April https://www.thequardian.com/music/2014/apr/03/britpop-kurt-cobain-20-years-nirvana [accessed 7/2016].

Porter, R. (1998) London: a social history. Boston: Harvard University Press.

Power, M.J., Dillane, A. and Devereux, E. (2012) 'A push and a shove and the land is ours: Morrissey's counter-hegemonic stance (s) on social class' *Critical Discourse Studies*, *9*(4): 375-392.

Power, M.J., Dillane, A. and Devereux, E. (2016) "I sing out to the youth of the slums": Morrissey and Class Disgust' *Popular Music and Society*, 39(5): 547-562.

Rogers, E.M. (2003). Diffusion of innovations (5th ed.). New York: Free Press.

Rojek. C. (2004) Frank Sinatra. Polity Press.

Savage, M., Devine, F., Cunningham, N., Taylor, M., Li, Y., Hjellbrekke, J., Le Roux, B., Friedman, S. and Miles, A. (2013) 'A new model of social class? Findings from the BBC's Great British Class Survey experiment' *Sociology*,47(2): 219-250.

Savage, M., Cunningham, N., Devine, F., Friedman, S., Laurison, D., McKenzie, L., Miles, A., Snee, H. and Wakeling, P. (2015) *Social class in the 21st century*. Milton Keynes: Pelican.

Scott, J. (2011) Social Network Analysis. London: Sage.

Simmel, G., Wolff, K. (Trans.) (1950) The Sociology of Georg Simmel. New York: Free Press.

Spracklen, K. (2011) 'Dreaming of drams: Authenticity in Scottish whisky tourism as an expression of unresolved Habermasian rationalities' *Leisure Studies*, *30*(1): 99-116.

Spracklen, K. (2013) 'Nazi punks folk off: leisure, nationalism, cultural identity and the consumption of metal and folk music' *Leisure Studies*, 32(4): 415-428.

Stevenson, N. (2006) David Bowie: Fame, Sound and Vision. Cambridge: Polity Press.

Tilly, C., 2002. Stories, Identities, and Political Change. Oxford: Rowman & Littlefield Publishers.

Whiteley, S. (2010) 'Trainspotting: The gendered history of Britpop' In: A. Bennett and J. Stratton (Eds.) (2010) *Britpop and the English Music Tradition*, Farnham: Ashgate.

Wilde, J. (2012) 'Gene's Martin Rossiter Interviewed: "Pulp And Blur Can F*ck Off To Butlins" *Sabotage Times*, 24 November http://sabotagetimes.com/music/genes-martin-rossiter-interviewed-pulp-and-blur-can-fck-off-to-butlins [accessed 8/2016]

Wiseman-Trowse, N. (2008) Performing Class in British Popular Music. Basingstoke: Palgrave MacMillan

Figure 1: Clustered Sociogram of Britpop Network (G1-G8), N=149

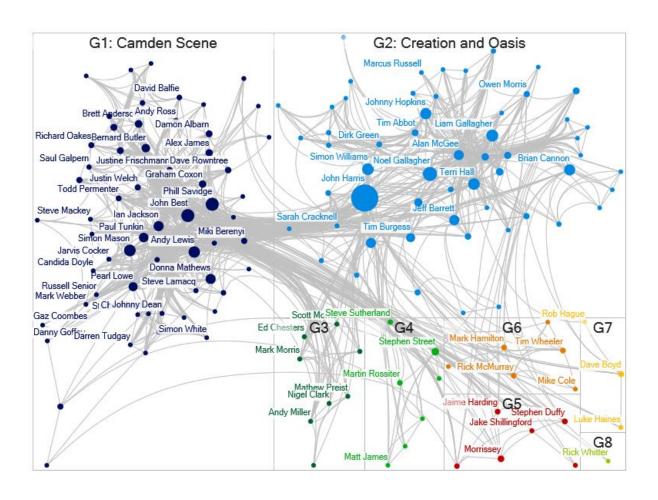


Table 1: Centrality Measure Ranking of Britpop Network (G1-G8)

Rank	Betweenness	Closeness	Degree	
1	John Harris	John Harris	John Harris	
2	Noel Gallagher	John Best	Andy Lewis	
3	John Best	Phil Savidge	Ian Jackson	
4	Phil Savidge	Noel Gallagher	Paul Tunkin	
5	Liam Gallagher	Andy Lewis	Phil Savidge	
6	Simon Williams	Liam Gallagher	John Best	
7	Terri Hall	lan Jackson	Noel Gallagher	
8	Andy Lewis	Simon Williams	Liam Gallagher	
9	Johnny Hopkins	Alan McGee	Simon Mason	
10	Brian Cannon	Johnny Hopkins	Pearl Lowe	



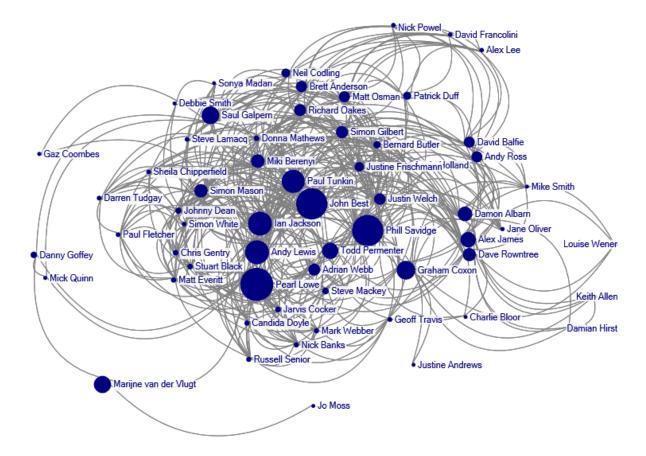


Table 2: Centrality Measure Ranking of Bounded G1 Network

Rank	Betweenness	Closeness	Degree	
1	Pearl Lowe	John Best	John Best	
2	John Best	Phill Savidge	Phill Savidge	
3	Phill Savidge	Ian Jackson	Ian Jackson	
4	Ian Jackson	Andy Lewis	Andy Lewis	
5	Andy Lewis	Paul Tunkin	Paul Tunkin	
6	Paul Tunkin	Todd Permenter	Todd Permenter	
7	Graham Coxon	Pearl Lowe	Simon Mason	
8	Saul Galpern	Miki Berenyi	Miki Berenyi	
9	Marijne van der Vlugt	Adrian Webb	Adrian Webb	
10	Todd Permenter	Justin Welch	Pearl Lowe	



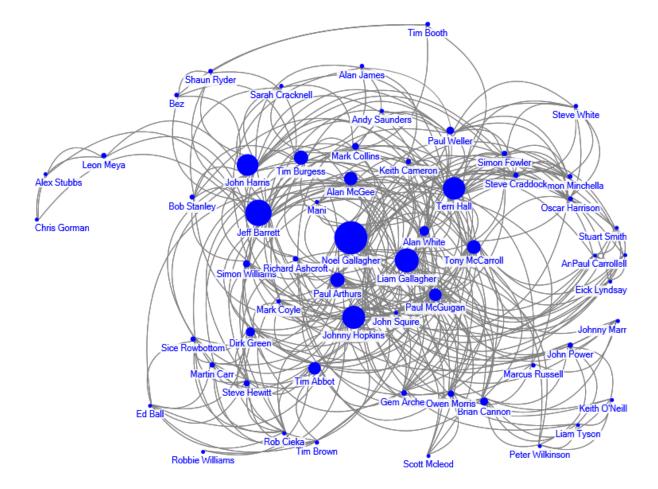


Table 3: Centrality Measure Ranking of Bounded G2 Network

Rank	Betweenness	Closeness	Degree
1	Noel Gallagher	Noel Gallagher	Noel Gallagher
2	Jeff Barrett	Liam Gallagher	Liam Gallagher
3	Liam Gallagher	Johnny Hopkins	Johnny Hopkins
4	Johnny Hopkins	Paul Arthurs	Terri Hall
5	Terri Hall	Terri Hall	Paul Arthurs
6	John Harris	Paul McGuigan	Paul McGuigan
7	Paul Arthurs	Tony McCarroll	Tony McCarroll
8	Tim Burgess	Jeff Barrett	Jeff Barrett
9	Tony McCarroll	Alan McGee	Alan McGee
10	Alan McGee	John Harris	John Harris

^{&#}x27; 'A Year in the Provence' is a book and television mini-series from the period where a solidly middle class British couple moved to their holiday home in southern France. The show became a reference point for affluent, middle class culture.

[&]quot;See http://en.wikipedia.org/wiki/List_of_Britpop_musicians."

iii This is despite his name being mentioned by lots of other key individuals in the network and with many having described him as their 'friend'. This hole in the data is recognised as a weakness in this research.

^{iv} A fruit machine is also known as a slot machine in North America or a poker machine in Australia and New Zealand. For the purpose of clarity, it is a gambling machine with three or more reels which spin when a button is pushed.