

## What can Google Trends data tell us about dialect labels: An exploratory study

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**Abstract:** The aim of this article is twofold: firstly, it sets out to explore the usefulness of Google Trends to the study of language and the perception of variants and, secondly, it investigates the social realities of dialect labels as reflected in searches on the Internet search engine Google. Google Trends is an online tool which is freely available and allows you to map the search volume of search terms across time and space, and also see which other related searches Google users performed within the specified time period or area. In this way, Google Trends can perhaps help us shed light on what it is Google users are curious about or interested in when they search for words such as *Geordie*, *Scouse* and *Cockney* – is it the dialects which the labels denote or is it something else? The study thus takes as its primary interest the application of the Google Trends search tool to the study of folk perceptions of dialect labels and, as a secondary aim, if this can be used to uncover what these dialect labels denote to lay people. With regard to the first aim, the study found that using Google Trends data can be useful in the early stages of perceptual dialectology studies of dialects and dialect labels. With regard to the second aim, the main finding of the study was that there are vast differences between the three dialect labels investigated here, both in terms of sheer search volume over time but also with regard to the collocates with which they are associated. Explanations for some of the patterns of search volume over time and the differences between the three dialect labels are sought by considering the impact of popular culture and TV shows.

**Key words:** Dialect labels; Geordie; Scouse; Cockney; Google Trends; perceptual dialectology; social reality; folk linguistics; cultural prominence

### 1. Introduction<sup>2</sup>

Cramer & Montgomery (2016: xiiv) argue that perceptual dialectology sees *place* as coloured by non-linguists' social realities. This means that place is not merely a geographical factor when it comes to the perception of different varieties; rather we find close links between place and factors such as language use and identity.

Social reality is a sociological term which reflects the theory that our perceptions of reality are shaped by social interactions (from how we are raised to how we talk about things and the people we surround ourselves with). Initially proposed by Berger and Luckmann in 1966 in their seminal book, *The social construction of reality*, the term has proven influential in social constructivism and beyond. In terms of perceptual dialectology, the notion of social reality supports our investigation of *place* as a subjective entity, the perception of which is coloured and shaped not so much by geography or political issues but rather by a more complex range of phenomena affecting speakers and hearers in different and unique ways.

Research from the UK in the area of perceptual dialectology (most notably by Chris Montgomery) has shown that urban areas are particularly prominent in the perceptual map of the country (Montgomery 2007, 2016; Montgomery & Beal 2011). As suggested by Cramer & Montgomery (2016: xiv), this could be tied to the importance of large urban centres in the seemingly growing development of supra-regional linguistic variants (as investigated extensively by Paul Kerswill, [e.g. Kerswill 2003] but see also Watt 2002). Much of the research carried out in this vein is, not surprisingly, concerned with the perception of different dialect areas. The study presented here,

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however, is not concerned with the perception of geographical areas or linguistic varieties as such but rather with the perceptions of dialect names (or dialect labels, Montgomery 2016), here *Geordie*, *Scouse* and *Cockney*<sup>3</sup>. Specifically, this study asks whether the names of dialects are used exclusively to denote linguistic varieties or if they are also used to denote more than simply language.

Studies in perceptual dialectology and folk linguistics are commonly interested in tapping into non-linguists' perceptions of speakers of certain varieties or the areas where non-linguists believe certain varieties are spoken (see more below). However, this study is more concerned with what the labels *Geordie*, *Scouse* and *Cockney* (rather than the varieties they describe) denote to non-linguists. In order to investigate this, data from Google Trends (a corpus of Google searches with information about time, location and related searches) will be analysed. Google Trends provides detailed information about which search terms users use and it logs a variety of information about the users, such as location, when the search was performed and which other related searches the users performed. This means that it is possible to use the data to map which words or terms are most frequently linked (and, in our case, which are most frequently linked with *Geordie*, *Scouse* and *Cockney*) as well as if there are any differences over time and in different locations. This type of data has not been extensively explored in the field of quantitative sociolinguistics and, as such, this investigation also functions as a pilot study exploring the range of the data as well as investigating the usefulness of it to sociolinguistic and perceptual dialectological study.

## 2. The social construction of dialects

Perceptual dialectology, a branch of folk linguistics, is interested in the opinions about aspects of language held by laypeople, i.e. non-linguists. The seminal work of Dennis Preston within this branch of linguistics has very much shaped the field of current perceptual dialectology, also known as *folk linguistics*. In particular, his 1993 paper entitled "The Uses of Folk Linguistics" gives an introduction to some of the empirical methods employed within his field; map-drawing, imitation, attitude surveys, and applied discourse analysis. Furthermore, his introduction to the *Handbook of Perceptual Dialectology* (1999) also further establishes the relevance of this field to sociolinguistic inquiry.

In other words, perceptual dialectology is not concerned with unearthing language patterns and rules as such, but rather with uncovering what people *believe* are patterns which describe language in use. And just like our perception of reality is coloured by our social histories and experiences, so are our perceptions of language varieties. In this way, what (lay)people believe about language is also shaped by their previous experiences and social encounters. Included in these are also the discourses which surround particular varieties and language variation in general which is why laypeople's ideas about language and variation "can be consequential in the study of patterns of linguistic variation and change" (Johnstone 2013:107), especially when it comes to the study of the dissemination of language ideologies.

### 2.1 The emplacement of 'ways of doing things'

Johnstone (2013) provides a discourse analytical approach to the enregisterment (Agha 2003) of features of Pittsburghese. Johnstone shows how the personal narrative is one way in which particular features of Pittsburgh English are interpreted as indexes of localness (Silverstein 2003) but also, and equally important, how these indices are disseminated through these personal narratives. Johnstone notes that, in contrast to standard or prestige varieties such as RP, "[r]egional varieties are sets of forms that are enregistered according to a different schema (or set of cultural values), one which links variation in speech with place"<sup>4</sup> (2013:115). In addition, something which is also highlighted by Auer

<sup>3</sup> Search terms (dialect labels) are italicised, reference to the actual speech varieties are not italicised.

<sup>4</sup> This key aspect of sociolinguistic study is also discussed in more detail in Auer et al. (2013: 1-17).

et al. (2013:5), regional varieties index “more than geographical meaning; it almost inevitably implies a social evaluation of the speaker”. What this means is that, when we encounter someone, we immediately try to place them geographically and socially (on the basis of our ethnolinguistic knowledge) and thus we cannot escape the link between language and space as we always become emplaced and emplace others. However, as we have seen, place is not the only index carried by language and we can perhaps extend this to include other social evaluations and stereotypes linked to place (for a comprehensive account of this from an exemplar theoretical and socio-cognitive perspective, see Kristiansen 2008). Johnstone touches on this when she talks about “ways of doing things associated with places” (Johnstone 2013:107), i.e. it is perhaps not only language variation (way of speaking) which is linked to place but also other socio-cultural behaviours. For our purposes here, this would mean Geordie is a way of speaking associated with Newcastle upon Tyne, Scouse is a way of speaking associated with Liverpool and Cockney is a way of speaking associated with the East End of London. If we expand the index (in Johnstone’s terminology) to encompass more than simply ‘ways of speaking’, then perhaps ‘ways of doing things in Newcastle’ would include other behavioural patterns (such as going out without a jacket or coat, even in winter). Thus, by extension, the people who ‘speak in the Newcastle way’ also do other things ‘the Newcastle way’, and thus speaking Geordie comes to index more than simply speaking a certain way and being from Newcastle simply by association. The perceptions of ‘ways of doing things in Newcastle’ become inextricably linked with the location of Newcastle upon Tyne and are strengthened through social interactions which confirm them. It is clear that these additional indexes (and even the primary link between geographical place and regional variety) fall into the category of ‘folk perceptions’, i.e. they are as such unsubstantiated (by empirical evidence). However, the idea of them exists and this is perpetuated through discourse (private as well as in the mainstream media) and thus they exist and are real to laypeople, however farfetched and unsubstantiated in ‘reality’ (see also Anderson (2006) for a thorough introduction to the ‘imagined’ aspect of communities and Johnstone (2010) for an application of this to Pittsburgh English).

## 2.2 The perceptual prominence of Geordie, Scouse and Cockney

Montgomery (2016) discusses the perceptual prominence of dialect areas surrounding large urban centres in Great Britain and focuses on the emergence of *Manc*, the variety connected with Manchester. After investigating recognition rates for a variety of different UK dialect areas (both urban and regional), he introduces the term *cultural prominence* as a way of accounting for the very high recognition rates of Scouse, Geordie, Brummie (Birmingham), Cockney and Manc. Montgomery states that cultural prominence “is related to metalinguistic knowledge and refers to the boosting effect that the media or other mechanisms might have on the way in which a location is perceived” (Montgomery 2016: 199). Cultural prominence thus brings certain areas closer “through increased exposure” (Montgomery 2016). Cultural prominence (denoted *cultural salience* in Montgomery & Beal 2011) has also been studied by Johnstone for Pittsburghese (Johnstone 2009, 2011) and Beal for Geordie (2009), and it is closely linked to enregisterment (Agha 2003) in the way that for a dialect to be talked about and linked to a place, particular features of the variety will have to be enregistered and thus become identified as unique to the location in question (regardless of whether or not they are, in fact, unique). The role of the media is further emphasised by Stuart-Smith (2011), who also argues that exposure in the media will influence not only the awareness of varieties but also the ideologies which surround them. Bearing in mind that perceptual dialectology is interested in the perceptions of varieties by laypeople, it is easy to see how increased focus (in the media, in discourse) on certain varieties and certain features as linked to certain places can lead to increased recognition by laypeople and thus an experience of the place in question ‘moving closer’, i.e. becoming perceptually prominent.

The three varieties covered in this paper are all varieties found in large urban centres in England and I will briefly introduce them below. The following sections focus on describing the dialect areas in terms of geographical placement and the etymology of the dialect labels but not the linguistic features of the individual dialects. I do, however, include insights from Montgomery (2012) with regard to the recognition rates of the three varieties, results from a 2013 online poll by ComRes<sup>5</sup> for *ITV Tonight* about perceptions of regional British varieties with regard to friendliness and intelligence, and also examples of stereotypes connected with the three varieties as contributed by users of the online forum *Yahoo! Answers*<sup>6</sup>. Finally, I also include examples from contemporary popular culture of where the dialects can be encountered (e.g. TV-series) both because of Montgomery's *cultural prominence* (based in part on increased exposure by the media) and because these become relevant in the analysis later on.

### 2.2.1 Geordie

The Geordie variety is found in the area in and around Newcastle upon Tyne in northeast England, situated on the north bank of the river Tyne. According to the *Oxford English Dictionary* (OED), the British colloquial use of the word *Geordie* to denote “a native or inhabitant of Tyneside” is first recorded in 1860, however, the use of the word to denote “the dialect or accent of people from Tyneside” is first recorded in 1928 although there is an entry from 1903 listed under the adjectival use of the word where it modifies the word “accents” (OED, *Geordie*). The OED also has a commentary on North-east English dialects by Adam Mearns (Mearns, *no date*), who discusses both the different explanations for how the term Geordie came to denote the variety and inhabitants of Newcastle but also *who* can actually be called Geordies: to people from Newcastle it applies strictly to them, but to outsiders it can apply to people from the whole of the Northeast (see also Durkin 2015).

In addition to the meanings related to Newcastle inhabitants and language variety, archaic and rare uses include coal-miners, a coal-mining lamp (invented by George Stephenson), a sailor from the northeast and a gold guinea coin. With regard to the study carried out below, it is important to note that the label *Geordie* can denote both the language variety itself as well as a person speaking the variety and/or from Newcastle upon Tyne (and indeed the whole of the northeast area). Furthermore, the word can be used both as a noun and as an adjective (OED, *Geordie*). In his 2012 paper, Chris Montgomery summarises two studies of recognition rates of different British varieties. He collected data in 2004 and 2009 across different locations in the north of England and the Scottish-English border region. Here, I have summarised the recognition rates for the Geordie variety for 348 English respondents (Carlisle, Crewe, Hull, Brampton, and Hexham). Montgomery collected data by using the draw-a-map task developed by Preston and the recognition rates are thus an expression of which varieties respondents know and can link to a certain area. The Geordie dialect is a highly recognised variety and appears in the top 3 in all locations and has an average recognition rate of 63% (an average score of the recognition rates given in Montgomery 2012 for the locations mentioned above).

In the 2013 ComRes poll, 56% of respondents found the Geordie variety to be friendly (13% found it not friendly). 19% of respondents found it to sound intelligent and 26% found it to sound not intelligent.

Finally, in a thread from 2008<sup>7</sup>, *Yahoo! Answers* user *Cassie♥* asked the question “Stereotyping People From Newcastle. What stereotypes do you give to worr geordies? ?”. *Cassie♥*'s own opinion

<sup>5</sup> ComRes interviewed 2,006 GB adults between 2 and 4 August online. Data were weighted to be representative of all GB adults aged 18+. ComRes is a member of the British Polling Council.

<sup>6</sup> It was possible to find threads about this very topic so these opinions were not elicited by the author.

<sup>7</sup> <https://uk.answers.yahoo.com/question/index?qid=20080912083633AAYzE56&page=1>

is that common stereotypes include that “we are all chavs with 14 children by the age of 25 And that we are all violent, arrogant and sound very german when we talk fast...”. The contribution voted ‘best answer’ is from *Harvester69* who says “thought it was all brown ale, women with bricks in their handbags & why-i-man but no doubt I’m wrong. as for no coat<sup>8</sup>, thats a northern thing even in the rain & snow”. User *JaxA* states that they find Geordies to be “Witty, friendly, with an unintelligible accent, till you get used to it. Also, with a strong tendency to stagger around Whitley Bay on January evenings with hardly any clothes on. And lot’s of bright orange make-up. Good mates though, and great work-mates. Trustworthy”. User *Rauls Ghost* links Geordies with “Women who are good in a fight” and user *D B* thinks of “dead sexy men with voices that make you melt”. A few users also refer to representations of Geordies in the media (the teen TV series *Byker Grove* (1989-2006), the TV comedy-drama *Auf Wiedersehen, Pet* (ITV 1983-86, BBC One 2002-04) and the comic strip *Viz*).

As we will see in the Google Trends output, the popular reality TV series *Geordie Shore*, broadcast in the UK on MTV, illustrates the cultural prominence of Geordie and the impact of broadcast media in disseminating a specific image of those who speak this variety.

Image 1: *Geordie Shore* cast members, season 1



(Image from *MTV.co.uk*)

*Geordie Shore* was first broadcast in May 2011 and is still running at time of writing (February 2017). According to *metro.co.uk*, the first episode was watched by over 1.3 million people across different platforms (Hooton 2011). The show follows eight young men and women (all from the Northeast although not all from Newcastle) who have to live together in a shared house in Newcastle. Their day-to-day life revolves around going out, getting drunk, arguing, falling in love, having sex, and so on. Some seasons have seen the housemates (who sometimes vary) go abroad to e.g. Australia and Mexico where they carry on their adventures in a similar manner (Duke 2015). The show divided opinions when it first aired (and continues to do so) and Duke (2015) calls it “real TV marmite” (subheading) and states that some viewers “branded the cast a disgrace to Newcastle” (line 17).

<sup>8</sup> This refers to comments made by other users who all mention that young people go out with no coats on when they go out drinking and partying.

### 2.2.2 Scouse

The Scouse variety is found in the Liverpool area of North-West England. Liverpool is situated on the eastern bank of the river Mersey which runs out into Liverpool Bay. According to the OED, *Scouse* is a slang term used to describe “a native or inhabitant of Liverpool” (the first record being from 1945) as well as “the dialect of English spoken in Liverpool” with the first record being from 1963. However, the very first entry in the OED for *scouse* (no capital ‘s’) is for the dish called *scouse*, a kind of stew also called *lobscouse*. It is apparent from the 1945 record that the term *Scouse* is used to denote inhabitants from Liverpool exactly because they eat *scouse* (OED, *scouse*). The OED also lists the term *Scouser* as being a slang term for a person not only from Liverpool but also from Merseyside (OED, *Scouser*). The first record for *Scouser* is from *The Times* in 1959 where we actually see an example of the link between *Scouser*, Liverpool and the distinct variety of English: “Their [*sc.* Liverpool workers’] catarrhal speech would identify them as ‘Scousers’ wherever English is recognized” [addition in original]. Interestingly, the OED has no additional commentary section on Scouse or Merseyside speech. For the purposes of the study reported below, it is indeed important to bear in mind that the term *Scouse* can refer to a type of stew (associated with Liverpool), a language variety and an inhabitant of Liverpool and, perhaps, Merseyside.

The studies reported in Montgomery (2012) reveal that Scouse is another highly recognised variety and it features in the top 3 with an overall recognition rate of 64%. The ComRes regional accent survey reveals that 42 % of Brits perceive speakers of this variety to be friendly (26% not friendly) and 15% found it to sound intelligent (37% rated it ‘not intelligent’).

*Yahoo! Answers* user *Jbrie* asked “What are the typical stereotypes about Liverpooldians (people from Liverpool, UK)?”<sup>9</sup> in 2011, and the comments on this thread reveal that Scousers are stereotypically thought of as being “rude noisy scruffy and very very generous, kind helpful and often wisecracking because they like to think they are comedians” (contributed by user *Scouse*). User *TSK* states that “Some ARE scallies and rogues, but most are fine. They dress up to go to Tesco’s. They have style!... It is so NOT typically ENGLISH. It is unique and that is the charm of the place!”. In 2009, a now anonymous user asked “What stereotypes do you have of people from Liverpool?”<sup>10</sup> and in this thread we first of all find a contribution from user *Scouse* who states the following as a response to some of the other comments made on the thread:

Yes I do often begin a sentence with our or R but it usually goes on to refer to a member of the family or our dog or maybe, our house, our street, our church etc. I am not a Catholic, a window cleaner, pick pocket, burglar, car thief etc. nor have I spent time as a guest of Her Majesty, my worst crimes are motoring offences worth 3 points at a time over 9 years

In this thread, we also find references to representations of Scousers from the media, mainly to the characters known as *The Scousers* which featured in *Harry Enfield’s Television Programme* on the BBC which ran in the 1990s. *The Scousers* made the catchphrase “Calm down, calm down!” famous and sported a distinct look (shell suits, short curly hair, large moustaches).

As this will become important in our interpretation of the Google Trends data, it should be mentioned that Liverpool at one point also had a (scripted) reality TV series detailing the glamorous lives of a handful of local inhabitants called *Desperate Scousewives*. This show, however, did not become a success and was aired for only one season (eight episodes starting in November 2011 and ending in January 2012, according to IMDb.com).

<sup>9</sup> <https://answers.yahoo.com/question/index?qid=20110320221912AA8QYR7>

<sup>10</sup> <https://uk.answers.yahoo.com/question/index?qid=20090522054514AArnDfM&page=1>

### 2.2.3 Cockney

The Cockney variety of English is usually associated with London's East End. According to the OED (OED, *cockney*), the term *Cockney* was first used to refer specifically to "a person born in the city of London" in 1600 and the "the dialect or accent of the London cockney or of those from the East End of London generally" in 1890. As an adjective, the first entry with the meaning "pertaining to or characteristic of the London Cockney" is from 1632. The OED also lists a range of other rare or obsolete meanings of the word *cockney*, but it seems that current usage is now limited to referring to either the variety or the speakers of the variety. Here, the OED again offers a more elaborate commentary (Green, *no date*), detailing both the definition of Cockney but also the related *Cockney rhyming slang* which he introduces in the following way: "If there is a stereotype of what the world sees as 'typically Cockney' then it is undoubtedly rhyming slang." He concludes by noting that other language varieties are now also found in London: Mockney, Estuary English and Multi-Ethnic London English, so while Cockney remains very much a variety enregistered as pertaining to London, it is not the only one. As we can see from the above, *Cockney* can thus also be used to refer to both the language variety but also to its speakers.

The studies reported in Montgomery (2012) also found Cockney to be a well-known variety across the 5 locations. Indeed, it features in the top 5 with a recognition rate of 43%<sup>11</sup>. The 2013 ComRes survey asked participants about "London (Cockney)" and 49% of respondents found the variety to sound friendly (19% not friendly). 18% of respondents found it to sound intelligent and 32% of respondents indicated that they found speakers of this variety to sound not intelligent.

The stereotypes of Cockneys mentioned in a *Yahoo! Answers* thread from 2010 started by user *Hannah S*, who asked "What are your stereotypes of Cockneys and Yorkshiremen?"<sup>12</sup>, show that some of the common stereotypes include "salesmen, del boy type" (contributed by a now anonymous user) and user *Frustrated* adds that they think of the following:

characters on Eastenders like Shane Richie, who played Alfie Moon, Mike Reid and current characters like Barbara Windsor, Dot Cotton, Charlie Slater, Mo and Stacey. We have the characteristic dropping of consonants and the rather slovenly pronunciation with the rhyming slang, which is typical of the Cockney. You might get the feeling that they might be 'wide boys' and you might not want to trust them too far.

With regard to Cockney in broadcast media, one famous example is the BBC soap TV series, *EastEnders* (which was also referenced in the comments on *Yahoo! Answers*). The show first aired in February 1985 and it is still being broadcast at time of writing. It has remained a very popular TV show in the UK and has won several awards (IMDb, *EastEnders*).

## 3. The Google Trends corpus and data extraction

This section briefly introduces the online corpus and data extraction tool called Google Trends (found at [www.google.com/trends](http://www.google.com/trends)) and also outlines which features have been used in the present study and how the data output was extracted.

### 3.1 Google Trends and its functions

Google Trends is a free and publicly accessible corpus which consists of a random sample of all google searches from January 2004 until now (Google Trends even offers real-time data). The Google Trends webpage ([www.google.com/trends/explore](http://www.google.com/trends/explore)) offers a range of tools to explore popular search

<sup>11</sup> Montgomery's studies also feature a London variety, but it is unclear what the two labels refer to exactly. As the present study is focused strictly on the dialect labels themselves, the London label will not be considered here.

<sup>12</sup> <https://uk.answers.yahoo.com/question/index?qid=20100115015545AAWFbcC&page=1>

terms and topics, define your own search queries (delimiting topic or term, location and time) and see related searches (within your specified time period and location). The different functions are described on the page itself, but more information can also be found in the support pages (<https://support.google.com>) and in Rogers (2016). The dataset is anonymized, aggregated and categorised into group search topics. In this study, I will not consider the ‘topic’ or ‘category’ functions as the focus here is on the exact search terms *Geordie*, *Scouse* and *Cockney*, their popularity over time, their popularity across locations and, most importantly, the related search terms. The data available are also normalised and indexed out of 100. This has important implications for how the output of the searches is presented; first of all, the data is presented as a proportion of all Google searches on all topics (in your specified location and time period). This is useful as it allows you to easily compare search term search volumes over time without adjusting for overall or total search volume (as Google Trends has already done that for you). Secondly, the index from 0-100 means that it is easy to compare search volume across time and locations; a score of 100 indicates the maximum search interest and a score of 50, for instance, then describes a search volume which is half the size of the maximum search interest.

The online tool presents the results of your search queries in neat, interactive graphs (showing volume of searches over time) and maps (showing in which areas or locations the search query was the most popular). You are also able to download a .csv file with the normalised data (values 0-100 and distributed either on weeks or locations depending on your focus) as well as the lists of top related search queries (which are also allocated a value from 0-100). This allows researchers to carry out further statistical analyses and visualisations using a range of programmes. Finally, you are able to enter up to five search terms into Google Trends and the tool will then map all search terms onto the same graphs and maps (for ‘interest over time’ and ‘interest by region’). This allows for very quick (although perhaps superficial) comparisons and you are able to download .csv files which contain the comparative data.

### 3.2 Data extraction

For this study, I extracted a range of output using the tools available for the three separate terms *Geordie*, *Scouse* and *Cockney* as well as a comparison search of all three terms. As mentioned above, I searched for these as ‘search terms’ and not ‘topics’ as I was interested in searches for these exact words (searching for ‘topics’ allows you to search across languages, i.e. a search for the topic ‘English grammar’ will also include searches for ‘engelsk grammatik’ (in Danish) and similar in other natural languages). The time period specified was from January 2004 (which is the earliest available data) until time of writing (late January 2017), i.e. a span of 13 years.

For each dialect name and the comparison, I then extracted output based on three locations: worldwide, UK and England. It should be said that most of the searches indeed came from the UK (this is clear from the worldwide search) and that UK searches are responsible for most of the patterning in the worldwide output. Within the UK, surprisingly, it was not always England which accounted for the majority of the searches. This was visible in the UK output. However, as all of the dialect names refer to English dialects (as opposed to Scottish, Welsh or Northern Irish), it would perhaps be interesting to see *where* in England people might be searching for these names; would it be people residing in the area which the dialect name covers or outside? The comparison search as such did not provide new results but it did create graphical output which made comparisons across the three search terms easier.

Each search also generated a list of related search queries which can be sorted according to two metrics; ‘rising’ and ‘top’. Related search queries are simply queries which users who searched for the original term, for instance *Geordie*, also searched for. The ‘rising’ search queries are related search terms which show the largest increase in search frequency whereas the ‘top’ search queries are indeed

just the most popular (again indexed by a value of 0-100) related search terms. This study looks only at the ‘top’ related search queries as these show us which aspects of *Geordie*, *Scouse* and *Cockney*, respectively, the users are interested in.

#### 4. Analysing Google Trends output

In this section, I will provide an overview of the output from Google Trends. As such, the online tools have already sorted and analysed the raw data for us, and thus the kinds of analyses carried out here can hardly be said to be quantitative, although they do rely on the numbers returned by Google Trends (as outlined above). I will treat each dialect term separately, starting with the worldwide results and ‘zooming in’ on first the UK and then England. I offer summarising and comparative remarks at the end of this section.

##### 4.1 *Geordie*

When looking at the worldwide ‘interest over time’ (see Figure 1 below from Google Trends), we notice a sharp increase in search queries in 2011. Looking at the numbers from 2011 in more detail<sup>13</sup>, we see the following development (Table 1 below).

Figure 1: Worldwide interest over time, *Geordie*

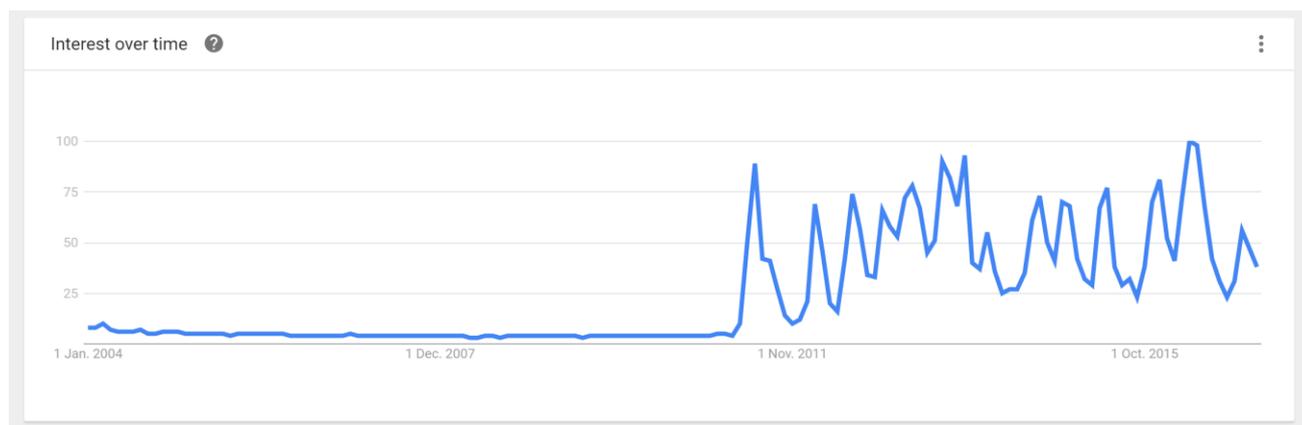


Table 1: Excerpt of index values for worldwide interest over time, *Geordie*

2011	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Index value	5	5	4	10	51	89	42	41	27	14	10	12

A likely explanation for the sudden spike would be the release of *Geordie Shore*, the TV reality series introduced above which first aired 24 May 2011 in the UK. At time of writing, the last episode to be aired was season 14, episode 10 which aired on 20 December 2016 (IMDb, *Geordie Shore*). Indeed, if we map the spikes in the Google Trends data with the release dates for the 14 seasons of *Geordie Shore*, we see a clear connection as shown in the table below. The search volume index values given in brackets indicate the value for the preceding and following months.

<sup>13</sup> This can be done either online by holding the cursor over the graph or by looking at the downloaded .csv file which lists the index values month by month.

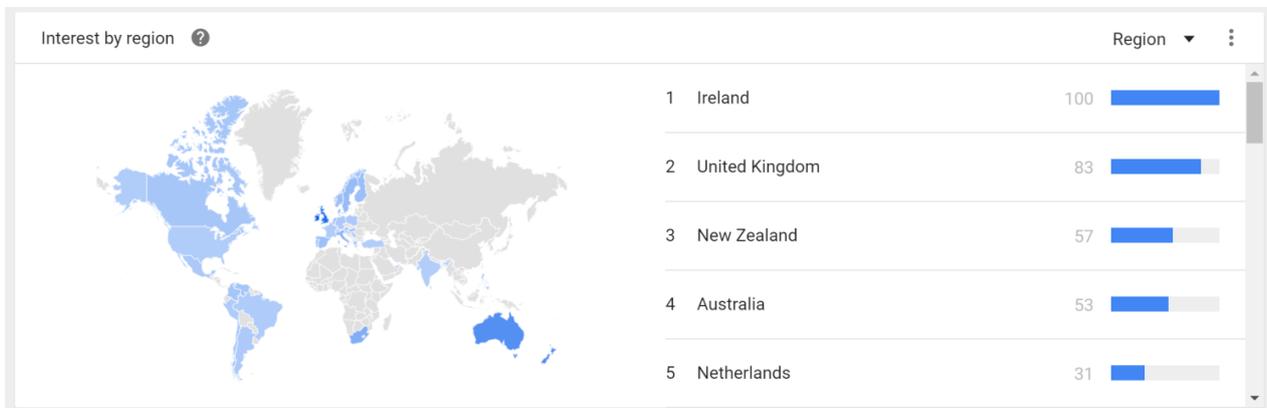
Table 2: *Geordie Shore* season dates and worldwide search volume

Timeline	Search volume index	GS season start date
May 2011	(10) 51 (89)	Season 1, 24 May 2011
June 2011	(51) 89 (42)	
Feb 2012	(21) 69 (46)	Season 2, 31 Jan 2012
June 2012	(16) 42 (74)	Season 3, 26 June 2012
July 2012	(42) 74 (57)	
Nov 2012	(33) 66 (58)	Season 4, 6 Nov 2012
Feb 2013	(53) 72 (78)	Season 5, 19 Feb 2013
March 2013	(72) 78 (67)	
July 2013	(51) 90 (82)	Season 6, 9 July 2013
Aug 2013	(90) 82 (68)	
Oct 2013	(68) 93 (40)	Season 7, 17 Sep 2013 *
July 2014	(35) 61 (73)	Season 8, 22 July 2014
Aug 2014	(61) 73 (50)	
Nov 2014	(41) 70 (68)	Season 9, 28 Oct 2014
April 2015	(29) 67 (77)	Season 10, 7 April 2015
May 2015	(67) 77 (38)	
Nov 2015	(38) 70 (81)	Season 11, 20 Oct 2015
Dec 2015	(70) 81 (52)	
March 2016	(41) 72 (100)	Season 12, 16 Mar 2016 (the season ended 3 May)
April 2016	(72) 100 (98)	
May 2016	(100) 98 (668)	Season 13, 10 May 2016
Nov 2016	(31) 56 (47)	Season 14, 25 Oct 2016

\* Season 7 ended 22 Oct with a very popular character, Charlotte (Image 1, front row centre), leaving the house.

Figure 2 below indicates that Ireland is the region (Google’s terminology) with the highest amount of search volume followed by the UK (notice the index values at the far right). Looking at the top 5 countries, we can notice that all but one (The Netherlands at number 5) are English-speaking countries. *Geordie Shore* has, however, also been aired on MTV Netherlands.

Figure 2: Worldwide interest by region, *Geordie*



It is worth bearing in mind here that the index values represent proportional values such that a higher value means a higher proportion of all queries in that location and NOT a higher absolute query count. This means that a smaller country (such as Northern Ireland) where, say, 10% of all search queries are for *Geordie* will get twice the index value of a very large country (such as England) where 5% of the search queries are for *Geordie* even though in absolute terms, the actual search volume is larger in the larger country. A factor which may influence this distribution is that the demographic most likely to watch and be interested in *Geordie Shore* is also the demographic which spends most time online and is likely to carry out the bulk of search queries on Google (across all topics).

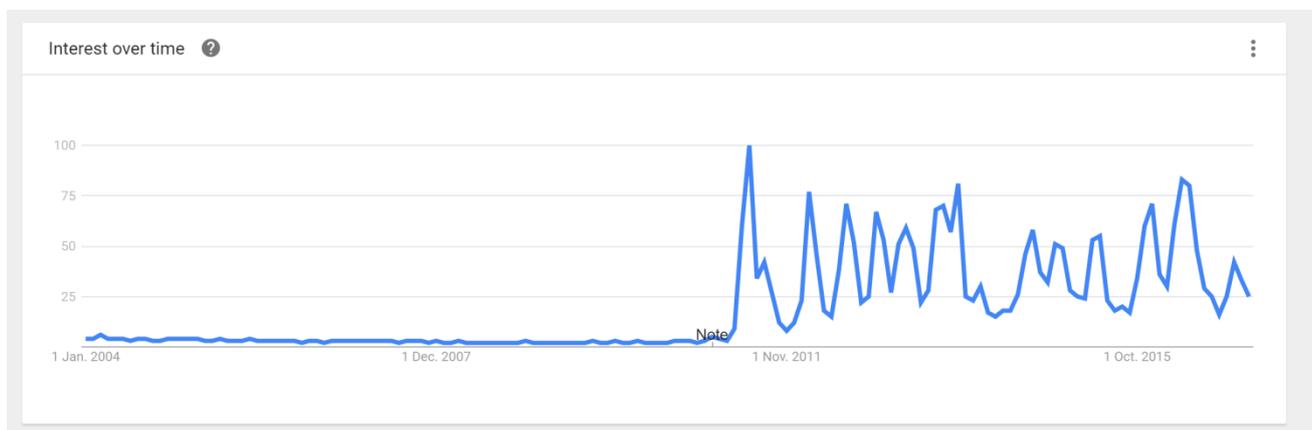
Finally, the top 5 related search queries worldwide confirm the interest in *Geordie Shore* as shown below in Table 3. ‘Charlotte’ is a cast member on *Geordie Shore*.

Table 3: Worldwide top related search queries, Geordie

Top related queries	Index value
geordie shore	100
geordie shore watch	10
geordie shore online	10
Charlotte	10
charlotte Geordie	5

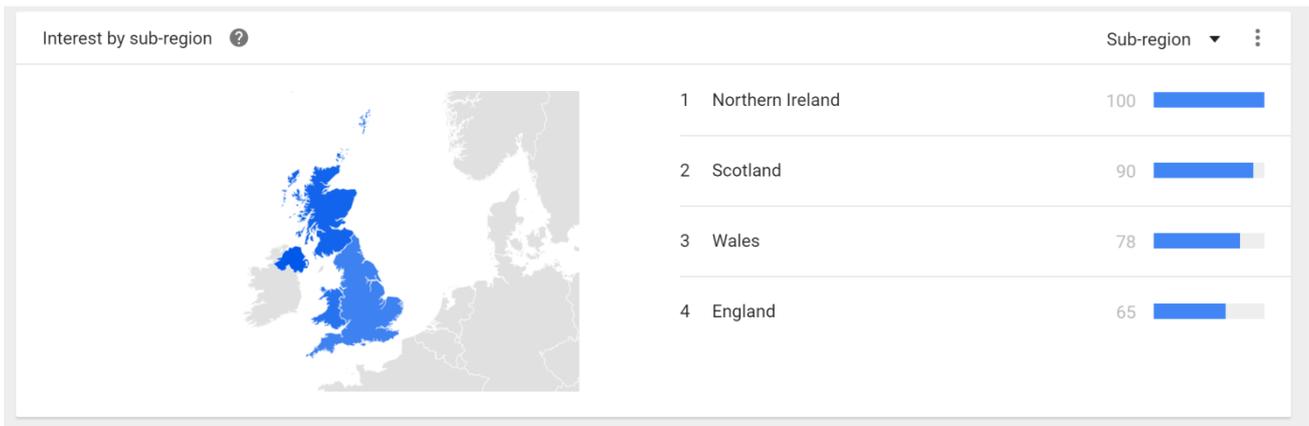
Looking only at UK results, we see a similar spike in searches around 2011 (see Figure 3). The ‘note’ which we see around January 2011 flags up the fact that Google improved their geographical assignment from 1 January 2011.

Figure 3: UK interest over time, Geordie



Within the UK, we see that the highest search volume for *Geordie* is from Northern Ireland with Scotland and Wales also surpassing England in search volume which is, perhaps, surprising (Figure 4).

Figure 4: UK interest by sub-region, Geordie



Again it is worth bearing in mind how the index values we see are calculated and the fact that they represent proportional values in relation to the overall search activity in each location.

Looking at the top 5 related searches, we see a similar picture to the worldwide results (below in Table 4).

Table 4: UK top related search queries, Geordie

Top related queries	Index value
geordie shore	100
geordie shore watch	15
geordie shore online	15
geordie shore watch online	10
charlotte	5

Finally, zooming in on the search queries within England only, we see that the same pattern forms with regard to ‘interest over time’ (in Figure 5). Looking at the volume of searches performed in different locations (cities) across England, perhaps not surprisingly, we find that the top 5 locations are all within the Northeast (Figure 6).

Figure 5: England interest over time, Geordie

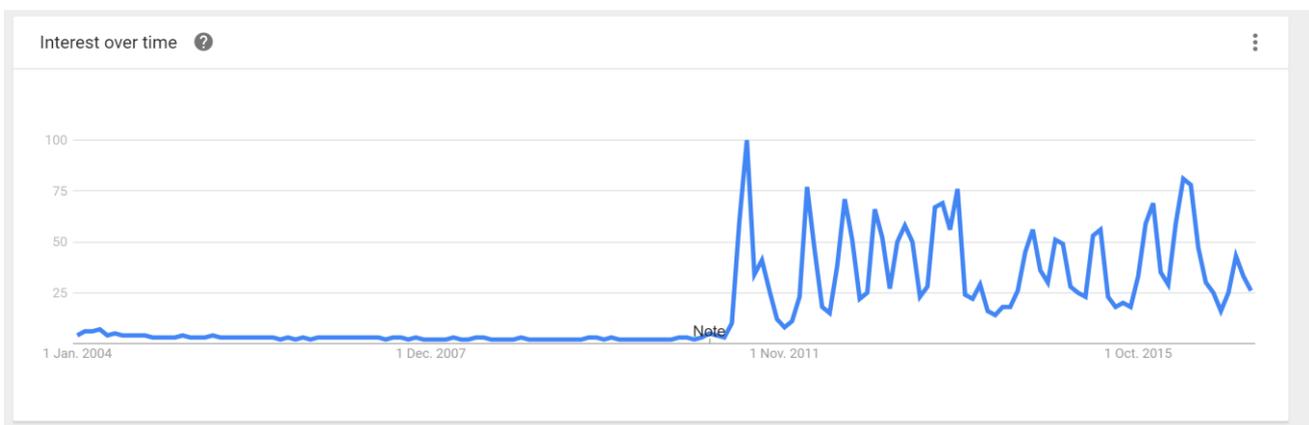
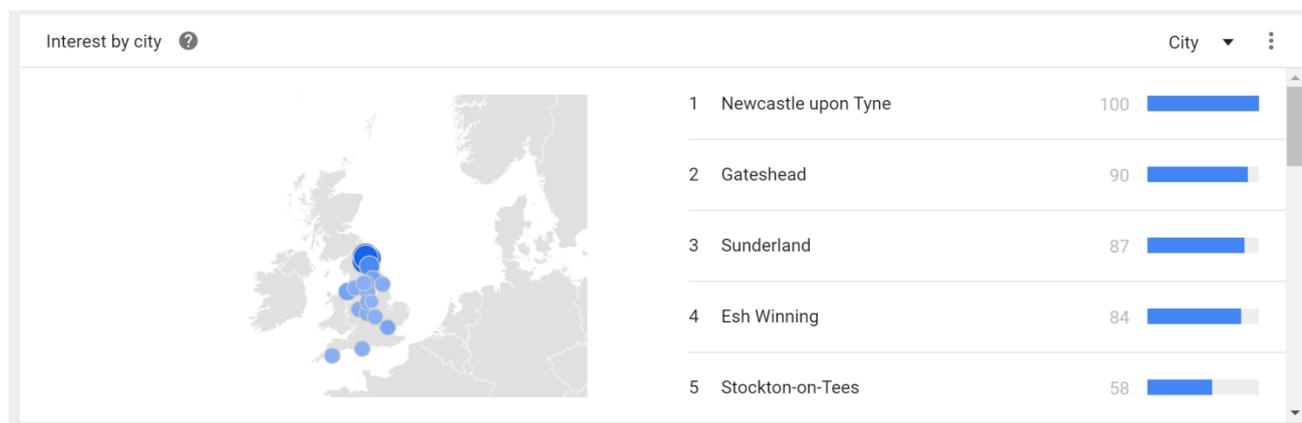


Figure 6: England interest by city, Geordie



Gateshead is located across from Newcastle on the southern bank of the river Tyne. Sunderland is approx. 20km south of Newcastle and within the metropolitan county of Tyne & Wear. Esh Winning and Stockton-on-Tees are both located within County Durham (the county just south of Tyne & Wear). The first non-Northeast location on the list is Liverpool at no. 6 with an index value of 35.

The top related search queries remain more or less unchanged as we can see below in Table 5.

Table 5: England top related search queries, Geordie

Top related queries	Index value
geordie shore	100
watch geordie shore	15
geordie shore online	15
watch geordie shore online	10
charlotte geordie shore	5

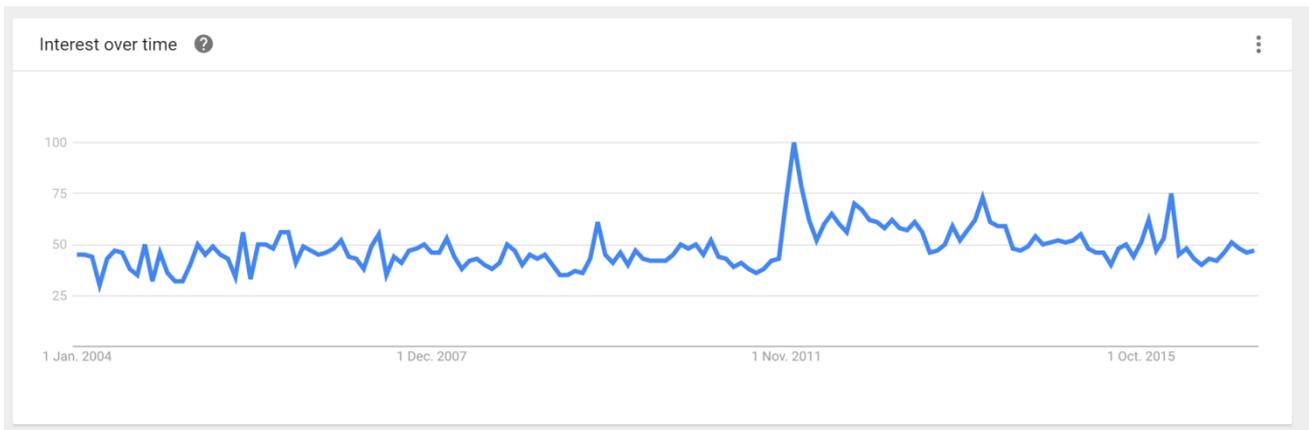
These results suggest that interest in Geordie (as expressed via Google searches) is linked to *Geordie Shore*. These results also provide a good example of how Google Trends as a search engine can be used for exploratory research. Future studies could be advanced further by combining these initial probes with other types of data such as interviews.

With regard to what the dialect label itself correlates with (as expressed in the search activities of Google users), we see that it is not strictly the Geordie language variety but rather a whole host of socio-cultural values connected with the TV program, such as partying, drinking, having sex, and a care-free lifestyle. However, the Geordie dialect (and other, northeast regional varieties) does of course feature in the TV show and the housemates even make up their own words (e.g. *tash on*, a phrasal verb which means to kiss someone).

#### 4.2. Scouse

The worldwide searches for *Scouse* show a steadier distribution over time, although there is a spike in 2011 again.

Figure 7: Worldwide interest over time, Scouse



If we examine the index values around December 2011, we see the following:

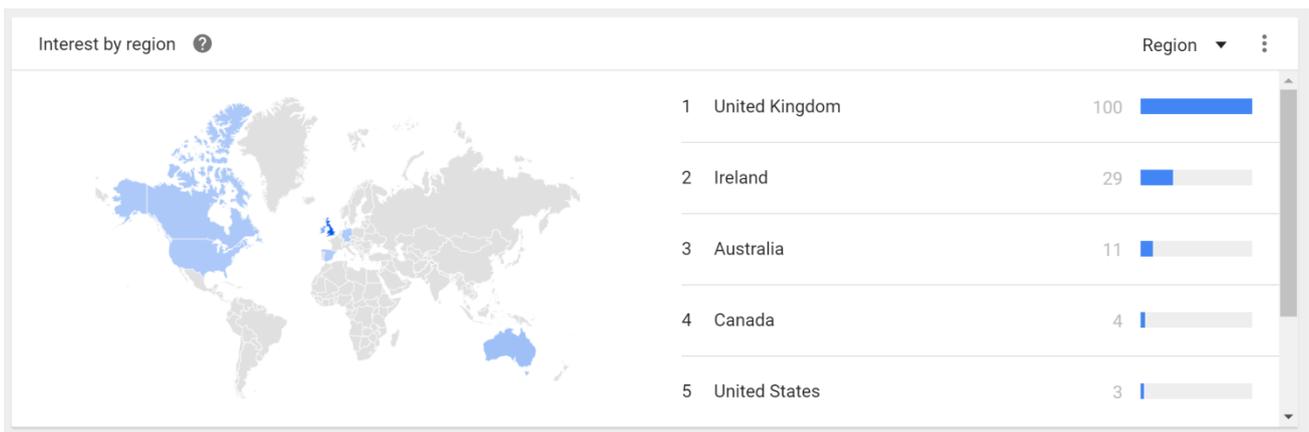
Table 6: Excerpt of index values for worldwide interest over time, Scouse

2011	July	Aug	Sept	Oct	Nov	Dec	2012	Jan	Feb	March	April	May
<b>Index value</b>	36	38	42	43	73	100		78	62	52	60	65

Again, if we look to popular culture we can find a possible explanation for this increase: the scripted reality TV show *Desperate Scousewives* which aired in the UK (on E4) for the first time 28 November 2011. This program only ran for one season with 8 episodes (the final episode aired January 2012).

If we look at how the search queries are distributed across regions worldwide, we see the following (Figure 8):

Figure 8: Worldwide interest by region, Scouse



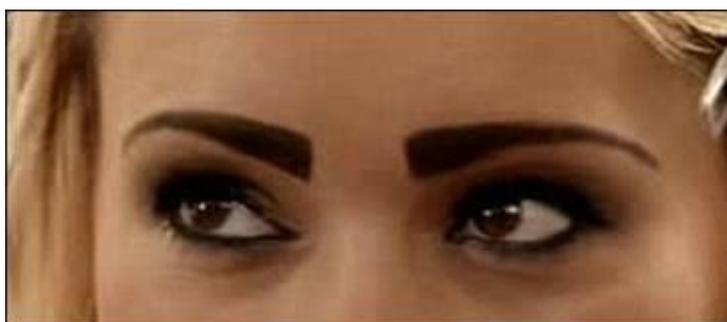
As we can see from the top 5 regions on the right hand side, the UK is well ahead of the others on the list. These findings show that interest via Google searches in the term *Scouse* is indeed largest in the UK and, to an extent, Ireland. The table below shows the top five related search queries worldwide and this specifies in which connection users search for Scouse.

Table 7: Worldwide top related search queries, Scouse

Top related queries	Index value
liverpool scouse	100
scouse brow	95
Liverpool	95
scouse accent	70
scouse recipe	45

As we can see from the index values, the top three related search queries are all quite popular. These three link Scouse, firstly, to Liverpool and, secondly, to the term ‘Scouse brows’ – a name used to denote a certain way of styling one’s eyebrows using makeup (see image below). In fact, the ‘Scouse brow’ originated on *Desperate Scousewives* (Cochrane 2016, Telegraph 2012) and also became a go-to style for Liverpool-based celebrities such as Coleen Rooney. In a poll reported in the Mail Online (Winter 2014), this particular style of brows were, however, voted the “worst beauty crime” and indeed Kirwin (2016) reports, in the *Liverpool Echo*, on how to get the “Un-Scouse brow”.

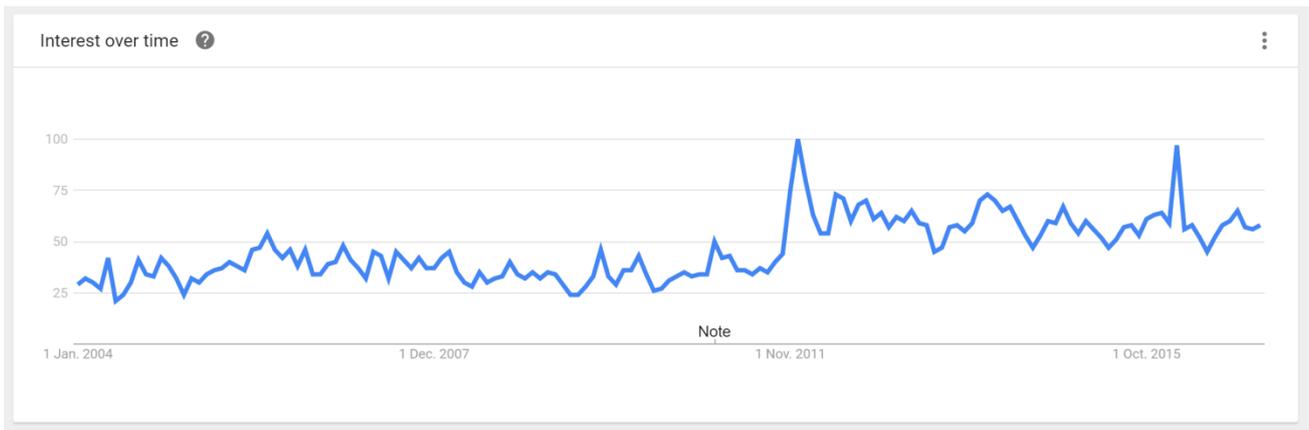
Image 2: The Scouse brow

(Image from *Desperate Scousewives*, E4)

We do also see a specification of Scouse as an accent in the fourth place on the list but, as such, Scouse seems to be first and foremost linked to Liverpool, i.e. representing a strong local index without specifying a linguistic variety. ‘Scouse recipe’ refers to the recipe for the traditional stew, *lobscouse*.

If we narrow our search and look only at the UK, the interest over time is quite similar to the worldwide interest, although we do have a second spike occurring in February 2016 with an index value of 97.

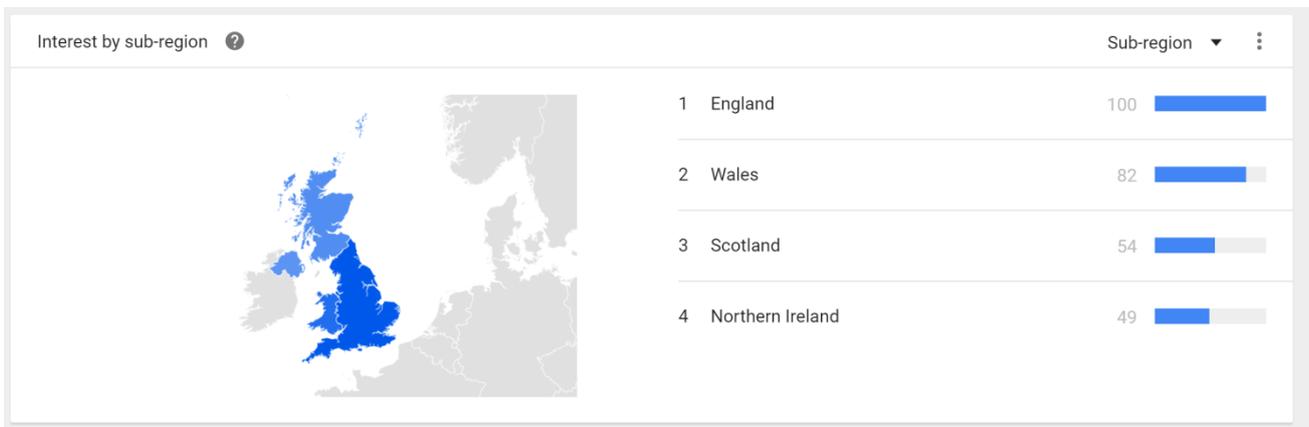
Figure 9: UK interest over time, Scouse



The second spike is very sudden and short (January 2016 has a value of 59, March 2016 has a value of 56). If ‘zooming in’ on the dates, Google Trends reveals that the spike actually occurred on 12 Feb. It is unclear, however, what may have caused this particular spike. The top related search terms for February 2016 are ‘Scouse brow’ (with a value of 100) and ‘scouse recipe’ (with a value of 10) (the third on the list is ‘what is a scouse brow’ also with a score of 10).

When we look at just the UK, we see that the largest interest in Scouse is found in England.

Figure 10: UK interest by sub-region, Scouse



Considering the geographical location of Liverpool, it would perhaps make sense that the largest interest is found in England and closely followed by Wales as Liverpool is located only around 20km from the Welsh border.

The top 5 related searches in the UK were quite similar to those seen in Table 7 above.

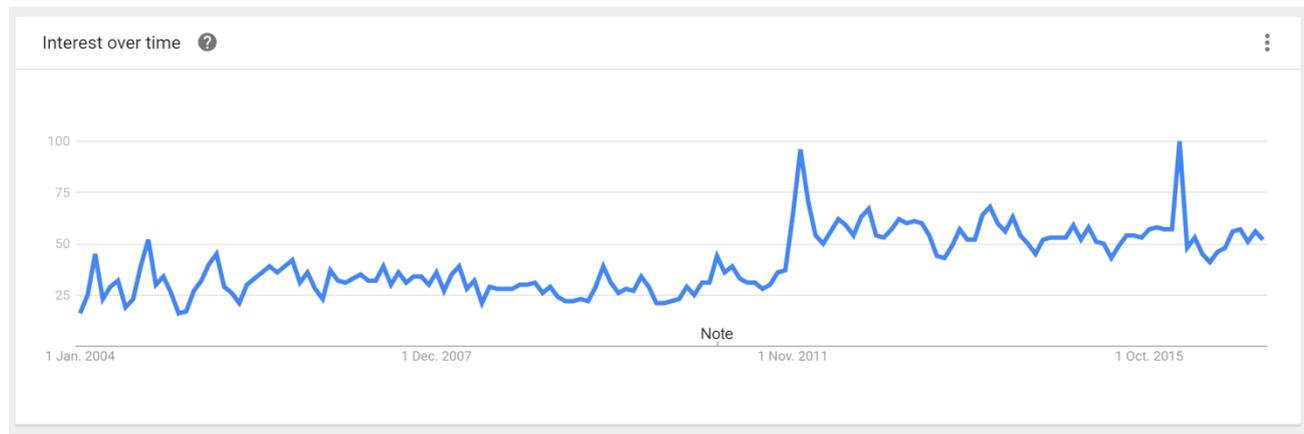
Table 8: UK top related search queries, Scouse

Top related queries	Index value
liverpool	100
liverpool scouse	95
scouse brow	85
scouse accent	45
scouse house	40

Again we see an interest in the city of Liverpool and the ‘Scouse brow’. ‘Scouse house’ refers to a type of house music.

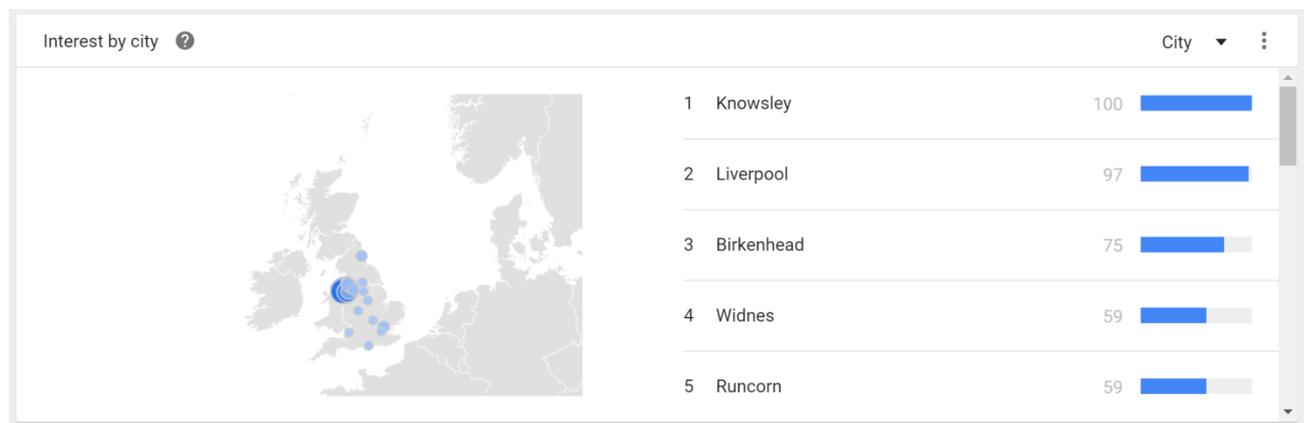
The English only interest over time reveals a similar pattern, again, although here we can clearly see the two spikes in December 2011 and February 2016. Looking in detail at the related searches etc. only for February 2016, similar results to those reported above for the UK are revealed.

Figure 11: England interest over time, Scouse



If we look at the interest as distributed on cities in England, we see the following:

Figure 12: England interest by city, Scouse



Knowsley is a borough on Merseyside, the village of Knowsley is located approximately 15km from Liverpool. Birkenhead is situated across the river Mersey, only approximately 5km from Liverpool. Widnes is located in the county of Cheshire, approximately 20km east of Liverpool with Runcorn situated on the opposite bank of the river Mersey. Thus we can see that all of the top 5 locations are very close to Liverpool.

The top 5 related search queries in England are shown in the table below and here we again find that the highest index values are achieved by search terms relating to the city of Liverpool and the ‘Scouse brow’.

Table 9: England top related search queries, Scouse

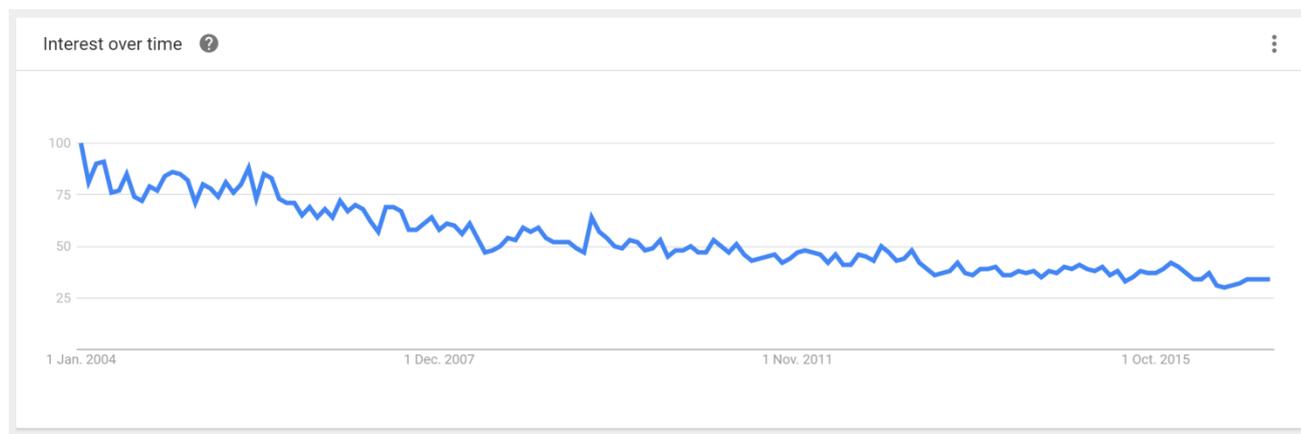
Top related queries	Index value
liverpool	100
scouse brow	95
scouse accent	45
scouse house	45
Accent	45

To sum up on the findings for the dialect label *Scouse*, we saw that the media and popular culture again were large influences on the search queries which Google users have entered. As opposed to the findings for *Geordie*, which were completely dictated by *Geordie Shore*, we did also see an interest in Liverpool as a place or town.

### 4.3. Cockney

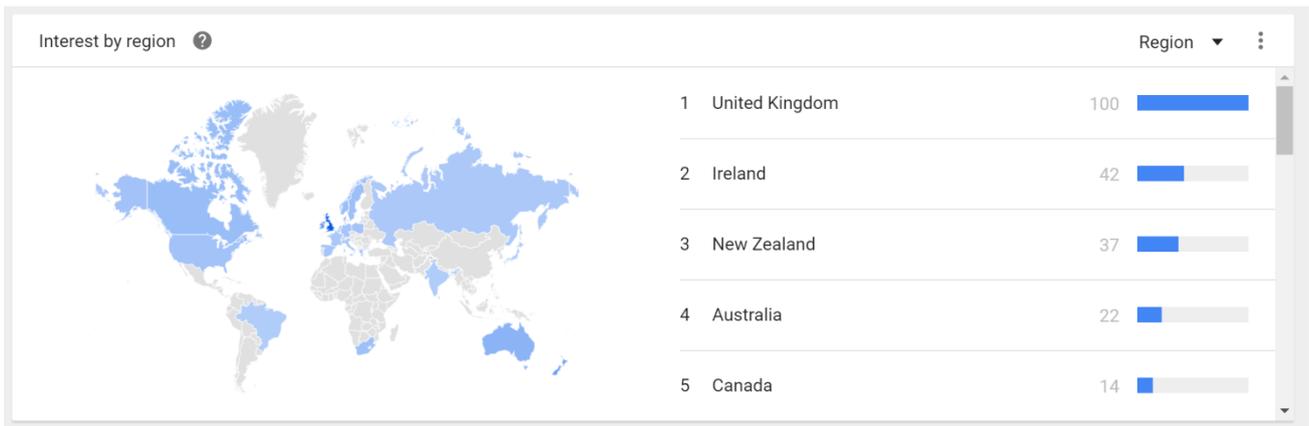
Looking at Cockney, we can see that the worldwide interest over time (Figure 13) shows a decline; the highest index value of 100 is found in January 2004. Also, we have no large spikes like we saw for both *Geordie* and *Scouse*.

Figure 13: Worldwide interest over time, Cockney



Looking at the worldwide interest by region, the following distribution occurs:

Figure 14: Worldwide interest by region, Cockney



We see that the highest search volume came from the United Kingdom (100) followed by Ireland with an index value of only 42.

The top 5 related searches worldwide are shown in the table below.

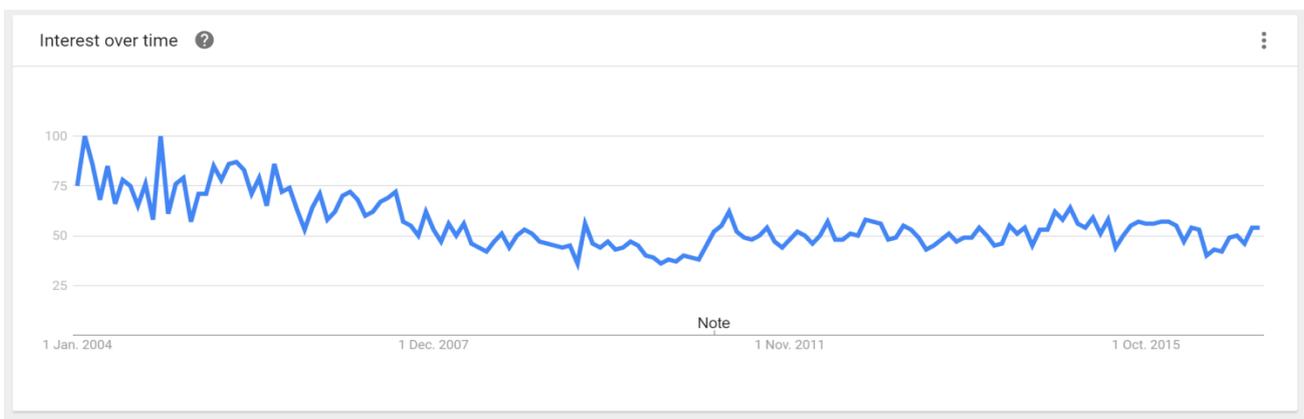
Table 10: Worldwide top related search queries

Top related queries	Index value
cockney slang	100
Slang	100
cockney rhyming	65
rhyming slang	65
the cockney	20

When looking at the top 5 related searches worldwide for Cockney, we immediately see that they are different from those of Geordie and Scouse in the sense that they are exclusively occupied with language.

Zooming in on only the UK, we see that the interest over time looks similar to the worldwide pattern in that it is generally also decreasing, although we can also notice two spikes on the left-hand side of the graph. The two spikes occur in February and December 2004 (both have an index value of 100).

Figure 15: UK interest over time, Cockney



Both of these spikes are quite small and short as we can see from the table below.

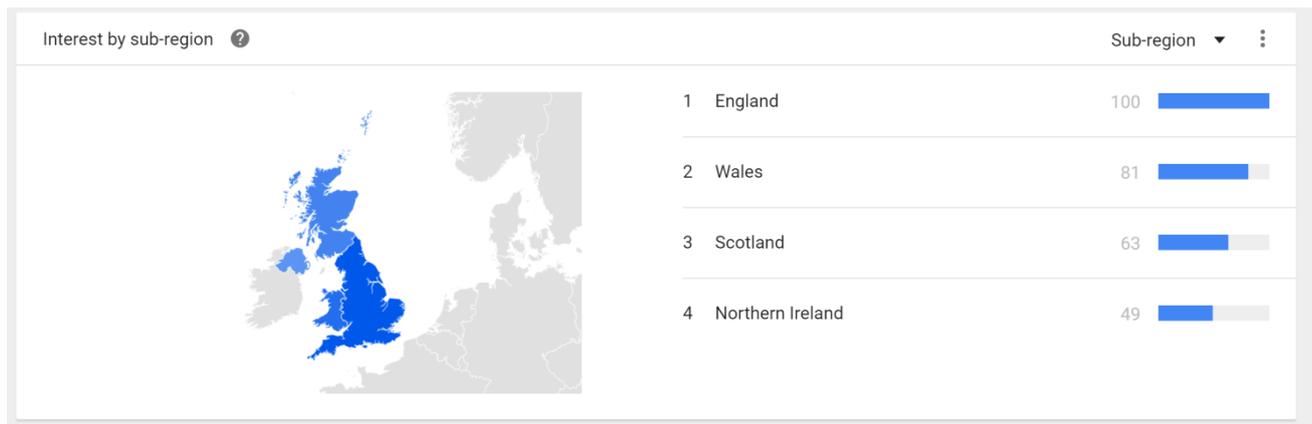
Table 11: Excerpt of index values for UK interest over time, Cockney

<b>2004</b>	<b>Jan</b>	<b>Feb</b>	<b>March</b>		<b>Nov</b>	<b>Dec</b>	<b>2005</b>	<b>Jan</b>
<b>Index value</b>	75	100	86		58	100		61

It is unclear what may have caused these spikes. The top related search term for February 2004 is ‘Cockney rhyming slang’ with an index value of 100 (Google Trends lists just the one). The region with the most activity is Wales with a value of 100 (followed by Scotland with a value of 57) and the bulk of the searches were performed on 29 February which has a value of 100. The December spike shows very similar patterning with regard to sub-region and related queries although here, the searches seem to be more evenly distributed with highs on 10 December (100), 21 December (96) and 28 December (88).

Looking at the four ‘sub-regions’ in the UK, we see that the highest proportional search interest is from England if we look across the full time range.

Figure 16: UK interest by sub-regions, Cockney



The top 5 related search queries within the UK are very similar indeed to those given above in Table 9 for the worldwide results. The main difference is really that all five related queries have index values of 65 and above.

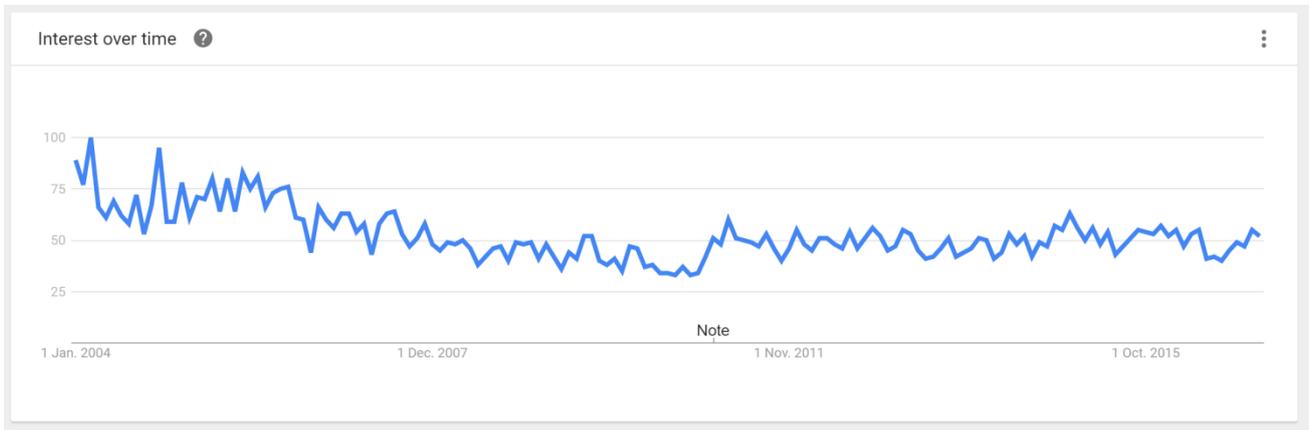
Table 12: UK top related search queries, Cockney

<b>Top related queries</b>	<b>Index value</b>
Slang	100
cockney slang	100
cockney rhyming	70
cockney rhyming slang	65
rhyming slang	65

If we look at the Google searches carried out in England only, we see that the interest over time is similar to the UK-wide interest and we also see the two peaks although these occur in March 2004

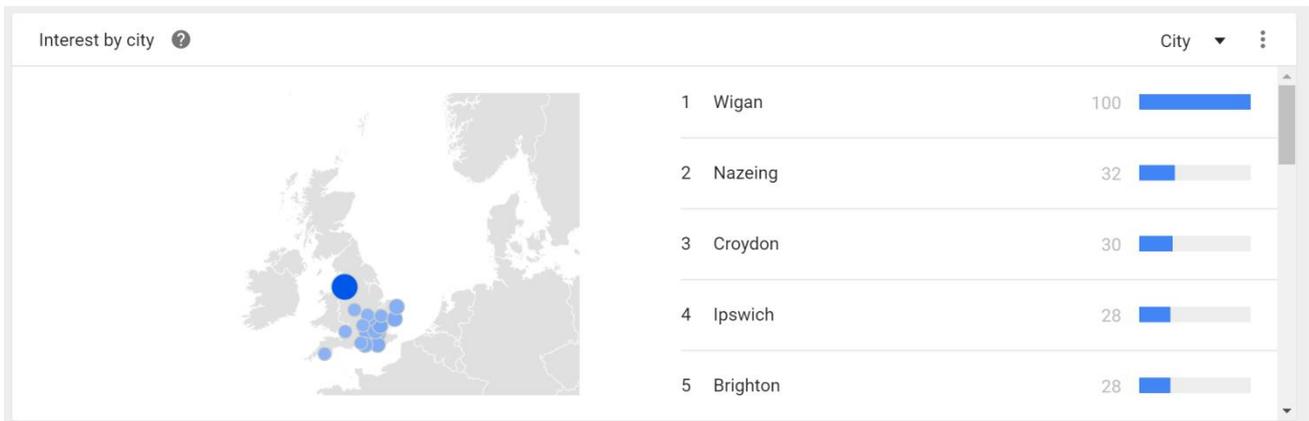
(index value = 100) and December 2004 (95) in the English-only data. Zooming in on these two time periods reveals similar patterns and search terms as the above and thus we get no clues as to what may have caused these spikes.

Figure 17: England interest over time, Cockney



When we look at the search volume distribution across England, we see the following:

Figure 18: England interest by city, Cockney



Wigan, which is a town in the Greater Manchester area, surprisingly has an index value of 100 with the rest of the top 5 cities lagging behind with values of 28-32. The other four locations mentioned here are all in the south of England within a 100km radius of central London (Nazeing in Essex is 30km north of London; Croydon is a town in South London which is approximately 25km from central London; Ipswich in Suffolk is approximately 100km Northeast of London; and Brighton in the county of East Sussex on the south coast is approximately 75km south of London).

The top 5 related search queries in England are shown in Table 13 below.

Table 13: England top related search queries, Cockney

Top related queries	Index value
cockney slang	100
Slang	100
cockney rhyming	65
cockney rhyming slang	65
rhyming slang	65

As we can see, very little has changed here, both in regard to the actual search queries but also with regard to the index values.

As we can see from the above search patterns for Cockney, across all three geographical locations (worldwide, UK and England) we find an interest only in Cockney as a language variety and a clear link to Cockney rhyming slang. We see no overt link with location or place (although this is implicit as Cockney of course indexes the London East End) and no clear link with any popular culture references.

#### 4.4 Comparison

In this section, I will only comment on the comparison of ‘interest over time’ and ‘interest by region’ as based on worldwide, UK and England data. The reason for this is that Google Trends does not (and cannot) compare the related searches and thus the only ‘new’ output is found in these two categories. As is clear from the graph below, the search index values for *Geordie* remain the same and the values for *Scouse* and *Cockney*, respectively, are calculated in relation to this. What we can see here in Figure 20 below is that the search volume for *Geordie* is so high that the searches for *Scouse* and *Cockney* pale into insignificance – the differences in search volume for these two are evened out when calculated against the search volume for *Geordie*. We can see that the *Scouse* spike in December 2011 which was linked to *Desperate Scousewives* above has all but disappeared.

Figure 19: Comparison colour key:

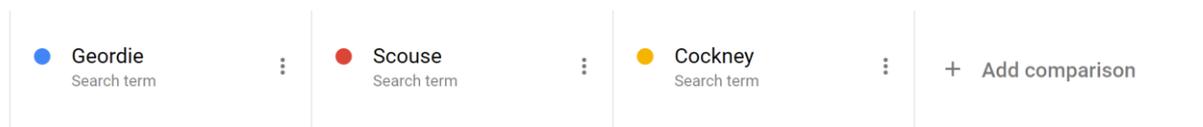


Figure 20: Worldwide ‘interest over time’ comparison

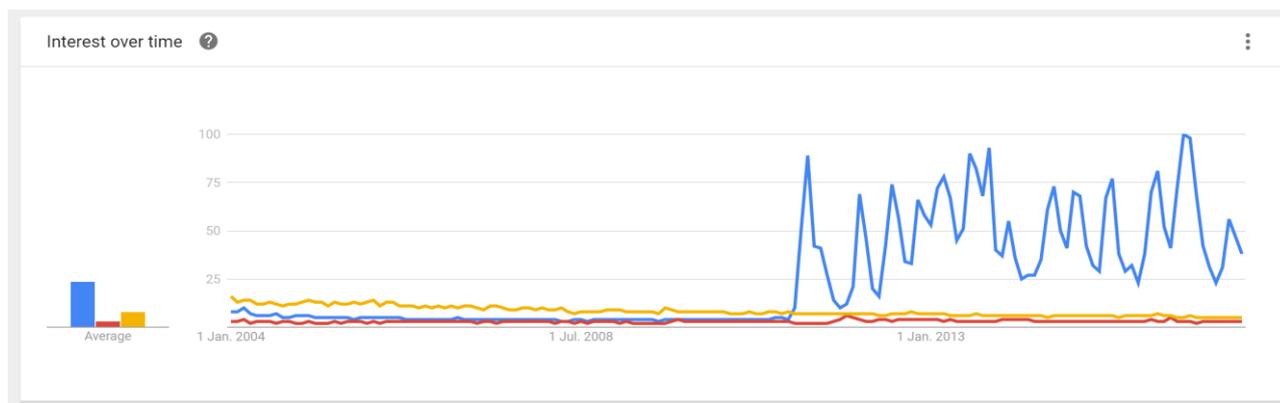
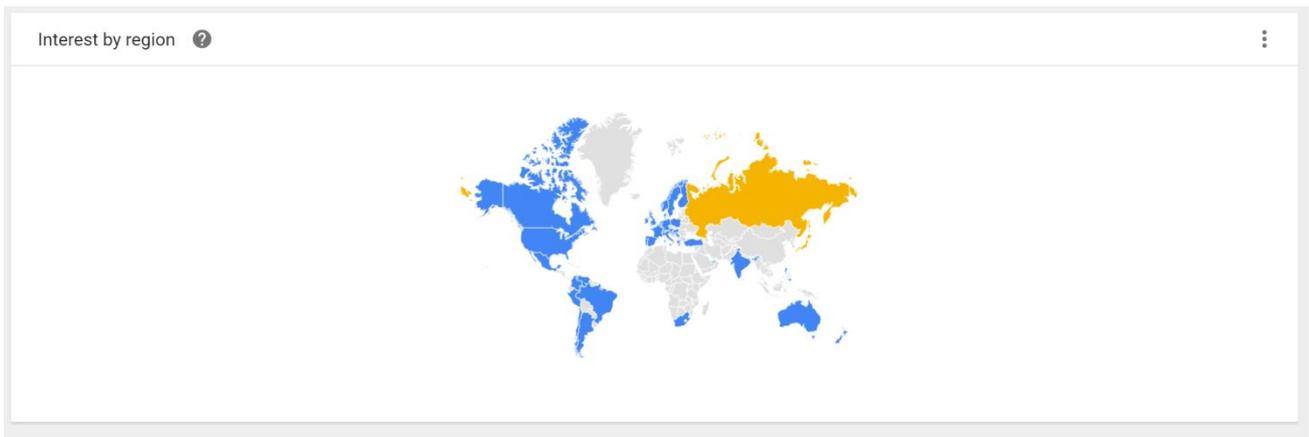


Figure 21: Worldwide ‘interest by region’ comparison



As we can see in the map above, Russia is yellow here, which indicates that Cockney was the most popular search term (as opposed to Geordie). The search index values confirm this as Cockney receives a value of 1 whereas Scouse and Geordie both score 0.

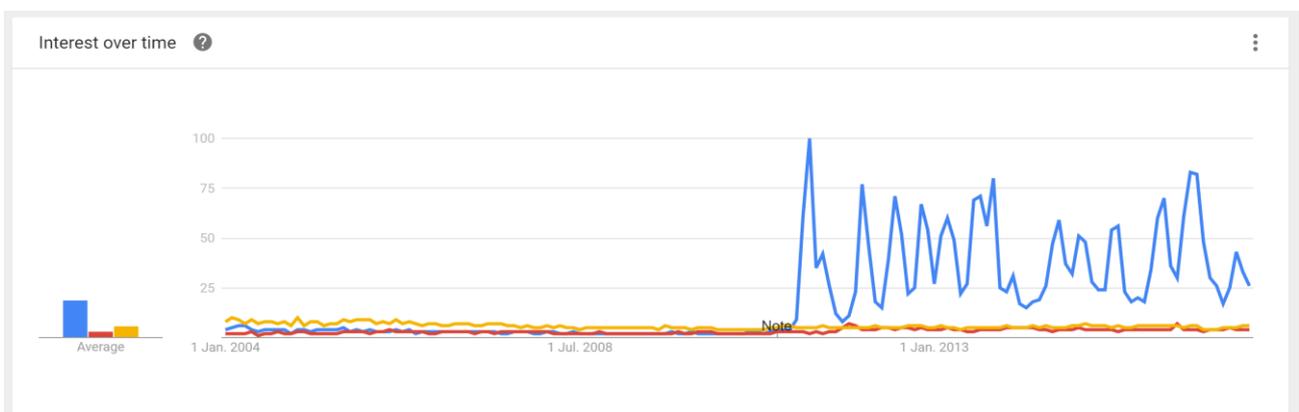
Table 14: Worldwide comparison of search index values

Country	Geordie index value	Scouse index value	Cockney index value
Ireland	100	3	6
United Kingdom	83	10	14
New Zealand	57	0	5
Australia	53	1	3
Netherlands	31	0	1

In the table above, the index values are calculated as proportional to the highest Geordie search index (we can see that the index values for Geordie are the same as given in Figure 2). This also shows us that Geordie is a much more popular thing to search for than Scouse or Cockney.

If we turn our attention to a comparison of the search volumes in the UK only, a similar pattern emerges.

Figure 22: UK ‘interest over time’, comparison



The figure below shows the search volume as dispersed across the four sub-regions of the UK. As we can see, Geordie is the most popular.

Figure 23: UK ‘interest by sub-region’, comparison

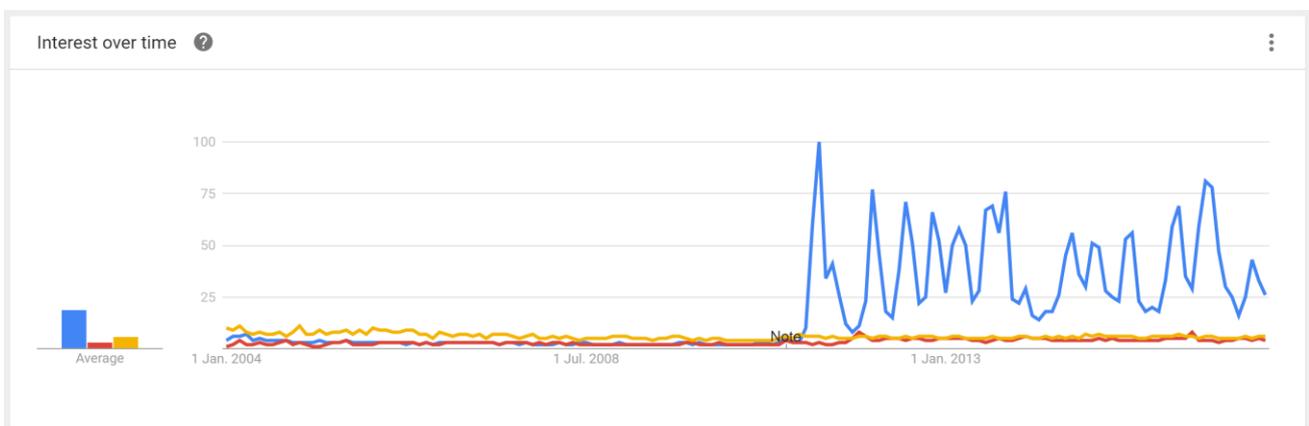


Table 15: UK comparison of search index values

Country	Geordie index value	Scouse index value	Cockney index value
Northern Ireland	100	4	6
Scotland	90	5	7
Wales	78	7	10
England	65	9	12

Again, the table above shows the index values as proportions of the Geordie score. What we see here, then, in addition to the distribution on the 4 sub-regions, is also that the proportional search volume for Geordie is a lot higher than for the other two (we also saw this on the ‘interest over time’). If we look only at England, we see a similar scenario:

Figure 24: England ‘interest over time’, comparison



If we break down the search volume on cities, we see how the Google Trends data and the way it is

calculated falls short.

Figure 25: England ‘interest by city’, comparison



This becomes even clearer in the table below where the search index values are listed.

Table 16: Search index values comparison across cities

City	Geordie	Scouse	Cockney
Newcastle upon Tyne	100	3	4
Gateshead	90	5	4
Sunderland	87	3	5
Esh Winning	84	3	3
Stockton-on-Tees	58	3	4

As we can see from the table, the search index values are matched against that of Geordie which means that Google Trends lists the locations where Geordie was most popular (the same which were also featured in Figure 6) and gives the proportional values for Scouse and Cockney. The only thing which this underlines is indeed that Geordie was the most popular search term in these exact locations in the specified time period.

### 5. Discussion and conclusion

This study set out to investigate two different things: first of all it sat out to explore the usefulness of Google Trends to perceptual dialectology studies, secondly, it investigated the social realities of dialect labels as reflected in Google searches.

We saw in the theory section that Johnstone (2013) argues that dialects and dialect areas are indeed socially constructed through discourse. Montgomery (2016) elaborates and adds that cultural prominence (created through media exposure), as opposed to geographical proximity, not only influences recognition rates but also helps to establish a variety as existing (and being linked with a particular place) in the first place. The output from Google Trends shows us that all three dialect labels are prominent but that *Geordie* by far is the most searched for, albeit only through the link with *Geordie Shore*. And while the Geordie dialect is an established and well-known variety in the UK (Beal 2009, Montgomery 2012), its cultural prominence must have been raised by the exposure

through *Geordie Shore*, a show set in Newcastle<sup>14</sup> featuring cast members from the wider Tyneside area<sup>15</sup> who are speakers of a language variety most viewers would probably class as Geordie. But it is not only the language variety on its own which might have been made more prominent by the show; also Newcastle as a city, the party lifestyle which the cast members engage in, and their preoccupation with appearance are all part of what is culturally linked to the label *Geordie*. This is what I referred to in section 2.1 as “expanding the index”.

The output from Google Trends showed us clear differences between the search volume and also related search terms for the three varieties. If we view Google searches as expressions of interest or, perhaps, curiosity, we can interpret the output from Google Trends as a way of finding out what Google users are curious about and interested in at different points in time, across different locations. The Google Trends maps, which we saw above, then show us *where* people have an interest in Geordie, Scouse and Cockney and the related searches show us more specifically *what* users are interested in when searching for these particular labels.

Users who googled *Geordie* were exclusively interested in *Geordie Shore*, whereas users who googled *Scouse* were interested in Liverpool and eyebrows, and users who googled *Cockney* were interested in the particular language variety. Thus, it is only for the search term *Cockney* where we see the primary field of interest being language. For *Scouse*, the main interest is place and, second, fashion and lifestyle. For *Geordie*, the primary interest is exclusively *Geordie Shore* and its cast members even when looking across the entire data range, from 2004 onwards. So, for *Geordie*, *Geordie Shore* has indeed put the language label on the map. *Scouse* searches were also influenced by popular culture as we saw in the spike which occurred around the release of *Desperate Scousewives*. *Cockney*, though, remains fairly stable across the time period and shows only links with language.

The data available through Google Trends is of a secondary nature and this makes it difficult to base any firm conclusions on it (in terms of causation) without additional and supplementary data such as interviews or questionnaires, for instance. Thus, we can only establish possible correlations between search terms (here dialect labels) and the returned output (here denotations). With this in mind, however, we can perhaps suggest that the label *Geordie*, on a perceptual level, correlates with what can be associated with *Geordie Shore*: language variety, place (Newcastle upon Tyne), behaviour (drinking, having sex), personal grooming and fashion (fake tan, fake lashes, short skirts, high heels, muscular build). *Scouse*, then, correlates with what can be associated with Liverpool, including the language variety but also a certain personal grooming trend for females. *Cockney*, finally, seems to have no other correlations than strictly language and, more specifically, rhyming slang. The very high interest in *Geordie*, which we saw was actually an interest in *Geordie Shore*, is thus also an expression of a prominent cultural presence – a presence which trumps that of *Scouse* and *Cockney*.

With regard to the usefulness of the Google Trends online corpus and search index to linguistic study, we saw that while it offers a range of possibilities and levels of detail, the presentation of data in index values (and not raw frequencies) is both a blessing (it makes for very easy comparisons) and a curse (it obscures details). Most importantly, it takes away a lot of control from the researcher and some of the empirical considerations and decisions we, as linguists, might make are no longer possible. As such, the intuitive interface and polished output definitely have appeal but they also mean that researchers cannot get their hands properly into the data. It is not possible to “see behind the screen” so, as such, it is not easy to even assess what we are missing out on. This is also the main reason for why I suggest using Google Trends in the exploratory phase of any linguistic study (perceptual or otherwise). For instance, for a study in to the dialect labels covered here, the next step could be a perceptual dialectology map project in which participants provide descriptors to

<sup>14</sup> Most of the seasons are set in Newcastle although the cast members have also travelled to Spain and Australia.

<sup>15</sup> Holly Hagan (Image 1, front row, far right), a cast member 2011-2016, is originally from Teesside.

correspond with labels.

As such, the Google Trends provides a quick and easy insight into some perceptual aspects of dialect study, but it soon becomes evident that the tool is simply not fine-grained enough to be able to stand alone. This could, perhaps, be remedied by access to non-aggregated data. Furthermore, the output from Google Trends is also anonymised, meaning that we have very little information about the people who are searching for specific terms. As we saw above, we can see their location and the time period for their search, but we have no other demographic data available. It is not certain how much other data Google actually stores, but sharing this type of information obviously also has ethical consequences, so it is unlikely that this information would be made publicly available.

Google Trends does offer another tool, which has not been explored in this study<sup>16</sup>: Google Correlate ([www.google.com/trends/correlate](http://www.google.com/trends/correlate)). This tool aims to find searches and search patterns which correlate with real-world trends. It is possible to look at patterns either across US states or across time series (either weekly or monthly). Google Correlate is still in an experimental phase and can, obviously, only detect correlations, not causations. If one is interested in looking at patterns across US states and matching search term queries with real-world events (which was also attempted here) this may be a useful tool in future when further developed.

## References

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<sup>16</sup> An initial probe was conducted but no correlations returned due to the low search volume for some of the dialect labels.

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