



Relative *who* and the actuation problem

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Abstract

This paper presents an empirical analysis of the beginning of a linguistic change in the relativiser system in one variety of English and attempts an answer to the hitherto unsolved actuation problem: why does a change begin in a language at a particular time and place but not in the same language at other times or in other places? We show that although relative *who* occurs with the same frequency and the same grammatical constraints in two related varieties of London English, a topic marking feature for *who* has developed in only one of these varieties. We offer an explanation that combines sociolinguistic and formal approaches to the analysis of variation, arguing that this combination allows a better understanding of the mechanism for the actuation of a grammatical change.

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1. Introduction

The actuation problem is central to an understanding of language change, yet it remains “intractable” (Milroy, 1992:164), “recalcitrant” (Labov, 1982:81) and “mysterious” (Labov, 2001:467). The problem, as stated by Weinreich et al. (1968:102), is to explain why a change in one structural feature takes place in a language at a particular time and a particular place, but not in other languages with the same structural feature or in the same language at other times. The problem is unlikely ever to be resolved since, like other phenomena that can be analysed empirically, we can never be sure to have uncovered all the factors that have given rise to a specific language change. We can, however, attempt to uncover some of the relevant factors that have influenced the beginning of a language change, and this is what we attempt to do in this paper.

We focus on one specific change at the interface between syntax and pragmatics: the emergence of a topic marking strategy for English relativised animate NPs that are the subject of their relative clause. Our research was carried out in London, England, a location known to have been an influential source of linguistic innovation since Tudor times (Nevalainen and Raumolin-Brunberg, 2003:165). We compare language use in two different areas of London, an inner city area and an outer city area. As in many other parts of the UK, the number of different relativiser forms is declining, with *that* becoming more frequent in the speech of younger people. In London, though, this has not resulted in a corresponding decrease in the use of *who*: on the contrary, *who* has remained stable in the speech of younger and older generations in both inner London and outer London. We show that although the variable use of different relativiser forms follows the same linguistic patterns in each of these areas, *who* has developed as a topic marking strategy only in the inner city. Our comparison therefore allows us to explore the linguistic and sociolinguistic processes that can generate this kind of language change: in other words, to try to explain the actuation of a morphosyntactic change.

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We trace the innovation to a specific generation of speakers born and brought up in the inner city research site at a time when it was profoundly multilingual, with an immigration population from many different countries, speaking a wide range of different languages. In this type of language contact setting, which is becoming increasingly common in working-class inner city urban areas of Europe, bilingual and monolingual children grow up side by side and acquire English together, in multi-ethnic friendship groups. We argue that although language contact plays a role in the generation of the change, the innovation cannot necessarily be traced to the influence of any specific substrate languages, though these may play a role. Instead, language contact plays a more indirect role, affecting the way in which children acquire the majority language in this type of setting.

Since the change involves the emergence of a new function for a morphosyntactic variant, the analysis requires an understanding of how this change is embedded into the morphosyntax of the variety. For this, we turn to a minimalist interpretation of the data, following the tradition of previous researchers who have bridged the gap between sociolinguistic and formal approaches to the analysis of language (for example, Adger and Smith, 2005; Cornips and Corrigan, 2005; Kroch, 1989; Meechan and Foley, 1994; Wilson and Henry, 1998). We propose that the morphosyntactic representation of *who* is augmented for certain speakers with a formal feature encoding discourse prominence (specifically, topicality) which itself is available in their ambient multilingual environment. The presence of such a feature creates an imbalance in the frequencies of use of the *who* and *that* variants of subject relativisers, so that *who* becomes more frequently used for topical noun phrases. This claim about the lexical representation of the relativisers thus implements a mechanism for the actuation of change within the structured heterogeneity of the linguistic system that we investigate.

To set the scene for our analysis we describe the research project from which we take our data in section 2 of the paper, and summarise previous research on variation in the relative marker system in section 3. Section 4 presents our analysis of relative pronoun forms in the two areas of London, with discussion and further analysis in section 5 and our conclusions in section 6.

2. London English: Hackney and Havering

The two London boroughs where our fieldwork was carried out were Hackney, in inner London, and Havering, in outer London. The areas (shown in Fig. 1) were selected on the basis of their demographic and social differences for a project designed to investigate innovation and change in London and to map the social groups who are the drivers of these changes (the *Linguistic Innovators* project; Kerswill et al., 2004–2007). As Fig. 1 shows, Hackney is in the traditional East End, close to the City of London, whereas Havering is further to the east.

Hackney is ethnically diverse (see Table 1), and a large number of different languages are recorded as spoken by school children in the borough (see Table 2). Note that there are over thirty languages in total, but that these figures do not

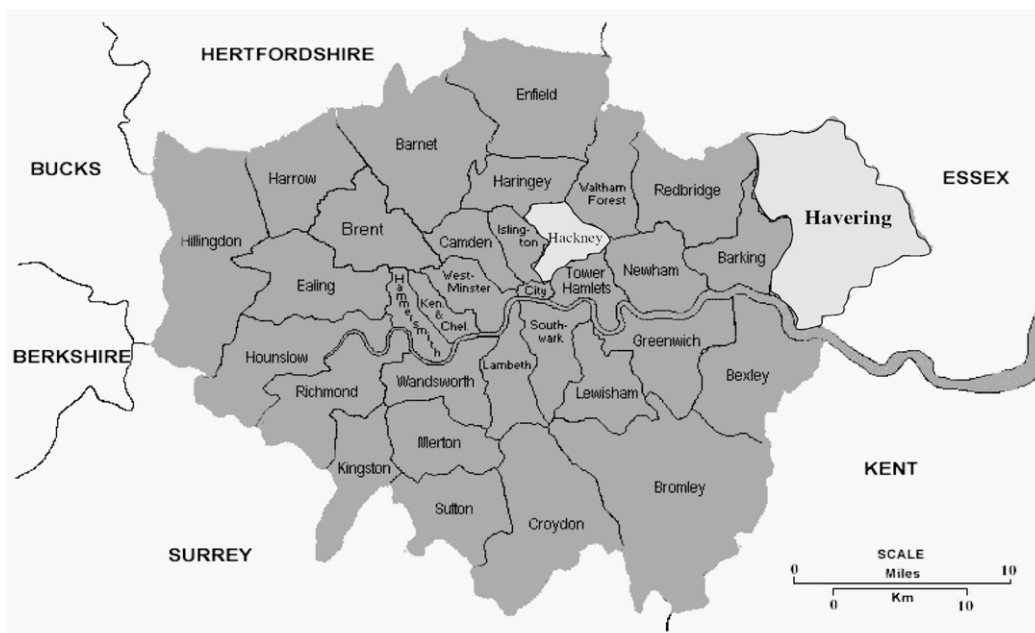


Fig. 1. Map of London, with the boroughs of Hackney and Havering highlighted (from www.cityoflondon.gov.uk/Corporation/maps/london_map.htm).

Table 1

Percentage of different ethnic groups in Hackney and Havering (2005 estimates, from Data Management and Analysis Group, Greater London Authority, *Demography Update October 2007*).

	Hackney	Havering
White British	47.1	88.2
White Irish	2.6	1.4
Other White	11.2	2.4
Mixed race White & Black Caribbean	1.6	0.5
Mixed race White & Black African	0.8	0.2
Mixed race White & Asian	0.8	0.4
Other Mixed race	1.2	0.4
Indian	4.1	1.5
Pakistani	1.4	0.6
Bangladeshi	2.8	0.5
Other Asian	1.0	0.6
Black Caribbean	9.2	0.9
Black African	10.8	1.5
Other Black	2.2	0.2
Chinese	1.4	0.5
Other	1.9	0.5

Table 2

Percentage of school children in Hackney speaking a first language other than English.

Language	%	Language	%
Turkish	10.61	Greek	0.33
Benuic (Yoruba, Igbo)	7.89	Bantuic	0.30
Sylheti	5.41	Somali	0.21
Gujurati	3.13	Hesperonesic	0.10
Punjabi	2.46	Kurdish	0.10
Akan	1.93	Slavonic	0.07
Hindi/Urdu	1.62	Amharic	0.04
Vietnamese	1.44	Albanian	0.03
Arabic	0.97	Farsi	0.02
Hebrew	0.75	Gä	0.02
Portuguese	0.67	Hausa	0.01
Spanish	0.59	Tigrinya	0.01
Italian	0.34	Tamil	0.004

Figures taken from Baker and Eversley (2000).

mention the English-based and French-based Creole languages that, with such large numbers of Caribbeans and Africans, should surely be included in the linguistic mix.

The highly complex multilingual and multicultural situation found in Hackney has developed since the 1950s, when many traditional white working class families from the east end of London were relocated to new estates and New Towns further east during the post-war reconstruction and slum clearance of London (for a fuller discussion see Fox, 2007). This left an ageing population in Hackney until, with the arrival of foreign immigrants, the population started to increase. The proportion of immigrants in the total population of Hackney rose from 105 per 1000 in 1951 to 192 in 1961 and 240 in 1966, and immigrants now outnumber 'heritage' Londoners.

Havering is very different in its social composition. It was formerly a small town in the county of Essex but was transferred to the Greater London administrative area in 1965. Two large social housing estates were constructed during the 1950s to house the incoming population from inner London. Havering has therefore seen recent dialect contact between working class London English ('Cockney') and Essex dialects. It contrasts starkly with Hackney in that the majority of the population come from long-standing indigenous white British families (again, see Table 1). At the time of the research, very few people in Havering spoke a language other than English. The three languages other than English that were most frequently spoken by school children in Havering are Panjabi, Hindi/Urdu and Gujerati, but the percentage of children speaking these languages were, respectively, only 0.36, 0.32 and 0.09 per cent (Baker and Eversley, 2000). A further contrast with Hackney is that the working class speakers in our Havering sample tend to be more mobile than the working class speakers in Hackney. Many young people from Havering mentioned in the recordings (see below) that they

travelled to other areas of London for entertainment in the evenings and at weekends, and to visit family members. This increases the probability of dialect contact for the Havering speakers.

We recorded 49 adolescent speakers in Hackney (27 male and 22 female), and 36 adolescent speakers in Havering (19 male and 17 female), together with 8 speakers in each location aged 70 and above, all of whom had lived in the area for most of their lives. The elderly speakers were recorded in their homes, mainly in pairs; there was a broad interview format but wherever possible the speakers were left to interact with each other, with minimal input from the fieldworker (Sue Fox). The adolescents were aged between 16 and 19 and attended a local community college, which is where the recordings were made. After an initial period of observation in the colleges the adolescents were recorded in natural friendship groups of two or three individuals. The presence of the speakers' friends meant that the recordings were very informal and relaxed in tone. Again, there was minimal input from the fieldworker and topics were left to occur spontaneously. Frequently, the same speakers were recorded several times, which meant that they were familiar both with the fieldworker and with the recording situation. Some self-recordings were also made.

All the young speakers were taking vocational courses such as bricklaying, catering, or painting and decorating. The ethnic backgrounds of the Hackney adolescents were as follows: white Anglo, Afro-Caribbean, African, mixed race (white British/Afro-Caribbean, white British/Indian, Moroccan/Egyptian), Bangladeshi, Moroccan, Columbian, Portuguese and Chinese. This mix reflects the ethnic diversity of the borough, though since our aim was to record friendship groups it does not match the specific proportions of each minority ethnic group as recorded in the Census figures. Except for the term 'Anglo', which we use to refer to monolingual (white) speakers from indigenous London families, the labels used reflect the speakers' own descriptions of their ethnicity. We use the term 'non-Anglo' to refer in a general way to speakers from minority ethnic groups, and are interested in ethnicity as an indicator of language background rather than as a social category in its own right. The Anglos were from long-standing London families with no tradition of speaking a language other than English. Although the Anglo adolescents may sometimes overhear heritage languages when their non-Anglo friends are talking to each other, they do not speak or understand them. The non-Anglos vary in their use of heritage languages, though most use English and another language daily and some act as interpreters for their parents. The Havering adolescents whose speech was analysed here were all from an Anglo background.

We found many forms in the speech of the Hackney adolescents that were not used by the older people in Hackney, nor by the adolescents in Havering. For example, *man* was used as an indefinite pronoun, as in (1), conjoined verbs were used without *and* (see (2)), and *why... for* occurred as a question frame (see (3)).¹

- (1) I don't really mind how.how my girl looks if she looks decent yeh and there's one bit of her face that just looks mashed yeh I don't care it's her personality **man's** looking at (Alex: Alex_Zack 1, 0.37.40)
- (2) no come sit on my lap (Sulema: Dean_Chris_Sulema, 25.30)
- (3) they just .. said to me like "why you doing this for . stop showing off" and all that (Alan: Alan_Brian 2, 46.20)

However our concern in this paper is with an innovation that, unlike these examples, was not evident from the surface structure of the data. Relativiser forms in Hackney and Havering were very varied, as in all varieties of present-day English, and a first analysis showed the variation to be structured in a similar way in each data set, as we will see in section 4. Yet when we turned to an analysis of how speakers used the different relativiser forms in their spoken discourse, we uncovered an intriguing difference between the Hackney adolescents and the other groups of speakers in the sample. Thus our analysis is an example of what can be observed when we look beneath the surface of variation to consider the potential discourse and information-structuring functions of variable grammatical forms (Cheshire, 2003, 2005).

3. Variation in English relative markers

Present-day English has an extraordinarily large number of different relativiser forms, reflecting the historical development of different strategies for relativisation. In restrictive relative clauses the forms include *who*, *whom*, *which*, *whose*, *that*, *what*, *as*, *at* and a zero form.

The oldest relative marker, *that*, as in (4), developed as an indeclinable particle from the Old English demonstrative pronouns *se*, *seo*, *ðæt*. It originated in northern England and then spread to other areas of the country to become, by the thirteenth century, the dominant form (Fischer et al., 2000:91).

- (4) apparently a chav is like someone that wears like a big gold chain (Carl: Carl_Stuart, 47.22)

¹ All examples unless otherwise stated are taken from our recordings of London English; we reference first the speaker, then the recording from which the example is taken and finally the time index on the sound files.

Table 3
Relativiser forms in present-day British standard English.

	Animate	Inanimate
Subject	<i>who, that</i>	<i>which, that</i>
Object	<i>who(m), that, zero</i>	<i>which, that, zero</i>

Relative clauses sometimes have no explicit marker, as in (5).

(5) have you seen that protein drink you can get like (Kieran: Kieran_Dale_Derek, 22.32)

Zero markers² have been used since Old English (Mustanoja, 1960:205) but they became less common in subject position, as in (6), during the Early Modern English period (Tagliamonte et al., 2005:77).

(6) well the only person did come see me was Maddy (Hannah: Kelly_Hannah 1, 45.07)

Subject zero forms became increasingly disfavoured in standard English (Levey, 2006:49; Quirk et al., 1985:420) but they still occur in many regional English dialects (Britain, 2008:101). In object position they are currently the dominant form throughout the British Isles (Britain, 2008:101).

The *wh*- forms (*who*, *whom*, *which* and *whose*) were introduced from the twelfth century onwards, possibly influenced by similar developments in French (Romaine, 1982:213). These forms were marked for case and, later, for animacy of the antecedent noun. They first appeared in more formal written styles and in the more complex, less frequently relativised positions (Romaine, 1982:60), at the lower end of Keenan and Comrie's accessibility hierarchy (1977); thus genitive of *which* and oblique *to which* appeared first, followed by *whom*, *whose* and eventually *which* (Beal and Corrigan, 2002:126). The subject relativiser *who*, as in (7), is not attested until the fifteenth century.

(7) I'm the only one who's gone to college (Sophie: Charlotte_Sophie 2, 29.15)

At first *who* was used to refer only to what Nevalainen and Raumolin-Brunberg (2002) term 'the Deity' (with antecedents including *God*, *Christ*, *Our Lord* and *the Holy Trinity*), but its reference then widened to include proper nouns and then human referents more generally (Rydén, 1983; Nevalainen and Raumolin-Brunberg, 2002). Ball's analysis of trial transcripts demonstrates a sharp increase in the use of *who* during the 17th century, reaching a 90% rate by 1800 (Ball, 1996:250). *Who* replaced *which* with human-like referents and this, Ball argues, went hand in hand with the reassignment of *that* to inanimate referents (Ball, 1996:250). Example (8) is a present-day legacy of former uses of *which*.

(8) Our Father which art in Heaven (Lords Prayer, King James' Bible, 1611).

However the spread of *wh*- forms occurred only in the written language; in spoken English *that* was still "the relative marker of choice for all classes of speakers" (Ball, 1996:248) until the eighteenth century. At this point *who* became frequent in the speech of 'polite' society. It was still dominant in educated spoken English in the 1950s as a subject relativiser with human referents, occurring 91 per cent of the time in Quirk's (1957) analysis. Usage may now be declining, though, at least in British English: Tottie's (1997) analysis of data from the British National Corpus found that *who* accounted for only 67% of subject relativisers with human antecedents, with *that* accounting for most of the other forms used in this context (at 26%; *as* and *what* between them accounted for a further 2% and the zero form for the remaining 4%).

In present day spoken standard English the subject and object relativiser systems can be summarised as in Table 3 (note though that *that* with human antecedents is proscribed by some purists).

To this system we must add nonstandard relative markers such as *at*, *as* and *what*. *At* and *as* (perhaps deriving from *that*) occur mainly in northern varieties of English; *what*, as in (9), is associated with southern England (Wright, 1905:§43), especially the southeast (Herrmann, 2003:141).

(9) no that song what they done at the E2 party in [name of street] (Alex: Alex_Zack 1, 6.45)

² We follow the convention of using the term 'zero marker' where there is no overt relative form. Most syntactic theories assume that there is a gap functioning as an anaphoric link to an antecedent, whether or not *that* is present: see Huddleston and Pullum, 2002:1037).

What has been used since the eleventh century (Ball, 1996:252), perhaps as a development from Dutch *wat* (Poussa, 2002). Although in northern England it is more frequent as a subject form, in southern England it occurs with roughly equal frequencies as a subject and a nonsubject relativiser (Herrmann, 2003:116).

This complex system of relative markers is subject to much variation and change in present-day spoken English. *Whom* and *whose* are universally reported as infrequent other than in very formal speech styles, with younger speakers using more *that* (see Tagliamonte, 2002 for York; see also Tottie, 1997; Britain, 2008:99–100). As might be predicted, then, *wh-* forms are being lost first in the lower positions of the Accessibility Hierarchy. Younger speakers opt for the typologically more frequent means of marking relativisation, using an invariant form (*that*) unmarked for case, number, gender or animacy (Suárez, 2012:82). Also in line with typological patterns is the co-occurrence of *that* as a complementiser: indeed, there are structural and semantic grounds for analysing both the relativiser and the complementiser *that* as a conjunction (Stahlke, 1976; Cheshire, 1995:385). Ball (1996:251) notes that *which* “has found little or no place in the restrictive relativiser system of nonstandard varieties”, and most recent studies confirm low frequencies for this form (see, for example, Tagliamonte et al., 2005 for northern varieties).³ Tottie (1997) reports frequencies for *which* in her sample of texts from the BNC of just 20 per cent compared with 51 per cent for Quirk’s (1957) analysis of spoken standard English.

Since the *wh-* forms were introduced in formal, written styles, we could expect them to be used more frequently by speakers influenced by the norms of standard (written) English, and most studies do find an association with both the speaker’s level of education and the formality of the situation (see, for example, Tagliamonte, 2002; Beal and Corrigan, 2007; Tottie, 1997; Tagliamonte et al., 2005; Herrmann, 2003). Some researchers, in fact, propose that the complex *wh-* system cannot survive without the support of an education system. In this vein, Tagliamonte (2002:163) suggests that the decline of *wh-* forms amongst younger speakers results from more relaxed methods of English language teaching in schools. Beal and Corrigan (2007) similarly note fluctuations in the use of *wh-* forms that correlate with changes in teaching methods in the northern English region of Tyneside. We might therefore expect to find that *wh-* forms will be infrequent amongst the adolescents in our sample. However to set against this we can note that *wh-* forms are thought to be more frequent in the south of England than the north (Jones, 1972:140; Nevalainen and Raumolin-Brunberg, 2002:112; Beal and Corrigan, 2002). This appears to be confirmed by Levey’s (2006) study, where for working class children (aged between 7 and 11) in outer London *who* was the preferred subject relativiser (with a frequency of 53 per cent). *Wh-* forms are also more frequent in urban areas, where speakers are more likely to be in contact with mainstream norms than in rural areas (Tagliamonte, 2002).

Finally, we can note that there is much individual variation. For many speakers *who* appears to be robust alongside *that*, zero and, sometimes, *which*; but often there are other speakers within the same social group who rarely use *wh-* forms (Tottie, 1997; Beal and Corrigan, 2002).

It is against this background of widespread variation and change in the relativiser system that we carried out our analysis.

4. Analysis

4.1. Methodology

In order for our analyses to be comparable with previous studies, we analysed only restrictive relative clauses that “serve to identify their antecedent” (Denison, 1998:278), distinguishing these from non-restrictive clauses such as (10) on the basis of their intonation and their semantics (nonrestrictive relative clauses usually have a separate intonation contour, and they present additional, supplementary information; Huddleston and Pullum, 2002:1035).

(10) I just lived down his road . which was like a couple of minutes away from our house (Adam: Adam_Amjad, 2.28)

To further ensure that nonrestrictive relative clauses were excluded from the analysis we followed Tagliamonte et al.’s decision procedures (2005:85). Thus we excluded relativisers with proper noun or full clause antecedents, as well as adverbial relative clauses such as (11) and relativisers in frequent phrases that we judged to be prefabricated (on the grounds of their frequency and intonation contour), such as *that’s the way it is* (see also Tottie, 1997).

(11) but er . the last time (zero) I got suspended there was this queer boy (Kevin: Kevin_Gary 2, 2.59)

³ *Which* is, however, frequent in nonrestrictive clauses, where in certain positions in the utterance it has developed a set of interactional functions that express speaker attitude (see Clift, 2007).

Table 4
Percentages of different relative forms.

	<i>that</i>	<i>who</i>	zero	<i>which</i>	<i>what</i>	Total <i>N</i>
Hackney 65+	39.5	23.5	16.2	8.0	13.0	162
Havering 65+	50.2	21.9	22.9	3.5	1.5	201
Hackney 16–19	67.5	21.9	7.7	0.8	2.1	827
Havering 16–19	65.0	20.1	12.4	0.9	1.6	677
Total (all speakers)						1867

In the few remaining cases where it was difficult to distinguish a restrictive from a nonrestrictive relative clause, we discounted the relativiser from the analysis. When relative clauses occurred in a list we included the first form in the list but no subsequent forms; we also excluded forms occurring in repeated syntactic structures, reported speech and false starts.

This left us with a total of 1867 restrictive relative clauses. We discuss the distribution of the different relativiser forms in these clauses in the following section.

4.2. Variation in the relative markers

Whom and *whose* did not occur in our data. Instead of *whose*, speakers used periphrastic constructions as in (12) and (13).

(12) apart from the next boy who we changed his name cos like you get me (Chris: Chris_Dean, 9.13)

(13) they're not family that I remember their birthday and go round giving them birthday cards
(Laura: Katie_Laura 2, 36.11)

The overall distribution of the different relative forms in the data set is shown in Table 4. Compared to the older speakers, in each location younger speakers use a higher proportion of *that*, and a lower proportion of all other forms except *who*. *Who* remains stable, with rates between 20.1 and 23.5 for all groups.

It is more revealing, though, to consider the forms used in different syntactic functions. Oblique forms were infrequent in our data so, like D'Arcy and Tagliamonte (2010), we divided the tokens into the two categories of subject relativisers and non-subject relativisers, with the latter category containing both object and oblique forms.

We begin by comparing the subject relativiser forms used by older and younger speakers in Havering, the outer London area. The relative frequencies of the different forms are shown in Fig. 2.

For older speakers the main variation is between *that* and *who*, with *that* dominating; they also use some zero markers, and there is a smattering of *which*. By contrast, the younger speakers rarely use the zero forms or *which*, and the proportion of *that* has increased in their speech. However the frequency of *who* remains the same as for the older speakers. In subject position, then, adolescent speakers use *who* with the same frequency as older speakers, but for the younger speakers variation is now between just two forms, *who* and *that*.

For nonsubject relativisers the two age groups share the same broad pattern of variation. Fig. 3 shows that for both groups the main variation is between *that* and zero, with *who* and the other forms occurring with very low frequencies. As with subject relativisers, the younger speakers use *that* more frequently than the older speakers; and their use of the zero form is correspondingly less frequent. The younger group, then, has a neat two way pattern of variation: *who* and *that* for subject relativisers and *that* and zero for nonsubject relativisers.⁴ *That* dominates as both subject and nonsubject form.

In Hackney, the older speakers' relativiser system is more complex because there is an additional variant, nonstandard *what*. This form was negligible in the speech of older speakers in Havering, but is more frequent for older speakers in Hackney. Nevertheless, for these speakers, as for the older speakers in Havering, *that* is still the dominant subject relativiser form, with *who* the next most frequent form (see Fig. 4). As in Havering, younger speakers in Hackney use *that* more frequently than older speakers, and their use of *which*, *what* and zero is reduced to such an extent that for them the subject relativiser system again consists essentially of just two forms, *that* and *who*. Notice however that again the percentage frequency of *who* is stable across the generations.

⁴ Interestingly, this is the same system observed by D'Arcy and Tagliamonte (2010) for the English spoken in Toronto. Unlike the Toronto situation, though, in London the adolescents use *that* more frequently than the older speakers, at the expense of all other variants except *who*, whose frequency is stable.

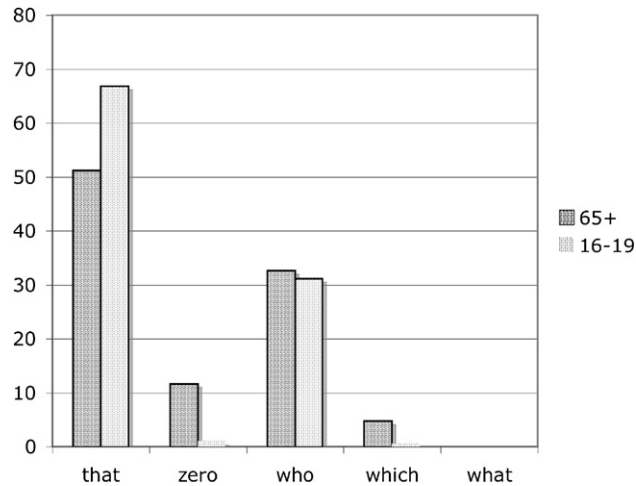


Fig. 2. Subject relativisers: Havering (speakers aged 65+: $N = 129$; speakers aged 16–19: $N = 421$).

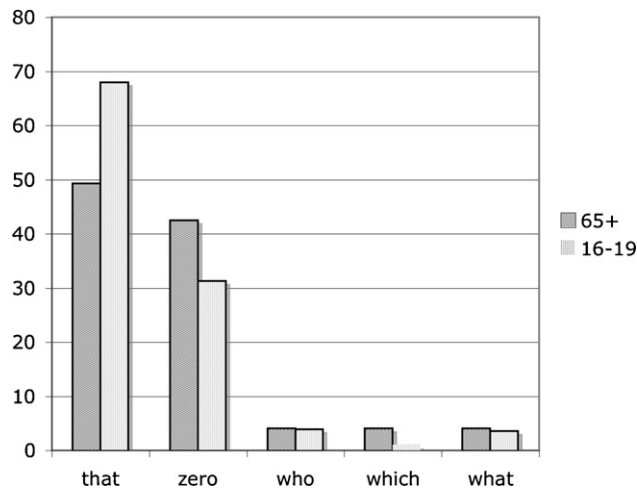


Fig. 3. Nonsubject relativisers, Havering (speakers aged 65+: $N = 72$; speakers aged 16–19: $N = 256$).

Turning now to nonsubject relativisers, we see in Fig. 5 that all five variants are used by the older speakers in Hackney but that their relative frequencies differ, most notably in that for them zero is the most frequent form, closely followed by *that* and then *what*. *Who* does occur as a nonsubject relativiser, but infrequently. Younger speakers again use a reduced set of variants, with *that* dramatically increasing in frequency at the expense of all other forms. There is thus the same neat two-way split between subject and non-subject relativisers in adolescent speech that we saw in Havering, with *that* and *who* in subject position and *that* and zero in non-subject position, with *that* again the dominant variant overall. In both London boroughs, then, there has been a dramatic increase in the use of *that*, at the expense of all other relativiser variants except *who*. The clear paradigmatic opposition between *who* and *that* in terms of syntactic function suggests that *who* has become a simple relativiser on a par with *that*. Unlike *that*, however, *who* occurs almost exclusively as a subject relativiser. We will argue later that this is a relevant factor in its development as a topic marking strategy.

Given the population movements that have taken place in the two London boroughs, we could expect levelling of the relativiser system to occur. It is not surprising, therefore, to find that the number of variants in adolescent speech is reduced compared to the number used by the older speakers. The specific variants that have been lost fit with well-attested principles of dialect levelling (Trudgill, 1986; Williams and Kerswill, 1999; Britain, 2002). Thus it is the nonstandard, socially marked forms (*what* and the zero form in subject position) that are recessive, and the form that wins out as the “conquering variant” (Britain, 2002:36) is the variant that the older generation used most frequently (*that*). The dominance of *that* in adolescent speech also fits with the principle that grammatically unmarked variants are more likely to survive: *that* is used both for subjects and objects of the relative clause. It is semantically unmarked too, used with both

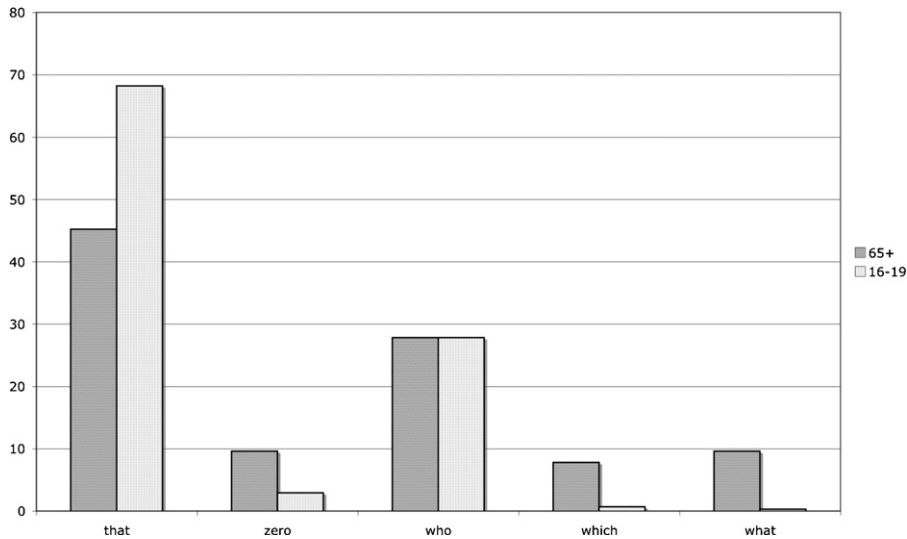


Fig. 4. Subject relativisers, Hackney (speakers aged 65+: $N = 114$; speakers aged 16–19: $N = 581$).

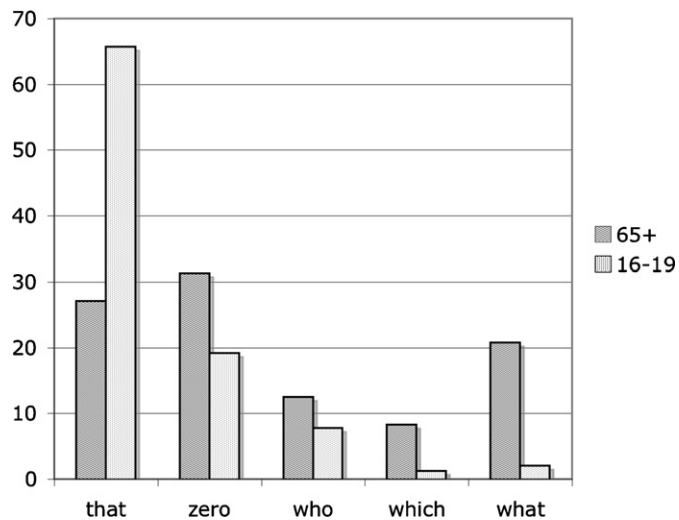


Fig. 5. Nonsubject relativisers, Hackney (speakers aged 65+: $N = 48$; speakers aged 16–19: $N = 246$).

animate and inanimate referents. Finally, the younger generation's reduced use of zero forms means that for them grammatical structures are more transparent, with the link between the matrix clause and the relative clause clearly marked by an overt form. This is a further factor that is in line with principles of dialect levelling.

Interestingly, though, there are important differences between the levelling we observe in London and the levelling reported elsewhere in the country. Although the zero form is the preferred non-subject relativiser throughout the British Isles (see, for example, Tottie, 1997; Britain, 2008), this is not the case for the younger speakers in our data: in both Hackney and Havering, younger speakers use the zero form less frequently than older speakers. Instead, for younger speakers in London *that* dominates in both subject and non-subject position. However, in London the increase in *that* does not go hand in hand with a corresponding decrease in *who*, unlike elsewhere in the UK (see, for example, Tottie, 1997:473; Tagliamonte, 2002). In London the frequency of *who* remains stable across the generations, as we saw in Figs. 2 and 4.

We mentioned above that *wh*-forms are thought to be more frequent in southern England than elsewhere in the UK, but this does not explain why *who* is the only relativiser form to have been unaffected by the increasing dominance of *that* in London English. We turn, therefore, to a more detailed examination of the use of *who*, to attempt to discover the reasons for its stability in the face of widespread change in the rest of the relativiser system.

4.3. Who

A first step in the analysis is to see whether the occurrence of *who* in young people's speech is widespread. As noted earlier, previous studies have documented extensive individual variation in the use of *who*, with some speakers using this form very frequently while others use it rarely or not at all. We thought it possible, therefore, that the group figures for *who* reflected the usage of a small set of individuals who are simply more conservative than others, resulting in an overall stable frequency of *who* for the two groups of older and younger speakers.

Of course, individuals vary greatly in the number of relative clauses they produce. Some young speakers did not use many relative clauses at all, so to include these individuals in this part of the analysis would have given a misleading picture of overall *who* usage in the data. We decided to include only data from speakers who had produced a total of at least ten relative clauses. For Havering this left 22 speakers in the sample; for Hackney, we were left with 28 speakers. In each of these groups there were just 5 individuals who never used relativiser *who* in the recordings. In other words, for this analysis 77 per cent of the adolescent speakers in the Havering sample (17 individuals) and 82 per cent of the speakers in the Hackney sample (23 individuals) could be considered *who* users. Clearly, then, using *who* is not idiosyncratic behaviour – and it is possible, of course, that the individuals we had excluded on the grounds that they used *who* infrequently or not at all in our recordings do use *who* on other occasions. We conclude that *who* seems to be well entrenched in adolescent speech in both Hackney and Havering. Note that although previous researchers have suggested that the retention of *wh-* relativiser forms requires the support of a strong educational system (see section 3 above), this cannot explain the use of *who* by the young people whose speech we analysed here, most of whom had few educational qualifications and many of whom had been excluded from their secondary schools, either temporarily or permanently.

Figs. 6 and 7 show the percentage use of *who* used by speakers in the reduced data set (the 28 Hackney adolescents and the 22 Havering adolescents). In the Hackney data set (Fig. 6), individual speakers' rates of *who* relative to all other relativiser forms range between 0 and 66.7. The mean frequency index for the group was 23.1. In Havering (Fig. 7) scores ranged between 0 and 58.8. Here the mean frequency index for the group was 18.1. The difference between the two mean frequency indices is statistically significant (chi square = 0.0343, df 1, $p < 0.01$); overall, then, for the young speakers in our sample who use relative clauses fairly frequently, *who* is more frequent in Hackney than in Havering. This finding could alert us to the possibility that *who* serves a useful purpose for young speakers in Hackney. We explore this possibility in the following section.

4.4. Animacy, subjecthood and topicality

We saw in section 3 that since its introduction into English *who* has always been specialised for use with human antecedents. It is still used this way in our data. *Who* is rare as a nonsubject relativiser, as we saw in Figs. 3 and 5, but when it does occur it is with a human antecedent or, in just two tokens (see (14) and (15)), with an antecedent that is arguably treated as human.⁵

(14) he retired there . his firm who he worked for retired him on ill health (John 1, 14:00)

(15) he's not one of the kid's names who you wanna mention (Ollie: Ollie_John 2, 1:00:18)

The low number of tokens in our data of *who* as nonsubject relativiser contrasts with the results of other studies. For example, Beal and Corrigan (2007) found that *wh-* forms were used in Tyneside as object relative forms with human antecedents 34.8 per cent of the time (with zero forms used with a rate of 43.5 per cent and *that* with a rate of 21.7 per cent). Presumably in Tyneside (and elsewhere where *who* still occurs as a nonsubject relativiser) *who* has taken the place of the older form *whom*, which is now associated with formal written English.

As a subject relativiser, *who* occurs only twice in our London data with an inanimate antecedent:

(16) and it wasn't Beeching who closed it it was the southern railway who closed the line between Wareham and Swanage (Stan 2, 10.45)

(17) down the bottom we had the newsagents who delivered to people (Doug 49.10).

⁵ Note that the speakers in our recordings rarely talked about non-human animates or superhuman beings (and they rarely used collective nouns, a further category often used in analyses of different types of animacy), so our 'animate' category consists entirely of human referents. Tagliamonte et al. (2005) found that *who* was used more than twice as often with the frequent lexical item *people* than with other human subjects: we therefore included *people* as a separate category of antecedent in our analysis, but found no significant effect.

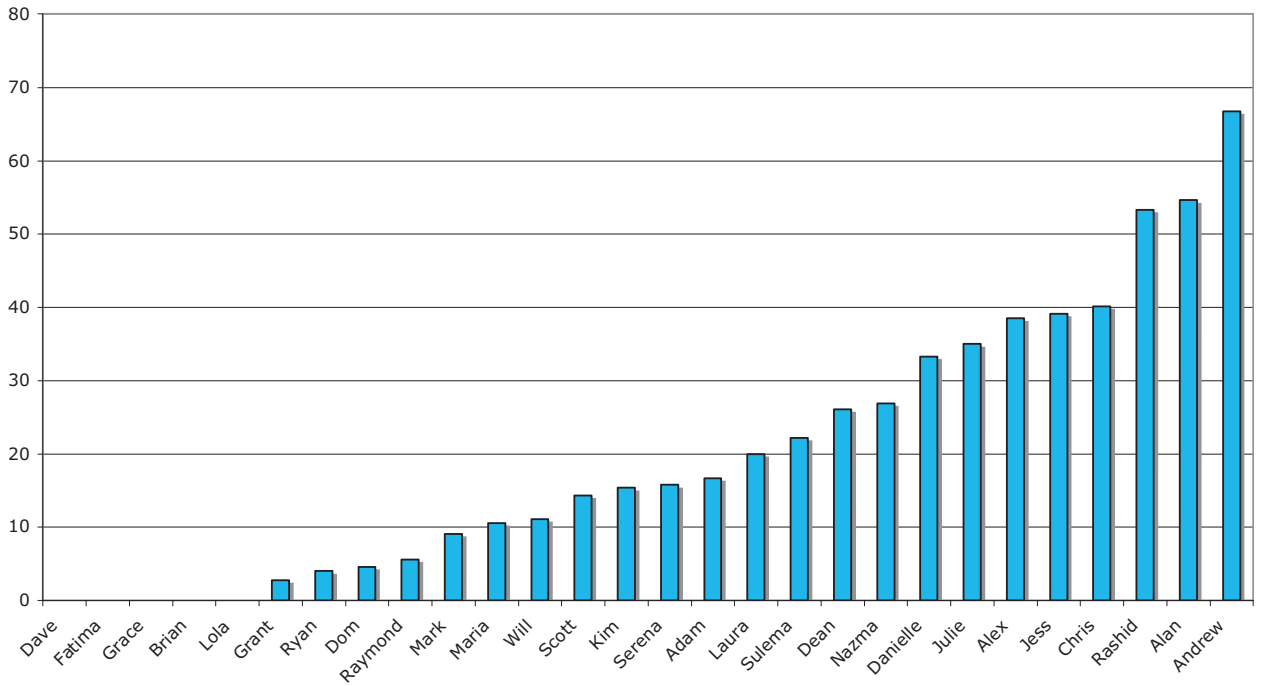


Fig. 6. Percentage *who*: individual speakers, Hackney.

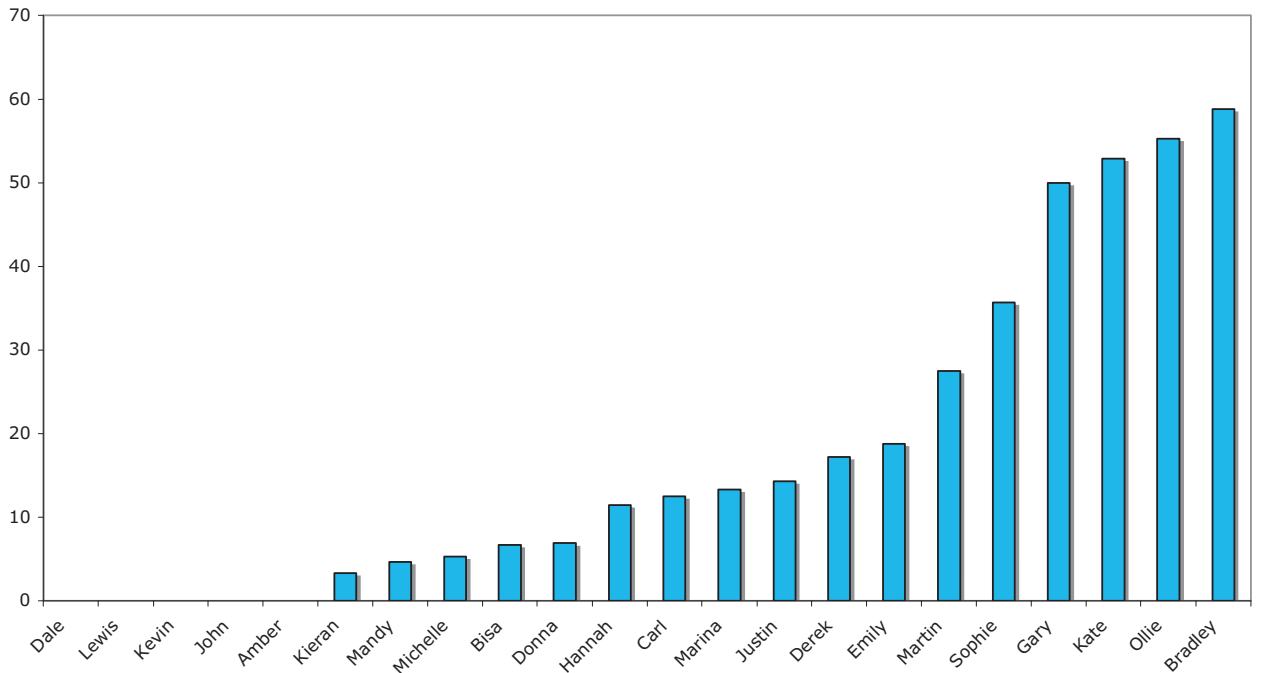


Fig. 7. Percentage *who*: individual speakers, Havering.

However, in (16) ‘the southern railway’ is presumably treated as human, given that it is the subject of causative *closed*; and in (17) Doug was referring to a shop, but clearly a human being did the delivery.

It appears then that there is a categorical constraint operating in the grammars of all our speakers that rules out the use of *who* with inanimates, irrespective of whether the relativisation is of a subject or an object. Further, there is only marginal

Table 5
Percentage (N) subject relativisers with animate antecedent.

	<i>that</i>	<i>who</i>	<i>what</i>	<i>which</i>	zero	(total N)
Hackney 65+	42.5 (31)	42.5 (31)	0.01 (1)	0.01 (1)	12 (9)	(73)
Hackney 16–19	64.6 (320)	32.3 (160)	0	0	3.0 (15)	(495)
Havering 65+	39.5 (32)	48.1 (39)	0	0	12.3 (10)	(81)
Havering 16–19	61.9 (218)	36.1 (127)	0	0.85 (3)	1.1 (4)	(352)

Table 6
Percentage (N) subject relativisers with inanimate antecedent.

	<i>that</i>	<i>who</i>	<i>what</i>	<i>which</i>	zero	(total N)
Hackney 65+	46.3 (19)	2.4 (1)	24.3 (10)	19.5 (8)	7.3 (3)	(41)
Hackney 16–19	93.8 (75)	0	1.2 (1)	2.5 (2)	2.5 (2)	(80)
Havering 65+	70.8 (34)	4.2 (2)	0	14.6 (7)	10.4 (5)	(48)
Havering 16–19	95.6 (66)	0	1.4 (1)	1.4 (1)	1.4 (1)	(69)

use of *who* to relativise an object: for most speakers, then, there is a further categorical constraint that rules out the use of *who* as an object relativiser. From the perspective of the morphosyntactic representation of the relativisers, we can conclude that *who* is specified as being nominative, and as requiring that the head of the noun phrase that it modifies is human.

The reduction of variation in the adolescents' relativiser system means, of course, that they have fewer variants than the older speakers to use for subject relativisers with human antecedents. Table 5 confirms that with human antecedents almost the only form that the younger speakers use in addition to *who* is *that*, whereas older speakers use not only *who* and *that* but also the zero form. With inanimate referents the reduction of variation means that although the older speakers used a wide range of forms, especially in Hackney (see Table 6), the adolescents now use almost only *that*. Now that the analysis is restricted to only those individuals who contributed a minimum of ten relative clauses to the data, the figures in Table 5 suggest that *who* may be less stable than previously appeared, since the percentage frequency of use is lower for younger speakers than for the older generation; nevertheless, although it could be declining in young people's speech relative to the usage of the older generation, it is still a robust form for them. Recall though that for adolescents in both Hackney and Havering *who* is no longer part of a *wh*-relativiser system. For these young speakers *which* is almost nonexistent in restrictive relative clauses and *whom* and *whose* do not occur: for them, therefore, *who* is simply an independent particle that occurs only with semantically human antecedents and almost exclusively as a subject relativiser. The question that now arises is whether the variation between the subject relativisers *who* and *that* is structured and, if so, what factors impact on the use of the variants.

The fact that, in our data, *who* is essentially used only as a subject relativiser with human antecedents suggests a further factor that may be relevant to its survival in London English. There are well-known cognitive links between animacy (or humanness) and subjecthood, and animacy and topicality (see, amongst others, Givón, 1990:901; Lambrecht, 1994:136; Myhill, 1992:38; Siewierska, 1984:221). The term 'topic' is used in several ways in the literature; here, we use it to refer to what the sentence or discourse 'is about' (Reinhart, 1981; Lambrecht, 1994:118). The cross-linguistic correlation between animacy and topic is so striking that some argue for animacy and topicality to be combined into the single factor of topicworthiness (see Rosenbach, 2005:66; Deane, 1987). From a diachronic perspective, some types of grammatical variation in English correlate not only with the animacy scale (Bresnan and Hay, 2008) but also with topicality (Rosenbach, 2008). There is also experimental evidence of a relationship between animacy and topic (Prat-Sala and Branigan, 2000). We therefore carried out a further analysis of variation between *who* and *that*, this time taking account of the topicality of the antecedent noun phrases of subject relativiser forms with human referents. In order to operationalise topicality, we adopted Givón's perspective (1990:902), assuming that a topic is only 'talked about' or 'important' if it remains 'talked about' during a number of successive clauses.

We therefore followed Givón (1983, 1990:908) in analysing cataphoric topicality in terms of the persistence of the topic introduced by an NP in the discourse. There are two types of Topic Persistence counts, usefully summarised by Myhill (1992:36–37). One method counts the number of consecutive following clauses in which the referent of the NP being coded is mentioned. The other method counts the number of following clauses where the referent of the NP being coded is mentioned, up to a maximum of ten clauses. In this case, the clauses do not have to be consecutive: there may be intervening material. Myhill comments (1992:36) that as far as he is aware no study has compared the relative advantages

and disadvantages of the two methods. We decided that the second method was more appropriate for the spontaneous discourse that we were analysing, where neither topics nor speaker turns were predetermined. Previous analyses of topic persistence have usually been based on elicited narratives or other kinds of lengthy texts from a single speaker (see, for example, Givón, 1990; Epstein, 2011), where there is a greater likelihood that a topic will be maintained in consecutive clauses. When speakers uttered fewer than ten clauses after using *who* or *that* as a subject relativiser referring to an animate antecedent, we included in the count any relevant clauses produced by other participants in the conversation, on the grounds that it is typical of conversation for topics to be developed by all participants (Crystal, 1980).

As illustrations of the method, consider the extracts in (18) and (19).

- (18) I've done three things cos of my mum and one thing for my little brother . my medium brother **who** moved to Antigua cos **he's** got a spinal disorder so **he** grows kinda slow [S: mhm] so **he** is kinda short . people were swinging **him** about in my area . I thought "what?" . now I lived near **him** then in north one I still had my house in east London cos that's where I've lived born and raised like I had a house in east London where my nan lives

(Alex: Alex_Zack 1, 1.40.00)

Who in the relative clause *who moved to Antigua* refers to 'my medium brother'. Alex then refers to this brother (shown by the pronouns in bold type) in 5 of the 10 following clauses, before sidestepping in the next four clauses to the topic of his house. The topic persistence index for *who* in example (18), then, is 5/10 or 0.5.

In (19), on the other hand, *that in people that were on the bus* refers to 'people' but in subsequent clauses these people are not mentioned again (*people in people do come together* and *people do get affected* does not refer to the same set of people). The topic persistence index for *that* in example (13) is therefore 0/10 or 0.0.

- (19) when disasters happen like public and national things happen that's when people come together and no longer see it as a . as us being a different race because at the end of the day . **people that were on the bus** were all different types of people so therefore all different types of families got affected by the same thing so natural and national disasters that happen in Britain everyone feels it and sometimes I think like religiously speaking sometimes I think . like them things . should happen but there is still a benefit from like disasters because people do come together and we realise that people do get affected so yeah . so I'm definitely a Londoner (Serena: Serena_Lola, 1.13.51)

Once we had coded the topic persistence of each token, we followed the standard practice in variationist linguistics of amalgamating scores for individual tokens into a single group score. The group topic persistence indices are shown in Table 7. Thus, the score of 0.18 for older Havering speakers (aged 65+) results from their use of 38 tokens of *who*, with a potential topic persistence score of 380 (which would have been obtained if each of the 38 antecedents of *who* in the data

Table 7
Topic persistence of animate antecedent of subject relativiser.

	<i>who</i>	<i>that</i>
Havering 65+	0.18 (70/380)	0.24 (76/320)
Hackney 65+	0.17 (43/260)	0.22 (60/270)
Havering 16–19	0.19 (173/930)	0.16 (205/1260)
Hackney 16–19	0.32 (513/1580)	0.20 (445/2260)

had been mentioned in all ten clauses following the *who* clause). However, the referents of these 38 tokens were mentioned in only 70 of the 380 subsequent clauses (70/380 = 0.18). Although for the elderly speakers use of the zero form appeared moderately robust in terms of percentage frequency (12 per cent for each of the elderly groups) this percentage was based on a low number of tokens (10 for the Havering elderly and 9 for the Hackney elderly), so we excluded the zero form for this part of the analysis.

Table 7 shows that, for the older speakers, there are no significant differences in the topic persistence of referents marked by *who* or *that*. Topicality of the referent did not affect the use of *who* or *that* for the younger speakers in Havering either. For the adolescents in Hackney, however, the differences are very striking: there is a statistically significant tendency to use *who* for an antecedent NP when the referent persists in the subsequent discourse (chi square = 85.236, df 1, 2 tailed *p* value < 0.001). Conversely, *that* tends to be used when the referent has lower topic persistence. The topic persistence score for *who* of 0.32 indicates high overall topicality of the preceding referent (Givón, 1995:66; Epstein, 2011:125).

To summarise, all groups of speakers use *who* as a subject relativiser with animate referents. The straightforwardness of the semantic relationship between *who* and humanness is perhaps enough to explain the survival of *who* in the face of levelling of other relativiser variants, especially as human NPs relativised as the subject of the relative clause are the most frequent type of relativised NP in the data (see Tables 5 and 6, and Figs. 2–5). Furthermore, the semantic distinction between human and nonhuman referents seems to be important to speakers. This point is made by Ball (1996:250) when explaining why *who* replaced *that* to a greater extent than *which* during the course of the 18th century. These relationships alone may explain the survival of *who* in London (though it does not explain why *who* appears to be decreasing elsewhere in the UK). We have also shown empirically that, in one particular group (the young speakers in Hackney), a new pattern emerges that connects the use of the relativiser *who* to topicality. Again, the morphosyntactic specification of *who* may account for the new pattern: human referents have consistently higher topicality persistence counts cross-linguistically (Myhill, 1992:47), as do subjects, whereas direct objects and obliques are characteristically low in topicality (Myhill, 1992:50). Subjecthood, animacy and topicality seem to align typologically, suggesting that such an alignment may be cognitively effortless.

Nevertheless there are two questions that need to be resolved. First, how is this change embedded into the grammar of the individuals in the young Hackney group? This is the ‘linguistic structure’ part of the embedding problem of Weinreich et al. (1968:185). Second, why has this development occurred only in Hackney and not in the outer London location, Havering? In Havering the frequencies and distribution of *who* are almost identical, but in this location both *who* and *that* have relatively low topicality scores. This brings us face to face with the actuation problem: in Labov’s words (2001:466): “why here and now? ... why *not* here and *not* now?”

5. The actuation problem

5.1. Variation as feature matching

In order to address the embedding question, we begin by setting out the variation we have observed between *who* and *that* within a framework that allows us to model the structured heterogeneity of the linguistic systems under discussion.

We saw in the previous section that there is a categorical constraint in the grammars of our speakers barring the use of *who* with an inanimate antecedent. In order to be explicit and concrete about the nature of the linguistic systems within which the change embeds, we will implement this constraint as a feature matching requirement (as in current proposals in the Minimalist syntax literature, e.g. Chomsky, 1995; Adger, 2003). That is, we will assume that it is a grammatical property of the relativiser *who* that its antecedent must be animate:

(20) [*u*animate:+] <--> *who*

Here the italicised *u* signals that *who* must combine with some category that is specified as [animate:]. For example, (21) is ruled out as ungrammatical because the antecedent of *who* is [animate:–] (or, equivalently for these purposes, unspecified for the [animate] feature). See Adger (2003) for extensive discussion of how this notation can be used to capture a wide range of syntactic dependencies of this sort.

(21) *The chair[animate:–] *who*[*u*animate:+] fell

An immediate advantage of this kind of ‘feature checking’ approach is that, when some element is unspecified for a feature, the system allows the choice of more than one variant. For the case in hand, we assume that, unlike *who*, the relativiser *that* does not bear an animacy requirement. This gives us the following set of possibilities:

- (22) a. *The chair[animate:–] who[uanimate:+] fell
 b. The woman[animate:+] who[uanimate:+] fell
 c. The chair[animate:–] that fell
 d. The woman[animate:+] that fell

The simple expedient of using features to capture the categoriality of certain grammatical constraints, when combined with the possibility of not specifying certain features, allows us to formally capture where variation is possible and where it is not. It is underspecification, then, that gives optionality. Adger (2006) and Adger and Smith (2010) show how a simple system like this can be extended to cover at least some of the kinds of grammatical variation that have long been of interest to sociolinguists.

The system just outlined for relativisation is grammatically stable: the feature specifications of *who* and *that* simply allow either to occur with an animate head noun. However, consider what would happen if *who* were to be specified with a further formal feature, interpreted as topicality. In such a system, we would have three (subject) relativisers:

- (23) a. [relativiser:+] <--> *that*
 b. [relativiser:+, uanimate:+] <--> *who*
 c. [relativiser:+, uanimate:+, utopical:+] <--> *who*

This system takes *who* to be grammatically homophonous: two distinct bundles of features correspond to a single phonology (much like, for example, Standard English *are*, which must be specified as [uplural:+] when it occurs with *we* or *they*, but [uplural:–], when it occurs with singular *you*).

On the assumption that each relativiser has an equal input probability, individuals who have all three relativisers will select them randomly. However, this predicts that such individuals will use the form *who* more frequently with topical than with non-topical noun phrases. Schematically, we have the following situation:

- (24) a. NP[animate:+, topical:+] (23a) *that*, (23b) *who*, (23c) *who*
 b. NP[animate:+, topical:–] (23a) *that*, (23b) *who*

Both (23b) and (23c) can be used with a topical noun phrase, but only (23b) with a non-topical one; it follows that topical noun phrases are expected to occur with *who* more often than with *that*, while there is no such expectation for non-topical ones. That is, a model that embeds the relevant factors into speakers' grammars in this way predicts an imbalance in the use of the relativisers. Importantly, the surface (phonological) forms *that* and *who* are both possible with topical and non-topical NPs, but the form *who* is predicted to be more frequent with the former.

This framework then provides us with a way of addressing (at least part of) the embedding question for the change that we are interested in here: the grammars of some of the younger Hackney speakers are augmented by a further specification which links the surface form *who* with topicality. The change therefore involves a co-opting of a new feature into the grammars of the speakers, attaching it to a variant that is already present, but giving that variant a new function. However, the particular framework we adopt here further provides a way of connecting the resulting grammatical representations with patterns of frequency of use of the different surface forms. This then provides a mechanism for the actuation of the change as an imbalance of frequencies deriving from the possible patterns of grammatical dependency.

With this proposal for a solution to the embedding problem in mind, let us turn to the different sociolinguistic situations in the two areas of London; we will argue that these different situations, combined with the theoretical assumptions outlined immediately above about capturing variation, provide an explanation for the link between the *who* variant and topic persistence which we showed to be emerging among the younger speakers in Hackney but not in Havering.

5.2. Why now?

Is it possible to trace a time when speakers in Hackney began to use *who* to mark an antecedent as a potential topic? We have seen that the older indigenous Hackney speakers do not use *who* in this way. These speakers were born around 1930. The adolescents in our Hackney sample were born between 1986 and 1989. A set of data from an intermediary period would help to set a date for the emergence of the innovation. It so happens that we have recordings, made for a different research project (*Multicultural London English*, Kerswill et al., 2007–2010) of children and their adult caregivers from the same general area of London, born between 1965 and 1975. We analysed the subject relative forms used for human referents by 14 of the caregivers. Four of these speakers were indigenous London Anglos, four were first or second generation AfroCaribbean immigrants and six were first generation bilingual immigrants from different countries: Morocco, Nigeria, Turkey and Bangladesh. The results of this analysis are shown in Table 8. Although frequencies are low overall,

Table 8

Percentage (N) use of subject relativiser *who* and *that* and topic persistence of their animate antecedents: intermediate age group.

	% (N) <i>who</i>	TP <i>who</i>	% (N) <i>that</i>	TP <i>that</i>
Anglos				
Charles' mother	100 (12)	25 (30/120)	0	–
Howard's mother	50 (1)	0 (0/10)	50 (1)	1 (1/10)
Henry's father	72.7 (8)	23.8 (19/80)	27.3 (3)	56.7 (17/30)
Ben's mother	40 (2)	25 (5/20)	60 (3)	13.3 (4/30)
Total	76.7 (23/30)	23.5 (54/230)	23.3 (7/30)	31.4 (22/70)
AfroCaribbeans				
Beverley's mother	0	–	100 (2)	30 (3/10)
Troy's mother	0	–	100 (5)	32 (16/50)
Junior's mother	0	–	100 (6)	28.2 (17/60)
Tamila's mother	30 (3)	10 (3/30)	70 (7)	7.1 (5/70)
Total	13 (3/23)	10 (3/30)	87 (20/23)	21.6 (41/190)
"others"				
Wahid's parents (Moroccan)	0	–	0	–
Jaja's mother (Nigerian)	0	–	100 (1)	30 (3/10)
Ikram's parents (Turkish)	0	–	0	–
Raj's mother (Bangladeshi)	85.7 (6)	10 (6/60)	14.3 (1)	0 (0/10)
Total	75 (6/8)	10 (6/60)	25 (2/8)	15 (3/20)

Total number of relativisers produced by *Anglos*: 30; Total number of relativisers produced by *AfroCaribbeans*: 23; Total number of relativisers produced by '*others*': 8.

we list the figures for individual speakers in order to show the striking differences between these three groups of speakers. Note, though, that the figures for the Turkish and Moroccan caregivers are those for the mothers and fathers combined, since overall frequencies were so low for these individuals.

Note, first, that the number of subject relative clauses overall is low, especially for the "other" group. In this group only Raj's mother used relative clauses with any frequency. She was the only person in the bilingual "other" group who was completely fluent in English (and Sylheti). The Nigerian speaker (Jaja's mother) spoke Yoruba as well as English and was attending English classes to improve her English. The Moroccan and Turkish speakers struggled to maintain a conversation in English: their dominant languages were, respectively, Moroccan Arabic and Kurdish. Second, note that all the AfroCaribbean speakers use mainly *that* as a subject relativiser, with only Tamila's mother using *who* at all. Apart from Raj's mother, it is the Anglo speakers who are the main *who* users – though, as in previous studies, we find considerable variation between individual speakers. Finally, and importantly, note that for none of these speakers is there a correlation between the use of *who* and the topic persistence of the referent. The generation of speakers born between 1965 and 1975, then, do not use *who* with a topic-marking function. In fact, with the exception of the Bangladeshi speaker, the non-Anglo speakers hardly use *who* at all. This indicates that we can date the emergence of topic marking *who* to a subsequent generation of speakers. The adolescents in our sample, who were born twenty years later, presumably represent the first generation of speakers to use *who* in this way. They do not seem to have acquired this usage from their caregivers, who would have been about the same age as the speakers in our intermediate age group. Instead, they must have created it for themselves.

5.3. Why here and now?

We have attributed the innovation to a specific generation of Londoners, but still need to address the question of why a topic marking function for *who* has emerged in Hackney but not in Havering. We assume that the answer must lie in the different linguistic histories of adolescents living in these two areas of London. In Hackney this generation of speakers, born in the late 1980s, has undergone different sociocultural and sociolinguistic experiences from the two preceding generations in Hackney as well as from their peers in outer London.

The older speakers in Hackney were monolingual speakers of vernacular London English, born in the 1930s and brought up in an area populated by traditional white working class families. Language contact was not part of their linguistic background. For the intermediate age group, born between 1965 and 1975, Hackney was now populated by immigrant groups as well as by the remaining indigenous Londoners (recall that there was large-scale relocation of

families from Hackney from the 1950s on, with their place taken by successive waves of immigrants from overseas). As Fox (2007) documents, large groups of AfroCaribbeans and Bangladeshi (mainly men at first) were amongst the earliest immigrant populations, but these were soon joined by immigrants from a very wide range of countries (as we saw earlier, in Table 1). During the period when this generation was growing up, immigrant groups tended to live in relatively isolated and homogeneous ethnic groups. Within these groups, children tended to keep the language of the home and the language of the school separate. The bilingual children may not have acquired English until they attended school, and the English that they heard there was the local London vernacular. Sebba's (1993) research shows that AfroCaribbean adolescents in the 1980s were bidialectal, switching between a Jamaican Creole 'patois' and London English.

By the late 1990s, however, when the adolescents in our sample were growing up in Hackney, the linguistic ecology of the area had changed. Hackney was becoming increasingly multicultural and multilingual, and many children acquired English and another, home, language simultaneously. Even if their parents did not speak English at home, children acquired English at a very young age from older siblings and from their peers at nursery school. Their target variety of English would have been the English spoken by their peers, who include both Anglos and non-Anglos. The English they heard in the peer groups would have been far from uniform, since the linguistic backgrounds of individual speakers differed greatly, and norms were consequently diffuse. Children growing up in Hackney now speak a variety of English that has been termed 'Multicultural London English', or MLE: an ethnically neutral variable repertoire of features that contains a core of innovative phonetic, grammatical and discourse features (Cheshire et al., 2011). These innovations are led by non-Anglo speakers, and we assume that language contact plays an important role in their emergence. Anglo children in Hackney also use MLE features, especially those with multiethnic friendship networks, though the frequency with which they use these features is lower than for non-Anglos. It is worth stressing that MLE is not acquired from the parents' generation: it is acquired in childhood, mainly from peers but with additional influences from older siblings. This, then, is the variety of English that is spoken by the Hackney adolescents in our sample. We can add topic marking *who* to the list of innovations that characterise MLE.

The most striking difference between Hackney and Havering, then, is that dialect contact has occurred in Havering, while language contact has occurred in Hackney. It is therefore relevant to examine the role that language contact could play in the emergence of the new function for *who*.

Matras (2009:78–79) argues that in order to sustain communication bilingual speakers "draw in a creative way on various components in their full linguistic repertoire, thereby often blurring the boundaries between 'languages' and over time conventionalizing new structures". This applies to all types of language contact settings, as does Siegel's (2003:196) view of language transfer as "a communication strategy, or a way of overcoming communication problems".

Matras (2010:81) points out that the features that are most susceptible to transfer are those that convey the speaker's monitoring and directing of the interaction – including, then, features marking different types of discourse prominence. These, he points out, are subject to automatic routine rather than to "inflection and intent". He argues, further, that the linguistic items that are most susceptible to this type of language transfer reflect speakers' efforts to successfully manage vulnerable points in the discourse. This explains, for example, why conjunctions with the meaning 'but' are more likely to be borrowed than conjunctions meaning 'and': speakers are aware that the expression of contrast may be received more hesitantly by their interlocutor. In spontaneous conversation the introduction of a topic is also a vulnerable point for speakers, since there is a risk that the topic will not be taken up by the interlocutors. The introduction of a topic could therefore be a likely point for language transfer to occur. Hulk and Müller (2000) make a further relevant point, arguing that the influence of one language on another is most likely to occur when an interface level is involved. Topic-marking is exactly this – it is at the interface between syntax and pragmatics.

In the following sections, we examine how topic and other kinds of discourse prominence are marked in some of the languages other than English that are spoken in Hackney, in order to assess the possibility that language transfer has played some role in the emergence of the topic marking function for *who*.

Note, though, that this development may have occurred even without the occurrence of direct language transfer. Kotsinas (2001:153), for example, writing about a multilingual setting in Stockholm, Sweden, that resembles that of present-day Hackney, notes that in the Swedish of second generation immigrant teenagers, direct transfer from the first language (the parents' language) seems to play only a minor role. Instead, she claims that "universal linguistic and communicative strategies" are important in determining the features that occur in the teenagers' variety. Wiese et al. (2009) suggest that information structuring is a major driving force in the development of contact languages (Wiese et al., 2009). And Escure (1997:286) argues that speakers of vernacular languages with no pre-existing topic-marking morphology tend to assign topic-marking values to grammaticalising elements such as adverbs or deictics. Topic marking, then, can be considered to be one of the information structuring strategies that drive innovation in situations of extreme linguistic diversity.

In fact, Müller and Hulk's research on children's acquisition of two languages suggests that both language transfer and general communicative strategies may be relevant. They claim (2001:18) that the interaction between syntactic and pragmatic information seems to be particularly difficult for children, and that in the early stages of acquisition all children,

monolingual and bilingual alike, tend to use “universal pragmatic strategies” which, later, must be mapped onto language specific syntactic rules. At this transition, transfer may occur if the child sees a syntactic construction in one language allowing for more than one grammatical analysis, one of which is compatible with a general pragmatic strategy (such as the morphosyntactic marking of information structure). Müller and Hulk note that bilingual children tend to stay at the universal (pragmatic) stage longer than monolingual children.

The development of a topicality function for subject relativiser *who* can be understood within this overall perspective. We saw earlier that *who* may be analysed as grammatically homophonous: one version has the feature [*u*animate:+] while the other has the features [*u*animate:+, *u*topical:+]. The [*u*topical:+] feature is compatible with an information structuring strategy that allows speakers to direct the interaction. Bilingual children in Hackney who grow up acquiring two languages may simultaneously assign a relativising function and a discourse prominence marking function to *who* as a result of direct language transfer from their other language(s) if that language has a feature that marks discourse prominence. The cognitive link between animacy, subjecthood and topicality means that the type of information structuring function that they assign to *who* is likely to be topic marking. Monolingual speakers with bilingual friends may then begin to use *who* in a similar way. As we have just seen, they too have to resolve the same general communicative pressures to mark information structure.

In the following sections, then, we first examine how topic and other kinds of discourse prominence are marked in some of the other languages spoken by the Hackney adolescents, in order to assess the potential role of language transfer. We then investigate the role of language contact from a sociolinguistic perspective, analysing the use of topic marking *who* by monolingual Anglo adolescents and by non-Anglos.

5.4. Topic-marking in the other languages of Hackney

Present-day English does not have a specific topic marking feature, using instead a range of non-canonical syntactic structures such as presentational existential clauses and left-dislocated ‘presentational’ constructions to introduce both a new subject and a new topic into the discourse (Givón, 1983; Lambrecht, 1994:165; Escure, 1997). Present-day English is unusual, however; it is more common in other languages for topical referents to be given special grammatical marking (Givón, 1995:65) while less topical referents are left unmarked (see also Epstein, 2011:125). Even English once marked topical referents in such a way, using variation between the presence or absence of the demonstrative determiner *se* for this purpose (Epstein, 2011). This function was variable, existing as a statistical tendency rather than as a categorical rule (like the function of *who* in our Hackney adolescent data). Epstein comments that this is typical of morphemes in an early stage of grammaticalisation (2011:122–123).

The languages spoken by the bilingual adolescents in our sample are (a form of) Jamaican Creole, Ghanaian Creole English, Moroccan Arabic, Sylheti, Bengali, Twi, Spanish and Maltese. Yoruba is spoken by some of their friends. Most of these languages contain forms that mark different kinds of discourse prominence, usually termed either topicalisers or focus particles. Note though that it is not always straightforward to distinguish between focus and topic when analysing spontaneous discourse nor, indeed, to distinguish clearly between focus, topic and other kinds of discourse prominence. Although a clear distinction can be made using syntactic or pragmatic criteria when analysing isolated sentences (see Ward and Birner, 2004 for a general overview), in spontaneous discourse there is often no syntactic mechanism that differentiates between them (Escure, 1993:235). As an example, consider again the first few clauses of example (18):

- (18) I’ve done three things cos of my mum and one thing for my little brother . my medium brother who moved to Antigua.

A typical distinction made between topic and focus is that topic can be seen as a response to “tell me about X” whereas focus implies alternatives, including supplying answers to covert questions (see, for example, Krifka, 2006). Krifka gives the example *once upon a time, there was a princess*, where *a princess* is the focus, implicitly replying to a question such as “what was there?” In (18) *my medium brother* could be seen as a response to “tell me about your brother”, which the speaker then proceeds to do in the following five clauses. It could also, though, be seen as a response to “who did you do something for?” (Of course, the distinction is further complicated by the false start *my little brother*.) Should we, then, see the referent of *my medium brother* as the topic or the focus of the clause? Many researchers working on spontaneous spoken Creole languages sidestep the issue by using the generic term ‘emphatic particle’ for any particles that highlight sections of the discourse. This captures the essential point that the speaker is marking something in the discourse as important information. In what follows we retain the different terms that individual researchers have used, but use the generic term ‘discourse prominence’ to refer to both topic and focus, as well as other forms of marked information structure. This allows us to refer to a variety of related linguistic phenomena, none of which have obvious parallels in English.

5.4.1. English Creole varieties

We begin by discussing Creole varieties of English, which use a wide range of different particles to mark discourse prominence. Consider, for example, *da* in example (25), from a Belizean Creole English text discussing an oil slick in Guatemala (from [Escure, 1993](#)). Here the first clause is attributed to the Guatemalan authorities after the oil slick had occurred; *da* in the second clause then reinforces the new topic, the captain ([Escure, 1993:242](#)).

- (25) dey dɛ look fu one slip, right
they were looking for a mistake
- da** di captain slip up
the captain erred ([Escure, 1993:235](#))

In Jamaican Creole, *a* occurs before nouns or adjectives with the meaning ‘it is’ or ‘there are’ ([Cassidy, 1961:59](#)). It can therefore be thought of as serving a presentative function. [Patrick \(2004\)](#) describes *a* as serving to focus a wide range of fronted or clefted constituents, with the fronted item receiving an emphatic or contrastive meaning. *A* could, then, be considered as a focus marker: it is usually, however, analysed as an ‘emphatic particle’, as just mentioned. More relevant is the fact that, like English *who*, the same particle occurs in interrogatives; see for example, (26).

- (26) a who sen yu?
who sent you? ([Cassidy, 1961:59](#))

[Christie’s \(1996\)](#) detailed analysis of relative clauses in Jamaican Creole finds a high proportion of restrictive relative clauses used simultaneously to relativise and focus the antecedent noun phrase, most frequently in left dislocated clauses, such as (27).

- (27) di leidi we ben gi mi di tuu die shi sel di plies
‘the lady who had given me two days [work], she sold the place’

Christie assumes, with [Schachter \(1973\)](#), that both relativisation and focusing are examples of foregrounding, assigning special prominence to part of the clause – in the case of relative clauses, to the relativised NP. [Huber \(1999:207\)](#) notes, similarly, that in Ghanaian Pidgin English relative clauses modifying a subject head are focusing devices, since they create a contrastive environment by limiting the referential scope of the noun. In (28), for example, he argues that the referent is ‘the very boss I am talking about, not just any boss’.

- (28) de bos [we i de de] i bi ma onkel
DEF boss [CMPL 3SB COP there] 3SB COP 1SP uncle
‘the boss there is my uncle’

As we have just argued, what is relevant is not whether the foregrounded sections are labelled as focus or topic, but that they are made prominent in the discourse. The general all-purpose relativiser in English Creoles is usually *we* (thought to derive from English *where*) or, in some Creoles, including London Jamaican ([Sebba, 1993](#)) *dat* (from English *that*).⁶ For example, Huber’s sample of 78 relative clauses in Ghanaian Creole (Ghanaian Pidgin English) contains *we* in 93.9 per cent of subject relative clauses and 80.8 per cent of object relative clauses, with the zero form accounting for the remaining tokens ([Huber, 1999:184](#)). Hackney adolescents with experience of an English-based Creole, then, may expect to hear a single all-purpose relativiser. They would have no problem in using *that* for this purpose: it is close to London Jamaican *dat* and it has general functions in English as a form with no identifiable meaning of its own, used to mark particular syntactic structures ([Huddleston and Pullum, 2002:1183](#)) and, indeed, to act as an all-purpose linguistic signpost ([Cheshire, 1995](#)). There is nothing in the basilectal Creoles, though, that matches the use of a single form such as English *who* for only certain types of relativised NPs – those that are the subject of the relative clause and that have an animate referent. Equally, there is no obvious candidate in English for use as a foregrounding or emphatic particle, like *a* in Jamaica Creole. It is possible, therefore, that speakers who are familiar with an English-based Creole will be guided by the structure of the Creole language to assign to *who* the function of marking discourse prominent items.

⁶ *Huu*, ‘who’ occurs in non-basilectal varieties, as do *huufu*, ‘whose’, *wa(t)* and the zero form.

5.4.2. Bengali and Sylheti

Creole varieties are not the only ambient languages in Hackney with particles used for discourse-pragmatic functions. Bengali (closely related to Sylheti) has the particles *je*, *to*, *naki* and *ki* to indicate that a phrase is given information or the topic of a sentence. The rest of the sentence then provides new information, with the peak of this new information marked by the particle *-i* or *-o* (Bhattacharya, 2001). Bhattacharya gives the following example, where *-to* indicates that 'Probin' is the topic and *-i* marks the information peak ('this house').

- (29) Probin-to ajkal e baṛi-t-i thak-che
 Probin-TOP these days this house LOC-EMP AUX-PROG 3
 'As for Probin, these days he is staying in this very house'

Some of these Bengali particles function elsewhere in the language as question words. Bai (1991) points out that it is typical of Indo-Aryan and Dravidian languages generally to use forms that elsewhere function as question words for a range of discourse functions. Example (30), below, illustrates this for Hindi *kii*.

- (30) aamaar *kii* aami hētei cole jaabo
 my what I emph on foot walk will go
 'as for me, I can even go walking' (Bai, 1991:201)

Perhaps, then, familiarity with the use of question words as discourse particles motivates speakers of Bengali and Sylheti in Hackney to assign a discourse function to *who*. In this case it would be the function of English *who* as a question word that is the main motivation. Recall that in Jamaican Creole *a*, similarly, occurs in questions as well as in other kinds of discourse prominent contexts.

5.4.3. Moroccan Arabic

In Moroccan Arabic, as in many pro-drop languages, the independent 'strong' pronouns generally have an emphatic or contrastive function (Ouhalla, 1999; Ryding, 2005:299). The third person pronouns *huwa*, 'he', *hija*, 'she' and *huma*, 'they', can be employed as what is usually considered to be a connector in clauses with no copula, as in (31)

- (31) ana *huwa* əl- muɛallim
 1 SG 3 SG DEF teacher
 'I am the teacher'

Traditionally the function of the pronoun in copula-less clauses has been thought of as expressing identity of reference between the subject and the predicate (Eid, 1991:33) and therefore clarifying the link between the subject and the predicate (Ryding, 2005:300). Chatar-Mounmi (2003), however, draws attention to the fact that the presence of the pronoun is variable, with intonation sometimes used instead of the pronoun to indicate which of the two determiner phrases is the subject and which is the predicate. She argues that in Moroccan Arabic *huwa* is better analysed as a focusing or highlighting particle ('un procédé de mise en valeur'), since this is the way that speakers use it. Her survey of native speakers revealed, further, that speakers associated the form with a relative construction, *huwa lli*, as in (32).

- (32) hmed *huwa lli* əl- muɛallim
 Ahmed he who DEF teacher
 'It's Ahmed who is the teacher'

Huwa can also be used clause-initially to indicate that the following noun phrase is a topic. In this context it is commonly abbreviated to *hu* (Ouhalla, p.c.). Again, then, we find a particle in one of the substrate languages that has the function of marking discourse prominence and that also tends to occur in relative clauses. Speakers of Moroccan Arabic, like Bengali and English Creole speakers, may be motivated to assign a general highlighting function to English *who*, perhaps further influenced by the phonetic similarity between English *who* and Arabic *hu*.

5.4.4. Igbo and Yoruba

Igbo and Yoruba are spoken in Hackney, as we saw in Table 2, and some of the adolescents in our sample have friends who are speakers of these languages. As far as we are aware, these languages do not have focus or topic particles. They do, however, have specific forms used to mark discourse prominent items – in this case, logophoric pronouns. As in some other West and Central African languages, logophoric pronouns encode the speaker's attitude to the reported proposition.

For example, in (33), from Igbo, the pronoun *yá* is selected in (b) when the pronoun refers to the ‘centre of perspective’ of the discourse domain – here, *yá* refers to the protagonist from whose point of view the story is being narrated. The unmarked form is *ó*, as in (a).

- (33) (a) \acute{o}_i $siri$ $nà$ \acute{o}_j $byàrà$
 ‘ he_i said that he_j came’
 (b) \acute{o}_i $siri$ $nà$ $yá_j$ $byàrà$
 ‘ he_i said that he_j came’ (Siemund, 2003:636–67).

At the same time as encoding the speaker’s attitude, logophoric pronouns disambiguate reference by using different forms for different third person referents. It is conceivable, then, that bilingual speakers of languages with logophoric pronouns are influenced by their first language to assign this kind of function to English morphosyntactic forms. There are no obvious candidates in English that could be used in a comparable way to the logophoric pronouns; but children growing up bilingually may choose *who* as a way of highlighting referents that they want their interlocutors to pay particular attention to, reserving *that* – the all-purpose subordinator in English – for the unmarked form and using it, therefore, to mark referents that they do not intend to be discourse-prominent.

5.4.5. Spanish

Finally, we can note a potential influence from pro-drop languages such as Spanish, where subject pronouns are more likely to be expressed when there is a switch from the subject of the preceding clause (see, for example, Travis, 2007:107). This is a quite different phenomenon from topic marking: in Spanish an overt pronoun is used to mark a referent that is salient because it is not coreferential with the subject of the clause that has just been uttered, whereas we are suggesting that in inner city London English one pronoun form, *who*, is used to mark a referent that will become salient in clauses that are *about to be uttered* in the forthcoming discourse (because the speaker is nominating them as topics). What is common to the two processes is simply the marking of certain referents that speakers want to highlight for information structuring purposes. Both processes, then, mark items that are discourse prominent. It is possible, then, that speakers of languages that use variation between an overt and a null subject pronoun for information structuring may be disposed to see variation between *who* and *that* as markers of more prominent and less prominent information.

5.4.6. Summary

To summarise, the languages we have considered all have features that mark topic and other kinds of discourse prominence. These features are varied: discourse particles predominate, but we have also discussed logophoric pronouns and other types of pronoun usage. There are no comparable forms for marking discourse prominence in present-day English. In their peer groups children have to speak to each other in English, since this is the only language that they share. We do not suggest that when they are speaking they directly transfer forms that mark discourse prominence from their other languages to English *who*, but merely that they may be guided by the existence of such forms to assign an additional feature to *who*. The situation has something in common with the early stages of the development of a Creole language. Note that Siegel (2008:78) claims that language transfer is more likely to occur in a developing Creole if a similar feature exists in several substrate languages.

As for *that*, recall that the reduction of variation in the relativiser system has left *who* as an independent relativising particle with features of animacy and subjecthood, features that are consistent with topic marking. The more frequently occurring *that* form remains as the default relativiser. Its use to link a relative clause to an antecedent is entirely in keeping with its function in English as a general complementiser and, as mentioned previously, as an all-purpose linguistic signpost. Presumably this function has contributed to the adolescents’ take up of *that* as an all-purpose relative marker.

5.5. *Who* as a topic marking strategy in the speech of Anglos and non-Anglos

In order to substantiate our claim that the emergence of the innovative function for *who* in Hackney but not in Havering is due to the influence of language contact (more specifically, of bilingual speakers) we analysed the use of topic marking *who* by monolingual Anglo speakers and by bilingual speakers. Of course, it would have been preferable to analyse the use of *who* by groups of speakers of specific languages, such as Bengali or Sylheti, Arabic or Spanish, but here we were faced with a familiar methodological problem in quantitative analyses of grammatical variation: individual speakers do not always produce sufficient numbers of the form in question. Table 9 therefore compares the use of *who* as a topic marker by monolingual Anglo speakers, considered as a group, and by non-Anglos, also considered as a group. The group of non-Anglos includes the AfroCaribbean speakers as well as speakers of Sylheti, Bengali, Spanish, Moroccan Arabic, Ghanaian Creole English and Twi. We have grouped the mixed race speakers separately, as in terms of their linguistic

Table 9
Topic persistence of *who* and *that* for non-Anglo, mixed race and Anglo speakers.

	TP <i>who</i>	TP <i>that</i>
Non-Anglo speakers	0.40 (159/400)	0.20 (218/1110)
Mixed race speakers	0.34 (206/610)	0.19 (111/590)
Anglo speakers	0.28 (160/570)	0.19 (106/560)

Number of Anglo speakers: 9; number of mixed race speakers: 4; number of non-Anglo speakers: 8.

Table 10
Friendship network scores and use of *who* as topic marker in Hackney: all adolescents.

Network score	TP <i>who</i>	TP <i>that</i>
5	0.36 (351/980)	0.20 (390/1760)
4	0.28 (96/340)	0.20 (78/400)
3	0.25 (66/260)	0.08 (8/100)

Table 11
Friendship network scores and use of *who* as topic marker in Hackney: Anglo speakers only.

Network score	TP <i>who</i>	TP <i>that</i>
5	0.39 (54/140)	0.21 (55/260)
4	0.29 (72/250)	0.22 (43/200)
3	0.19 (34/180)	0.08 (8/100)

Number of speakers with network score of 5: 4; number of speakers with network score of 4: 3; number of speakers with network score of 3: 2.

backgrounds they do not fit neatly into either the Anglo or the non-Anglo group. For example, three of the four mixed-race speakers have Anglo mothers and absent, non-Anglo, fathers: although these three speakers have some interactions with family members who speak a language other than English (and in this respect differ from the Anglo group) these interactions are less frequent than for the speakers we have grouped together as non-Anglos.

Table 9 shows that the use of topic marker *who* is led by the non-Anglo speakers, like other innovative forms in Multicultural London English (Cheshire et al., 2011). There is a clear correlation between using *who* as a topic marker and speaking a language other than English.

We then tested the assumption that the monolingual Anglo speakers develop the use of topic marker *who* through interaction with their bilingual friends. We developed a measure of the ethnicity of a speaker's friendship network as an indirect way of taking account of the influence of language contact on their speech (Cheshire et al., 2008). The adolescents were asked about the ethnicity of their close friends and were given a score between 1 and 5, as follows:

- all friends mentioned of same ethnicity as self: 1
- up to 20% of friends a different ethnicity from self: 2
- up to 40% of friends a different ethnicity from self: 3
- up to 60% of friends a different ethnicity from self: 4
- up to 80% of friends a different ethnicity from self: 5

No speakers in Hackney had a score lower than 3. Table 10 shows a connection between using *who* to mark topicality and participating in a multiethnic friendship network. This table includes all the adolescents whose use of *who* and *that* was analysed – Anglos and non-Anglos alike.

Table 11 now gives the topic persistence scores for the Anglo speakers only, again divided into groups on the basis of their friendship networks. Again we see an association between the use of topic marking *who* and the multiethnicity of the friendship network. The relationships in Tables 9, 10 and 11 are all statistically significant (Pearson's $r = 0.87, 0.71$ and 0.83 , respectively) though since there are only 3 data points this analysis can be only suggestive. Nevertheless it is relevant that all three analyses point in the same direction.

Thus although we do not claim that there has necessarily been direct language transfer from any one language to English, there are separate indications that, firstly, bilingual speakers are more likely to assign an additional topic marking

feature to *who* and, secondly, that Anglo speakers may be influenced by the speech of their bilingual friends to do the same.

Even though we think it unlikely that language transfer plays a direct role, we assume that in childhood the bilingual speakers may be guided by relevant forms in their other languages, as well as by a general communicative bias towards the overt expression of information structure. Another possibility is that parents or older siblings who are dominant in a language other than English innovate various constructions to mark discourse prominence. These second language constructions form part of the English input for second generation immigrant children, who may then conventionalise the different constructions they hear in the peer groups by limiting the marking of discourse-prominence to an existing element with related functions: *who*, which is used in English as a relativiser and an interrogative. This has the potential benefit that they cannot be easily ‘charged’ for divergent language use.⁷ The fact that in these uses *who* occurs only as a subject with animate reference makes it more likely to emerge as a topic marker rather than a more general marker of discourse prominence though, as we have seen, it can be difficult to disentangle different types of discourse prominence in spontaneous speech.

Peer group norms are a further important factor. These explain the take-up of topicaliser *who* by the Anglo speakers. The behaviour of the Anglos is supported by experimental evidence that substrate influences may be carried over to the speech of ‘superstrate’ speakers (in this case, the Anglo speakers in Hackney) through speech accommodation, provided either that there is strong solidarity between the two groups or that the substrate group is larger than the superstrate group (Ehala and Üprus, 2008:92). Both provisos hold in Hackney. We have seen that the use of *who* as a topic marker by Anglo speakers correlates with their having a friendship group that includes speakers of ‘substrate’ languages; and although the relative sizes of the Anglo and non-Anglo groups in Hackney vary from one community of speakers to another, in some communities non-Anglo speakers certainly outnumber Anglo speakers.

We can now return to the ‘why here and now?’ part of the actuation problem. Although it would be perfectly reasonable for a form that is no longer part of a separate system of *wh*-relativiser forms to develop a topic-marking function in both Havering and Hackney (given its properties of marking both subjecthood and animacy, and the close relationship between subjecthood, animacy and topicality), it seems too much of a leap to make for speakers in Havering, who between them speak similar dialects of English and whose caregivers can play the usual role of acting as a model in the early stages of child language acquisition. In Hackney, on the other hand, children do not necessarily acquire English from their caregivers. The diversity of language in children’s multiethnic friendship groups results in a less focused set of norms for the peer group and this results in the emergence of a range of innovative forms including, we suggest, the development of the topic-marking function for *who*.

We want to stress that it is not only the bilingual adolescents in Hackney who have acquired the topic marking function; it is also the monolingual Anglo speakers, albeit to a lesser extent. Thomason and Kaufman (1988:75) point out that if minority group learners are well integrated into a host community they may initiate changes by using forms resulting from their ‘imperfect learning’ of the target language. Given suitable sociocultural conditions, they say, these forms may then be taken up by native speakers (1988:43). This seems to be precisely what has happened in Hackney for the generation of speakers born in the late 1980s, although in the case of *who* we prefer to think of the process in terms of innovation rather than imperfect learning. As we have seen, there is no difference between the adolescents in Hackney and Havering in terms of the frequencies with which they use *who* and *that*, nor in the constraints that govern the use of these two variants (grammatical role and animacy of the referent). Rather than using *who* ‘incorrectly’, adolescents in Hackney have simply given it an additional function, in line with natural tendencies inherent in spontaneous communication.

5.6. Relevance of the feature-based model

The proposal we are making here, then, is that the sociolinguistic situation in Hackney provides bilingual speakers with the impetus to grammaticise the cognitively available link between animacy and topichood, partly because of their expectations about what resources are available in the grammatical systems they are acquiring. The high numbers of bilingual speakers in Hackney result in a greater tolerance of linguistic variation from Anglo and non-Anglo speakers alike, and a more diffuse set of linguistic norms than exists in Havering.

We propose that this sociolinguistic situation is the source of the new [*utopical*:+] morphosyntactic feature, which we hypothesised entered the grammars of (certain individuals in) the young Hackney speaker group. The grammatical system of human language provides for the morphosyntactic expression of discourse prominence, as detailed in the previous subsections. This feature is relevant to the grammar of many of the languages in Hackney, and is ‘co-opted’ by younger speakers of Hackney English into their own grammatical systems. For these speakers *who* has become an

⁷ We thank an anonymous reviewer for this suggestion.

independent particle (since *whom*, *whose* and *which* are no longer used in restrictive relative clauses) used to relativise only human subject antecedents. The well-attested links between animacy, subjecthood and topicality make *who* particularly appropriate for marking a particular type of discourse prominence, topicality.

We do want to emphasise here that the formal proposal sketched in section 5.1 is likely to be much over-simplified. Moreover, the process whereby speakers construct and discard the relevant feature bundles for relativisation in conditions like that of Hackney is presumably highly dynamic, with perhaps many more feature bundles for the relativisers than we have given here, all in a competition that is subject to sociolinguistic, processing and grammatical constraints. However, we think that the model proposed here goes some way to providing us with an insight into the interaction between grammatical and social pressures in the emergence of language change.

6. Conclusions

Of course, it is not possible to predict the course of an innovation that has been observed at an early stage. The topic marking function of *who* may be a temporary, unstable feature that occurs only in the speech of these particular adolescents in Hackney. Equally, though, we may have underestimated the extent of its use: there was a great deal of individual variation, with *who/that* variation appearing to be robust for some speakers, while other speakers used *who* rarely or not at all and still others used only *that*. Although this is typical of *who* usage elsewhere (Tottie, 1997; Herrmann, 2003), it raises the question of whether, if we had been able to record more speech, we would have heard more *who* tokens from those individuals for whom *who* frequencies were low in our data and, if so, whether these individuals would also use *who* to mark topicality. Nevertheless, whether or not this innovation becomes established as part of London English (or even beyond), there is no doubt that we have captured the beginning of a language change, since neither the older speakers nor the intermediate age group in Hackney use *who* in this way. We can therefore draw some conclusions that point in the direction of an answer to the actuation problem for the specific change that we have investigated here. It remains to be seen whether the conclusions that we draw can apply to other innovations in other languages and in other sociocultural settings.

Like researchers working on sound change, we find that rapid demographic change involving the immigration of non-native speakers is an important trigger for language change (see, for example, Herold, 1997). This accounts for the difference between adolescent use in Hackney and in Havering. There are some specific characteristics of the innovation we have analysed here, though, that we see as particularly relevant to the general question of what triggers a grammatical change. Although some grammatical innovations may be triggered by speakers' desires to stand out from other speakers (Haspelmath, 1999), our analysis shows that innovations may also occur if they can pass unnoticed. The syntactic and semantic properties of *who* and *that* remain essentially unchanged in adolescent speech in Hackney: like previous generations, Hackney adolescents use *who* as the subject of a relative clause when there is an animate antecedent, and *that* as an all-purpose relativiser. All that is new is that *who* has acquired an additional feature, to which we have given the name [*utopical*:+], recognising that the semantic interpretation of this feature may be fairly dynamic, depending on the speaker's conception of what constitutes the important information in their discourse. We have shown that such information-structuring features are grammatically active in the ambient languages in Hackney, and proposed that this is the source of the feature in the specification of one variant for *who*.

The fact that animacy is built into the grammar of English contributes to the selection of *who* with topical subject animate antecedents, as does the cross-linguistic typological relationship between animacy, subjecthood and topicality. Natural tendencies to mark topics and to aim towards semantic transparency by assigning distinct functions to different variants further contribute towards individual speaker innovations being taken up more generally, such that these individual innovations become a linguistic change.

It is also relevant that the development of *who* as a topic marker occurred within a relativiser system that is unstable in present-day English, with the *wh* system in decline. The innovation we have observed conforms to what Lass (1990:80) has termed exaptation, where remnants of old structures are "recobbled" into new ones. Perhaps exaptation is typical of contact situations or, at least, of the special type of contact situation that exists in present-day Hackney. Note, too, that in Hackney English *who* is now a 'camouflaged' form, in Spears' (1982) sense: it bears a surface resemblance to forms found in other varieties of English, but in Hackney speakers use the form differently, in that they tend to select it with a topicworthy antecedent. Schneider has suggested that camouflaged forms are typical of contact varieties of language (Schneider, 2007:111).

We would like to repeat what we see as an important methodological point: as so often in the analysis of grammatical variation, it is essential to look beyond the surface forms of different variants and consider their discourse function. It is perhaps especially important to do so when analysing language contact scenarios such as the one we have focused on here, where camouflaged forms may develop and where using conventional syntactic categories in an analysis may obscure the nature of the surface variation. In the case of *who* and *that*, it was only by examining the way that speakers use these forms in the construction of their discourse that we could observe a functional difference underlying a superficially identical distribution of the two forms in the two areas of London where we conducted our research.

A final conclusion relates to the importance of combining both sociolinguistic and formal approaches to understanding instances of the actuation of grammatical change. What the syntactic proposal adds to the sociolinguistic proposal is a mechanism for how the change is actuated: the sociolinguistic situation in Hackney involving young speakers of many different languages provides a grammatical feature [*utopical*:+] that can be used in speakers' analyses of the English they hear around them (a feature which is not available for the Havering speakers). The formal link between this feature and the range of phonological forms for relativisers (a link which involves grammatical homophony), together with the claim that features may be underspecified, immediately gives rise to a situation of what Adger (2006) terms 'combinatorial variability': the frequencies of overt phonological forms come to (partially) depend on the number of grammatical routes to the appropriate representation. In the case at hand, there are more routes to *who* when the antecedent NP is topical than when it is non-topical. These frequencies then create an imbalance in the production of *who* in topical contexts, reinforcing the featural specification connecting [*utopical*:+] and the phonological form *who*. The actuation of the change emerges from the interaction between the sociolinguistic situation, which provides 'extra' resources to the speakers that allow them to harness general communicative strategies for marking discourse prominence, and the formal mechanism embedded in the cognitive capacities of the speakers, which creates an imbalanced connection between feature specifications and phonological forms. Bringing together sociolinguistic and formal approaches allows us, we believe, a novel insight into the actuation problem.

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