

Polymedia repertoires of networked individuals

A day-in-the-life approach

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This article introduces the concept of the *polymedia repertoire* to explore how social meaning is indexed through the interplay of communicative resources at different levels of expression (from choice of media to individual signs) in digitally mediated interactions. The multi-layered polymedia repertoire highlights how people move fluidly between media platforms, semiotic modes and linguistic resources in the course of their everyday interactions, and enables us to locate digital communications within individuals' wider practices. The potential of our theoretical contribution is illustrated through analysis of mobile phone messaging between participants in a large multi-sited ethnography of the communicative practices of multilingual migrants working in linguistically diverse UK city neighbourhoods. Our analysis of mobile messaging exchanges in a *day-in-the-life* of these networked individuals reveals the importance of *device attention* in shaping interpersonal interactions, as well as the complex ways in which choices at different levels of a polymedia repertoire are structured by social relationships, communicative purpose and (dis)identification processes.

Keywords: blended linguistic ethnography, device attention, mobile messaging, polymedia, repertoire

1. Introduction

In this article, we put forward the concept of the *polymedia repertoire* to show how social meaning is indexed through the interplay of a range of communicative resources at different levels of expression (from choice of media to individual semiotic signs) in digitally mediated interactions. In doing so, we combine Madianou and Miller's (2012) concept of polymedia with cutting-edge ideas

around the communicative repertoire (e.g. Kusters et al. 2017). Approaching digital communication through the lens of the multi-layered polymedia repertoire highlights how people move fluidly between different digital media platforms, modes of communication and linguistic resources in the course of their everyday interactions, and draws attention to the way in which these are nested within each other, so that a change at one level of expression effects changes at other levels, with implications for communicative meaning.

The present article illustrates the potential of the polymedia repertoire with an analysis of the mobile phone messaging of networked individuals (Papacharissi 2010), particularly their use of various messaging apps including WhatsApp and Viber. The data is taken from a large multi-sited ethnography which explored the communicative practices of multilingual migrants living and working in linguistically diverse city neighbourhoods in the UK. The project adopted a blended linguistic ethnography which included both offline and online data, and which was organised not around an ethnographic site – either an online environment or a bounded physical space – but around individual people, following them across sites and social networks. In this article, we propose a new approach to the representation and analysis of data which we call a *day-in-the-life* because of its focus on the totality of exchanges – in this case, mediated through mobile messaging apps – in which one individual engages over a 24-hour period (allowing for the inclusion of conversations continuing immediately beyond this period). The *day-in-the-life* approach sheds light on the polymedia repertoire by foregrounding the multiple threads of conversation in which one individual simultaneously interacts with multiple conversational partners, and the way these threads interweave in their polymedia communicative practice throughout the day. Our analysis of a *day-in-the-life* of these networked individuals illuminates three aspects of the polymedia repertoire. Firstly, it shows how the daily rhythm of mobile-mediated interactions is shaped by what we call *device attention*, which occurs, in this case, when people turn from other activities to ‘check’ their mobile phone and potentially respond to multiple conversational threads. Secondly, it demonstrates how digital media choices – such as choice of device – intersect with and shape the potential meanings of linguistic and multimodal resources (Lexander and Androutsopoulos 2021). Thirdly, it explains the complex ways in which use of the polymedia repertoire is structured by social relationships, communicative purpose and (dis)identification processes.

2. Polymedia

Communication in the contemporary networked age takes place in what Madianou and Miller (2012: 171) describe as a *polymedia* environment – “an environment of communication opportunities” in which “users conceive of each medium in relation to an integrated structure of different media” (Madianou and Miller 2012: 174). Madianou and Miller use the term ‘media’ loosely to refer to an array of channels or modes of communication, platforms, apps and devices, arguing that this reflects their participants’ rejection of clear distinctions between different technologies and their understanding of any one medium in relation to others in the same environment. We use the term ‘media’ in the same way in this article. The metaphor of the media ‘environment’ itself is not new but draws on a wider theoretical trend towards recognising how users’ engagement practices cut across and integrate individual media, including conceptualisation of media as ecology (Ito et al. 2010). According to Madianou and Miller (2012), what distinguishes polymedia from these theories is a focus on user agency and affordances, and on the moral implications of media choice for social relationships.

As the range of channels/modes, platforms, apps, devices (and so on) available to an individual proliferates, each finds a niche in that user’s communicative repertoire depending on an interplay between its affordances and individual needs (Madianou 2015: 2) and, once barriers such as cost, access and media literacy skills recede, choice of media becomes communicatively meaningful; in Madianou’s (2014: 672) words, “users are held responsible for their choices”. Central to polymedia theory, then, is the understanding that media choice is ideological; it is predominantly shaped by people’s perceptions as to what constitutes the morally appropriate use of different media, rather than what is technologically possible (Boczkowski et al. 2018), and shaped by people’s perceptions as to the affordances of each of the media (Lee 2007). These media ideologies (Gershon 2010) are meshed with people’s concurrent beliefs about language and meaning-making (Androutsopoulos 2021; Busch 2018; Thurlow 2017), interactively co-constructed by communities in the light of their experience of the shifting mediascape (Fraiberg 2013), including the residual presence of older technologies available in their remediated form (Bolter and Grusin 2000) and shaped by powerful widely circulating discourses on technologies. The constellations of meanings that attach to a social media platform determine users’ perception of appropriate or possible behaviour on the platform, in relation to how they behave, or do not behave, on other platforms (Boczkowski et al. 2018). Media choice therefore conveys social or ideological meaning – as Madianou (2015: 2) puts it, “choice of platform or medium can become as meaningful as the actual content of a particular exchange” – which itself becomes constitutive of, and is

potentially transformative of, interpersonal relationships. The moral or social significance that can be inferred from a choice of media rests on people's awareness of the nature and limits of their own polymedia environment and that of their interlocutor's – the apps that are available to them, for example – an awareness which in turn rests on their national, cultural and socioeconomic backgrounds and shared communicative history. For example, the choice by Chinese-heritage participants in our study to communicate using WeChat (or *Weixin*) must be interpreted in the light of the dominance of that app in mainland China and the lack of availability of other apps (Harwitt 2017).

Of relevance to this article is Madianou's (2014) conceptualisation of the *smartphone* or mobile phone as an integrated environment of communicative opportunities – a polymedia environment – itself integrated into a wider media ecology. In comparison to computer-mediated communication (on which the theory of polymedia was originally based), the increasing availability of platforms and apps on the same (mobile) device can serve both to facilitate fluid switching between media (what we would call 'Environments', as explained in Note 1, below) and to further reduce the potential impact of external factors such as effort, cost or location – thus increasing the significance of media choice and intensifying its emotional implications – whereas the ease of communication via the mobile phone heightens the meaning-making potential of choosing *not* to communicate (Madianou 2014: 676). Our focus on the mobile phone as a polymedia environment was initially driven by our participants, who throughout the data collection period relied solely or predominantly on a personal mobile device rather than a computer or laptop, and who reported primarily using mobile messaging apps (available primarily through a mobile phone) rather than, for example, social media sites such as Facebook or Twitter (available also through other devices). We nonetheless do not lose sight of the wider media environment into which the mobile phone is embedded, nor of the potential significance of this choice of device.

3. Communicative repertoire

Our attempt to reconceptualise the polymedia environment in terms of *repertoire* takes us beyond a focus on the social significance of choosing one media rather than another, to explore how social meaning is negotiated during the course of interactions within and across different media; in so doing, we explore how media choice intersects with and mutually shapes other communicative choices, such as register, style and mode of communication, as well as enabling use of preconfigured signs made available through particular platforms (Lexander and

Androutsopoulos 2021), and how these in turn combine to construe particular social relationships. Whilst Madianou and Miller follow their participants in not recognising distinctions between media at what we consider different levels of expression – devices, apps, platforms, modes – we consider the extent to which users draw on nuanced distinctions between different elements and the complex ways in which they intersect: we recognise, for example, that a work email sent from a mobile phone (with the tagline “Sent from my iPhone”) may be received rather differently than is an email sent from a desktop computer. In this sense, we draw on and make parallels with recent sociolinguistic research which points to people’s sophisticated understanding of the indexicalities of enregistered linguistic features, even where their everyday language use blurs or defies these traditionally conceived sociolinguistic categories (e.g. Creese and Blackledge 2019).

Our argument rests on the assumption that individuals accrue communicative repertoires over the course of their lifetimes. These repertoires include, among other things, all the “bits” of different language varieties (Blommaert and Backus 2013: 19) picked up as individuals move through varied contexts and navigate interpersonal networks. This conceptualisation moves away from Gumperz’s (1982: 155) definition of repertoire as “the totality of distinct language varieties, dialects and styles employed in a community”. Individuals orient towards, and move between, multiple communities or centres of authority in the course of their social interactions, and it is this polycentricity (Blommaert 2010) that shapes their repertoire choices. Also important for our argument is the scholarly understanding that individual repertoires integrate a range of other semiotic resources alongside language, including “gesture, posture, how people walk, stand, and sit, the way they tilt their head, their gaze, the shrug of their shoulders, their smile or frown” (Blackledge and Creese 2018: 2), and the typographical and networked resources available over the internet (Androutsopoulos 2015), as well as such things as “knowledge of communicative routines, familiarity with types of food or drink... and mass media references” (Rymes 2014: 303). Individual repertoires are therefore best described not as linguistic, but as communicative (Rymes 2014) or semiotic (Kusters et al. 2017). Although repertoires can be seen to index aspects of a person’s life and identity (Blommaert and Backus 2013), their deployment in any communicative encounter is intersubjectively realised, shaped by features of the interaction order (Goffman 1982) and by artefacts and material processes in a socially constructed space (Canagarajah 2021; Pennycook 2018). What has been less well interrogated in relation to repertoire is the way in which individual signs – words, gestures, typographical features – are acquired alongside knowledge of socially recognised ways of doing or saying things which emerge in particular contexts as ‘communicative routines’, as Rymes (2010) puts it, social genres or practices. This reflects the distinction between linguistic and communicative

competence, where the latter includes understanding how to deploy linguistic signs in locally relevant ways (Hymes 1966; see Blommaert and Backus 2013). This distinction points to the internal structuring of a repertoire, and the fact that ‘lower level’ resources such as words and gestures are nested inside ‘higher level’ resources such as practice – a point to which we return in our discussion of the polymedia repertoire below.

4. The polymedia repertoire

Building on this understanding of repertoire, our first argument is that individuals’ repertoires also include a range of communication technologies, now both digital and analogue (Mavers 2007). Key to this argument is the observation that individuals’ repertoires encompass resources relevant to all the spaces and social contexts in which they interact, whether face-to-face or technologically mediated. In its encompassing of the configuration of semiotic and technological resources accessed by any one individual, the polymedia repertoire offers an extension to our understanding of semiotic repertoires, which is necessary in the current communicative landscape (Artamonova and Androutsopoulos 2019; Boczkowski et al. 2018; Lexander and Androutsopoulos 2021). Our argument is not simply that individuals use these technologies to communicate in particular ways – for example across large distances, asynchronously, for intimate chat, crowdsourcing and so on – but that their media choices intersect with other communicative resources to make meaning in complex and non-arbitrary ways, shaped and constrained by interlocutors’ media ideologies and features of the interaction order.

In conceptualising communication technologies as part of individuals’ wider communicative repertoires, we draw on Markham’s (2004) distinction between users’ experiences and perceptions of the internet as a *tool* for communication and a *place* in which to communicate. Our focus is on mobile technologies at various ‘levels’ of expression (devices, platforms, channels of communication, etc.) as tools for communication. This perspective focuses attention on the ways in which media are embedded into offline contexts and, like all cultural artefacts, are socially shaped through the (offline) practices, discourses and ideologies that determine their design and use (Hine 2000). From the perspective of polymedia, the relationships between devices and software applications within the wider sociocultural environment, and how users navigate them, become important in the construal of communicative meaning. Individuals in a contemporary polymedia environment have access to a range of communication technologies which include devices (e.g. computers, laptops, tablets, phones), platforms (e.g. Instagram, Twitter), and channels of communication (e.g. messaging or voice

calls through a mobile messaging service). The complex interplay between users' media ideologies and the perceived affordances of individual platforms shape how groups and communities use particular media. For example, for Trinidadians in the early 2000s, Blackberry Messenger became a tool for hooking up with strangers, whereas Skype was a more exclusive space for intimate chat (Miller and Sinanan 2014); similarly, in Buenos Aires around 2016, Snapchat was seen as intimate and immediate, Facebook and Instagram were places for styling the self, Twitter for public information sharing, and WhatsApp was a social necessity (Boczkowski et al. 2018). As mentioned earlier, in a polymedia environment, where each medium occupies a niche in a wider ecology or mediascape, the social significance of a platform itself communicates meaning (Madianou and Miller 2012), implying a *horizontal* or paradigmatic relationship between different resources. As paradigmatic resources, digital media primarily convey indexical or social meaning – or act as contextualisation cues (Gumperz 1982: 131) – rather than bearing propositional meaning. As we shall see, choice of media intersects with and shapes the ways in which communicative resources employed within it are interpreted.

As *places* for communicating, social media and other platforms can be seen as “cultural spaces in which meaningful human interactions occur... wherein one's discursive activities can contribute directly to the shape and nature of the place” (Markham 2004: 99; cf., e.g., Gee's 2004 affinity space). From this perspective, and this is our second argument, we can see that a digital device or social media platform is a resource into which other resources are embedded, meaning that a polymedia repertoire takes the form of a *polymedia nest*, with lower-level resources embedded into higher-level ones. Figure 1 illustrates this relationship between practices, devices, environments, modes and signs (what we call the P-DEMS model). Choices from among the lower-level resources are constrained and shaped at the higher level by a shared understanding of socially and historically situated communicative *practices*. These practices cover what people habitually do in the social and material world (Scollon 2001) and their knowledge of how these ‘communicative routines’ (Rymes 2010) are conventionally carried out via a process of enregisterment (Agha 2007). In this process, particular meanings are ascribed to levels of expression within a community, including the styles, genres and registers that are deemed appropriate for distinct practices in particular social and historical contexts. At the lower end, nested resources include linguistic and multimodal signs brought along by users – including elements associated with different registers, styles, figurative devices, stance markers and so on – alongside those made available through particular apps or platforms by site designers. The latter include: typeface, font, layout, background design and colour, each of which may be offered to users as a set of choices or which may be preconfigured; the

graphic and visual resources made available through the keypad, including punctuation and script (Androutsopoulos 2015); in-built functionalities such as the ability to design one's own profile and name groups; and sets of pre-configured signs such as emojis, stickers and gifs. Users do not only choose signs from within each set – selecting one emoji rather than another – but also move between the predefined sets at this same level of expression, designing a Bitmoji, for example, if an appropriate emoji cannot be found. However, as Djonov and van Leeuwen (2017, 2018) point out in their critical discourse analysis of 'semiotic software', unlike language, these in-built semiotic resources or artefacts do not necessarily evolve to fulfil users' changing needs, but are both designed and updated by software developers driven by commercial interests, who may take users' needs into account only to the extent that it proves commercially beneficial. Social media sites, for example, are regularly redesigned to facilitate the sharing practices of users in ways – such as the introduction of 'retweets' on Twitter and 'stories' on Instagram (Boczkowski et al. 2018) – that benefit the companies financially. Such software design decisions play an important role in extending or constraining users' ability to make meaning (Djonov and van Leeuwen 2017, 2018).

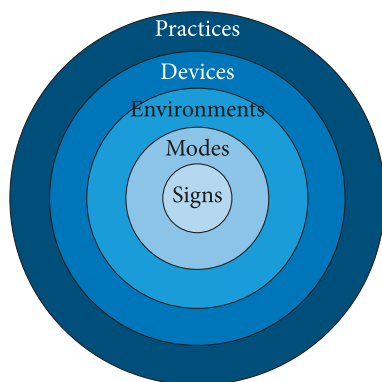


Figure 1. Polymedia nest (P-DEMS model)

Polymedia thus draws attention to the multi-layered nature of the semiotic repertoire. As semiotic resources, platforms such as Facebook or WhatsApp enable meaning-making through a complex dialectic relationship between the platform itself and meaning-making resources at different levels of the polymedia nest. On the one hand, platforms establish what Djonov and van Leeuwen (2018: 649) call a "built-in semiotic regime" by which certain embedded resources are made more visible and accessible than others, and their use and potential meaning is regulated through menus, commands and prompts. On the other hand, the ways in which these resources are selected and deployed by users

within a particular platform are driven also by wider semiotic and social practices, discourses and ideologies, and shaped by individuals' immediate and long-term communicative goals. The effects of these processes are twofold: the use of embedded resources not only shapes how a higher-level resource (such as a platform) is perceived, and determines its social significance in the polymedia environment, but the platform in turn has the potential to shape the communicative significance of resources embedded within it. This process of resemiotization – by which semiotic resources come to take on distinct meanings in new contexts (Iedema 2001; Leppänen et al. 2014) – is evident in studies exploring the enhanced potential for social meaning of certain graphic resources in digital contexts, including spelling (Tagg 2012), script choice (Spilioti 2019), punctuation (Busch 2018), hashtags (Lee 2018) and other typographic symbols (Lyons 2018), though there is less comparative research on how semiotic resources are shaped by their use on one platform rather than another. The fact that platforms (and other media) have the potential to embed other resources within them, alter or assign meaning to these resources, change or influence how they are used, as well as being transformed through the resources within them, implies a *vertical* relationship between nested resources. As the P-DEMS model in Figure 1 shows, there are also parallels with the relationship between signs and modes, with the former embedded into and realising the latter. Here, a change in signs potentially alters the social significance of a mode, and a change in mode can transform the immediate meaning of an individual sign. For example, the spelling of word-final /s/ as <z> in digital communication might signal a particular kind of non-standard 'speech-like' writing (the sign altering the mode), whilst the same spelling in a formal business communique might be seen as disrespectful or otherwise inappropriate (the mode altering perception of the sign) (Busch 2018).

As Table 1 illustrates, a polymedia repertoire encompasses a number of resources at different levels of expression; it is both multi-layered and nested. The diagram in Table 1 is not intended to provide a comprehensive model based on internal structure or function, but to pinpoint the potential meaning-making resources available to interlocutors in a digitally mediated interaction, shaped by our observations of our participants' polymedia repertoires.

The concept of the multi-layered polymedia repertoire unpacks the complexity of meaning-making processes, which involve individuals selecting from, and moving fluidly between, sets of resources at different levels of expression which are potentially mutually transformative. In particular, the polymedia repertoire recognises the intersections between communicative resources at the levels of signs and modes, and those which have traditionally been conceived of as

Table 1. The polymedia repertoire (P-DEMS model)

Polymedia repertoire levels		Definition	Examples
Practices		socially situated and habitual ways of doing things in the material social world, shaped by knowledge of styles, genres and registers	placing or organising deliveries to a shop; keeping in touch with intimate others
Devices		physical objects with which users directly interact	mobile phone, tablet, laptop
Environments	Interface	ways in which users access and interact with a platform	Facebook can be accessed through a web browser or a mobile phone app
	Platforms	sites which host and guest share content and allow for discussion, networking and feedback	social media sites such as Facebook and Instagram, and mobile messaging services WhatsApp, Viber, WeChat
	Channels	various communication modes often integrated into a platform	voice calls, private messages, group chats, wall posts, status updates
Modes		different ways in which a message can be represented	speech, writing, and visual communication (which can in turn be broken down into different modal resources)
Signs		elements of linguistic and modal systems which convey symbolic, indexical and iconic meaning	words, set phrases, emojis and other pre-configured signs

‘media’ – the devices and Environments¹ (interfaces, platforms and channels of communication) through which much contemporary interaction is mediated – and how these different levels of expression combine in communication to realise social practices. In our model, practices stand apart from the other levels (as indicated by the hyphen that separates P from DEMS), not only because of their all-encompassing nature but because it is only at the other levels that practices – and their associated styles, genres and registers – become visible and realised. As previously mentioned, the polymedia repertoire also draws attention to the meaning potential of particular combinations of ‘media’, traditionally conceived – for example the varying significance of a work email, depending on the device

1. We capitalise Environments throughout to distinguish between our use of the term within P-DEMS and Madianou and Miller’s (2012) reference to a polymedia environment.

from which it is sent, that is, from a mobile phone or computer. The polymedia repertoire builds on existing understandings of the communicative repertoire by unpacking and making visible the different levels of expression available to individuals in the contemporary media environment, thus enabling in-depth understanding of the complex ways in which these intersect in meaning-making processes.

How resources at different levels of the polymedia repertoire are taken up within the context of any communicative encounter will be shaped by the social constraints that limit choices and shape practices, including interlocutors' media ideologies, their power relations, social and economic inequalities, material artefacts and circulating discourses. In the rest of this article, we draw on data from a blended linguistic ethnography to explore how polymedia repertoires are realised in contexts of use.

5. Data, context and methodology

The data used in this article is drawn from a large ethnographic project called *Translation and Translanguaging: Investigating Linguistic and Cultural Transformations in Superdiverse Wards in Four UK Cities*, or TLANG. The project team worked with a number of key participants in four UK cities (Birmingham, Cardiff, Leeds, London) to explore how migrants to the UK draw on resources from across multilingual, multimodal communicative repertoires in order to work and communicate across ethnic, social and linguistic differences in superdiverse city spaces.

The key participants were observed and audio recorded at work over four months; they took audio recorders home with them to record domestic and social interactions. Digital data was collected in the form of screenshots of participants' mobile phones taken by the research fellow or by the participants themselves. The digital data was collected in a responsive fashion, depending in part on the research relationship in each site and what each participant was willing to share with us. Although we were open to collecting any form of digital data, in most cases the participants claimed to mainly use mobile messaging – WhatsApp, SMS and so on. For the purposes of exploring our model, we selected two participants, a Polish shop owner in London (Edyta) and the Hong Kong manager of a beauty salon in Birmingham (Joe), both of whom used multiple messaging apps on a daily basis. The data was anonymised where relevant (see Tagg et al. 2017 for discussion of the project ethics). In our analysis, we explore how Edyta and Joe negotiate different mobile messaging Environments as part of their wider polymedia repertoires.

Importantly, the project design allows for a *blended linguistic ethnography* which involves the incorporation of social media data into an otherwise offline ethnography. In this approach, social media data is collected as part of a wider offline ethnography. This departs from other blended ethnographies which tend to prioritise digital data in order to understand what is happening online (e.g. boyd 2008; Hine 2000). Whilst these ethnographies recognise the situated nature of online practices, in boyd's words, they risk positioning the offline as the "back-stage" to the online "front stage" (p. 53). In our approach, the ethnography itself takes place offline (through offline observation and fieldnotes) with consideration of what participants are doing online. Unlike other studies of social media and language use – such as Androutsopoulos's (2008) "discourse-centred online ethnography" – we therefore use linguistic analysis not to understand life as it occurs online, but rather how digital technologies are embedded into people's wider lives (cf. Lee's 2014 techno-biographies) and to explore individuals' digital interactions as part of their wider communication practices. There are parallels between our blended approach and that of the global anthropological project *Why we post*, which draws more closely on traditional ethnographic immersion in a local context to explore the "uses and consequences of social media", seeking to understand how social media fit into people's everyday lives (e.g. Miller 2016). For present purposes, one limitation of our approach is that we were not necessarily physically present when our participants engaged online and therefore do not always have data on concurrent offline activities.

What also distinguishes our methodology is the use of the *networked individual* – an individual positioned as a node at the intersection of (multiple) social networks (Papacharissi 2010) – as an approach to identifying and demarcating a field site which crosses multiple offline spaces and online platforms. While other linguistic ethnographies have taken a *space* (or spaces) as their starting point – for example urban places such as markets or restaurants (Pennycook and Otsuji 2015) or a platform like Facebook (Georgalou 2017) – our focus on the networked individual recognises platforms as ideological constructs (Varis 2016). It highlights the ways in which the mobile phone cuts across different spheres of life and blurs the boundaries between them (Papacharissi 2010) as well as the ways in which individuals move between different mobile platforms (Adami 2014). In focusing on the individual and moving out through their networks and encounters, we draw not only on Lee's (2014) 'techno-biographic' approach in using interviews to make sense of an individual's online practices, but also on offline observations and fieldnotes to provide a holistic understanding of each individual's social and communicative practices (Dovchin et al. 2018; Nordquist 2017).

Finally, we draw on an approach to the representation and analysis of data which foregrounds the way in which individuals move between different digital

conversations – and, relatedly, different media Environments – in the course of their everyday interactions. This *day-in-the-life* approach involved our taking all the digital interactions of an individual participant over the course of the data collection period, and laying out each message chronologically, rather than organising their interactions into separate conversations with different interlocutors. This was originally done in an Excel spreadsheet, with each message transcribed onto a separate row alongside columns of metadata including date, time, sender, receiver and platform. We can then extract messages sent during any one 24-hour period to give a snapshot of mobile-mediated interactions of each participant. These snapshots are often approximate, allowing for conversations which start or continue beyond the selected day. Through this approach, we enter the data from a point of view of a single digital communicator who is treated as a node; it is from this point of view that all communication is analysed. This results in acknowledging the often multiple threads of mobile messaging in which one individual simultaneously engages, and the way these threads interweave in an individual's polymedia communicative practice throughout the day. In practical terms, this representation displays distinct interactions rather like a multi-party online interaction, in which different threads of conversation intersect and disrupt each other (Bou-Franch et al. 2012), but departs from the kinds of polylogues explored by Bou-Franch et al. in presenting multiple dialogues connected only through the participation of one node user. For the purposes of this paper, we then selected a particular stretch of time (around one day) for further analysis. We cannot claim to have captured the full extent of each individual's polymedia repertoire through this approach, but the selection we have included illustrates our points and suggests a way forward for future analyses.

6. A day-in-the-life analysis of the polymedia repertoire

6.1 A day in Edyta's life

At the time of our study, Edyta ran a Polish shop in Newham, London with her husband. The couple come from south-east Poland and moved to the UK in 1997. Their now 10-year-old daughter Zuzanna was born in the UK.

Observations in the shop were carried out over four months from September to December 2014, and Edyta was interviewed on 19th December 2014 for 1 hr 19 mins in the shop. The interview was semi-structured and wide-ranging in topic, covering the couple's background, their business practices, customers, communicative practices and future plans, as well as their use of technology. The ethnographic data enables us to situate Edyta's digital communication within her

wider semiotic repertoire and social practices. Edyta is a Polish speaker, she learnt Russian at school (though she claimed to have since forgotten it) and did not learn English until arriving in the UK. Although she took English classes in London, she never prioritised language learning over her business, and did not see English as necessary for running a Polish shop. Indeed, we describe her shop as a Polish cultural hub (Zhu Hua et al. 2015): it stocked Polish products, served Polish customers (and other central and Eastern Europeans, as well as Russians), and Polish was the main language used. At the same time, our observations in the shop suggested that Edyta employed a range of semiotic resources in response to customers, including Polish, Russian and English, as well as various non-verbal resources such as gesture, within her diverse transaction-oriented communicative routines.

Although Edyta has a laptop at home, she relies primarily on her mobile phone not only in the shop and on the move but also, due to broadband connection problems, at home. Presenting Edyta’s digital media communications across one day (Figures 2, 3 and 4) enables us to explore the different digital Environments in her mobile-phone dominated polymedia repertoire, alongside the other semiotic resources on which she draws. Firstly, we can identify four mobile messaging platforms in her polymedia repertoire on that day: iMessage, Viber, Facebook Messenger and SMS, and trace how she moves between them in the course of her daily interactions. By drawing on the wider mobile messaging dataset and our ethnographic data, we can venture to explain her semiotic and media choices throughout the day. Figure 2 shows the first part of Edyta’s day-in-the-life.

	Time	Sender	Receiver	Message	Translation	Platform
1	Sun 21 Dec 15:50	Edyta	Sales rep		Have you got any more carp left? I could use some three crates?	iMessage
2		Sales rep	Edyta		Not any more	iMessage
3		Edyta	Sales rep		Ok	iMessage
4	Mon 22 Dec 11:22	Edyta	Zuzanna (E's daughter)		When I come, we'll buy it	Viber
5	11:22	Zuzanna	Edyta		and grandma asks for vinegar	Viber
6	11:34	Zuzanna	Edyta		joanna really wants this game and is annoying me	Viber

Figure 2. A day in Edyta’s life (1)

The ‘Sales rep’ (lines 1–3) works for one of the Polish suppliers which Edyta uses. Their practice of ordering and negotiating deliveries is shaped by various intersecting elements of Edyta’s polymedia repertoire. In the first instance, choice of her personal mobile phone (device) for such interactions came about when the landline in her shop stopped working, creating a shift in the immediate polymedia environment as one technology took over the functions of its predecessor. Edyta explained in interview that this just felt natural, but that it was also driven by her and her suppliers’ preference for SMS over voice calls. (In Figure 2, their use of iMessage indicates that both have iPhones which are registered with Apple, so that SMS messages are automatically sent as iMessages.) The interview between one of the researchers (A) and Edyta (E) was recorded as follows.

A: czemu nie [rozmawiacie przez] telefon

E: um ponieważ jest to wygodniejsze (.) i dla mnie i na przykład dla dostawców którzy w tym czasie mogą prowadzić samochód albo przyjmować zamówienie w innym sklepie jest dla niego niezręcznie odbierać um telefon więc umówiliśmy się że w ten sposób się będziemy um komunikować

A: *why don't you call*

E: *um because it's more convenient (.) both for me and for example for the suppliers who might be driving or taking an order in another shop at the time and it's awkward for him [sic] to answer um the phone so we've agreed that we would um communicate in this way* (Edyta, interview)

In contrast to her interactions with others, Edyta and the sales rep do not draw widely on non-verbal signs such as emojis but rely on the resources of written language (Figure 2). They converge around the use of linguistic signs that are transactional and concise, and yet index a highly informal style, disrupting what might be expected of typical business communication practices between Poles. For example, they use the familiar form of the second person singular verb (e.g. *masz* ‘have you got?’, line 1), rather than the polite form which comprises the personal pronoun *Pan* + 3rd person singular verb (*ma Pan/Pani*) and which would be expected in communication between people with a client/supplier relationship in Polish. Typically in such professional relationships, the use of *Pan/Pani* + 3rd person singular verb would be the unmarked choice. Edyta’s familiar way of addressing suppliers and clients in second person singular verbs in Polish is likely shaped in part by the English-language context where the distinction between polite and familiar pronoun forms does not exist, and also by Edyta’s ongoing relationships with her regular suppliers: face-to-face interactions between the shop owners and their suppliers – when we observed the latter visiting the shop – were similarly informal and relaxed. Edyta’s choice of *Z trzy skrzynki by mi sie przydalo* (line 1,

Figure 2) is also marked as casual and thus unusual for transactional practices between Poles: *by mi sie przydalo* translates as something like ‘I could do with’ or ‘I could use’, and the description of quantity is imprecise (*Z trzy skrzynki* ‘some three crates [of carp]’). It suggests that Edyta is testing the ground for a potential order rather than placing it. Carp is typically eaten on Christmas Eve across Central and Eastern Europe. We argue that she may be drawing on vague language to protect her face in case there is no carp, as she was likely embarrassed about having under-ordered in the first place in the run-up to Christmas – hence her quick acceptance in line 3 that there was none (*Ok*). The exchange in lines 1–3 also illustrates Edyta’s typically concise individual style – which we noted across the wider digital dataset – evident in the lack of conversational openings or extended closings and in the brevity of her messages. Her polymedia repertoire choices in Figure 2 and elsewhere in her business communication practices are thus structured by wider interpersonal relationships, immediate communicative purposes and performances of personal identity.

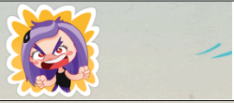
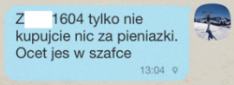
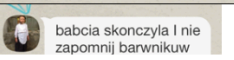
	Time	Sender	Receiver	Message	Translation	Platform
7	11:38	Zuzanna	Edyta		[visual]	Viber
8	13:04	Edyta	Zuzanna		Zuzanna1604 just don't buy anything for money. Vinegar is in the cupboard	Viber
9		Zuzanna	Edyta		grandma finished it and don't forget the food colouring	Viber
10	13:32	Natalia (customer)	Edyta	Wiesz moze kiedy on ja dostarczy?	Do you happen to know when he will deliver it?	Facebook Messenger
11	13:48	Edyta	Natalia	Chyba po swietach	Probably after Christmas	Facebook Messenger
12		Natalia	Edyta	Ok, bede niedlugo.	Ok, I'll be there soon.	Facebook Messenger
13	14:16	Edyta	Sales rep	JuZ zadnych uszek nie znajdziesz?	Won't you be able to find any more uszka?	iMessage

Figure 3. A day in Edyta’s life (2)

Edyta’s daily mobile interactions then shift towards online parenting practices through the platform Viber with Zuzanna, her 10-year-old daughter (Figure 2). Here, Edyta’s concise style is again in evidence: *Jak przyjdę to kupimy* (‘When I arrive, we’ll buy it’). Zuzanna’s turns are more emotionally charged and personal – she mentions that her friend is ‘annoying’ her (*mnie denerwuje*) and then, in line 7 (Figure 3), posts a sticker of an angry shouting girl which embodies and thus emphasises her frustration. In doing so, she exploits the pre-configured

visual signs available through Viber. Edyta tends to use the free internet-enabled messaging service Viber for personal communication with her daughter and her Poland-based friends not only because of their easy access to mobile data but also because of their perception of Viber's visual and playful nature, and the fact that it makes multimodal communication available through pre-configured signs known as virtual 'stickers' (sets of small images; see Lee 2014). The majority of messages sent though Viber in our dataset include stickers, and the fact that they occur mainly in interactions with Zuzanna, friends and certain customers suggests that, as indexical signs, the stickers index a close, friendly and informal relationship (see line 7, Figure 3). Thus the communicative significance of Edyta's directives to her daughter (*Jak przyjdę to kupimy*, 'When I get there, we'll buy it' in Figure 2 and *tylko nie kupujcie nic za pieniazki*, 'just don't buy anything for money' in Figure 3) must be understood as shaped not only by Edyta's personal style and her relationship with her daughter but also by their habitual use of the platform and its associations with informality and intimacy.

14	14:33	Customer (no. not saved)	Edyta	Hello, could you please tell me what time do you close today? I ordered a carp that I need to collect..Thank you	Hello, could you please tell me what time do you close today? I ordered a carp that I need to collect.. Thank you	SMS
15		Edyta	Customer	Close 8	Close 8	SMS
16	20:03	Krzysztof (E's brother)	Edyta	Czesc ciotka po te rzeczy przyjedziemy my do was okolo 9	Hi auntie we'll come to yours to pick the stuff up around 9	SMS
17		Edyta	Krzysztof	Ja bede w domy dopiero okolo 10 🤔	I won't be home until around 10[visual]	SMS
18		Krzysztof	Edyta	Ok	Ok	SMS
19	21:26	Natalia	Edyta	I jak, wszystko ok z tym wozkiem?	How are things, all ok with the trolley?	Facebook Messenger
20	00:01 (Tues 23 Dec)	Edyta	Natalia	Zabrał ale krecil nosem hi hi	He took it but he was wrinkling his nose ha ha	Facebook Messenger

Figure 4. A day in Edyta's life (3)

Edyta interacts with two customers in Figures 3 and 4: Natalia by Facebook Messenger and another customer by SMS whose name was not stored in Edyta's phone (Customer). According to Edyta, her customers' practice of contacting her to ask about stock and to make pre-orders was initiated by the customers, who would find her on Facebook or contact her by SMS. The shop itself had a limited online presence, and it appeared from our observations that customers felt a personal connection with Edyta – who showed an interest in their lives and

often went out of her way to meet their needs – rather than with the business. Edyta may not have known exactly who the nameless Customer was (there was no other communication with this person in our dataset), but had given them her number in the run-up to Christmas when several customers wanted to check on the availability of carp: the fact that they were buying carp at Christmas suggests that the customer was from a Central or Eastern European country. The patterning of signs chosen by the two customers indexes a somewhat formal and polite register which reflects both the customer-shopkeeper relationship and their communicative purpose of requesting information (*Wiesz moze kiedy on ja dostarczy?* ‘Do you happen to know when he will deliver it?’, Figure 3, line 10, and *Hello, could you please tell me what time do you close today?*, Figure 4, line 14). Although Edyta is closer to some customers than others, as reflected in the linguistic signs used in her messages with them, her exchanges generally revolve principally around transactional matters, even if some appear more intimate (*I jak, wszystko ok z tym wozkiem?* in line 19, ‘How are things, all ok with the trolley?’ – in reference to Edyta’s attempts to get a delivery person to take back a trolley that had accidentally been left behind during a previous delivery). The habitual use of more formally polite linguistic resources in business-related communication via SMS and Facebook Messenger across the dataset suggests that these platforms inhabited a particular niche in Edyta’s polymedia repertoire. The wider dataset also shows that Edyta uses SMS with her husband but that their conversations revolve around transactional and organisational matters of ‘micro-coordination’ (Ling and Yttri 2002), which further points to a connection between platform choice and communicative purpose.

Importantly, however, interlocutors’ choice of linguistic and multimodal signs, registers and styles can transform or reconfigure the kind of space created within a particular platform. For example, in line 15 (Figure 4), Edyta responds to the English-speaking customer’s polite SMS enquiry about the shop’s closing time in her matter-of-fact minimal style (*Close 8*), in a way which does not fully respond to the register set up in the initiating message. In another SMS exchange with her brother Krzysztof (lines 16–18), she adopts more interpersonal resources, namely the emoji, which never occurs in her messages to either suppliers or customers (even when the latter use emojis with her). Also relevant in creating these different communicative spaces are the contrasting styles adopted by the customer and her brother, respectively: the polite register indexed by the customer’s *Hello, could you please...* (line 14) in contrast to the intimate register performed by her brother in line 16: *Czesc ciotka* (‘Hi auntie’) (where ‘auntie’ can be interpreted as a family nickname because Edyta was an aunt to her brother’s children, but is also used as a familiar form of address between people who are not related). The

choice of different languages (Polish or English) across the exchanges also indexes differing degrees of intimacy and shared cultural backgrounds.

This analysis thus points to a complex interplay between social and business practices, polymedia, communicative style, linguistic choice, social relationships and communicative purpose. Overall, we can see how shifts in the wider polymedia environment nudged Edyta towards using a mobile device across personal and business interactions, and that particular platforms and channels are then selected in order to fulfil a particular function or to talk to a particular person. The linguistic and multimodal signs nested in these media choices contribute to the discursive construction of different platforms as a certain kind of communicative space, which in turn shapes how they are used and perceived. This is particularly evident in the distinction that emerges between Viber as a personal, informal communicative space, and other mobile messaging platforms which are used for more transactional purposes. The interlocutors' perception of Viber is shaped in part by the resources which it makes available to users, chiefly stickers, and is then reflected in their intimate and playful language choices.

Importantly, however, these intersecting polymedia repertoire choices are ultimately shaped by consideration of the contextual factors that shape individuals' practices, namely their awareness of distinct social relationships and their own and others' communicative goals and identity positionings. Edyta's deployment of the different platforms, channels, modes and signs in her repertoire can be seen to some extent as an attempt to manage the perceived distinction between her personal and professional spheres, a distinction she was well aware was threatened by her use of her personal mobile phone for business purposes: she told us in interview, for example, that she was getting tired of customers being able to contact her at any time. The data also reveals the more nuanced ways in which she works to position herself and others through digitally mediated interactions and how this is reflected and reaffirmed in her communicative and media choices. Her preference for mobile messaging, rather than voice calls, the apparent emergent distinction between Viber and other less intimate platforms, and her typically terse style all work to maintain boundaries and protect her time.

6.2 A day in Joe's life

Joe arrived in the UK from Hong Kong aged 14 with his younger brother to attend boarding school, took a degree at the University of Southampton and then worked in Manchester, before going into business as co-owner of a beauty and hair salon in Birmingham, where he lives with his partner (Blackledge et al. 2017). Our observations were carried out at the salon and in his volleyball coaching sessions over four months from September 2015 to January 2016. He was interviewed

multiple times, including one semi-structured 37-minute interview in July 2017, focusing on his use of mobile messaging. Outside work, he has a strong social network of close non-Chinese-speaking friends who he sees regularly; he claimed in interview not to have Chinese contacts in Birmingham. In terms of his linguistic resources, although Joe can speak Cantonese and members of his family wrote in their WhatsApp group in Cantonese, Joe responded in English and there is no evidence across the dataset to suggest that he ever wrote in a Chinese script; we noted only one instance in which he wrote in Romanised Chinese (in a brief response to an English-speaking friend who asked for a Chinese lesson).

The devices in Joe's polymedia repertoire included multiple laptops in the salon which he used for work purposes, alongside his mobile phone which spanned work and personal contexts. The snapshots of Joe's mobile messaging communications in Figures 5 and 6 represent two key platforms in his polymedia repertoire as they relate to his mobile phone use: WhatsApp and SMS. In interview, Joe suggested WhatsApp and SMS inhabited distinct niches in his polymedia repertoire, returning repeatedly to his perception that SMS was for one-to-one exchanges and was associated with work, while WhatsApp was best suited to group chats and thus group bonding. He claimed to have set up WhatsApp groups for his volleyball teams in a deliberate attempt to build on team camaraderie, and saw WhatsApp as enabling certain practices – group discussion and sharing – which encouraged the teams to bond in a way not possible with email (which he had previously used with the team) or SMS.

As with Edyta's interactions, we draw on the full online dataset and wider ethnographic data to explore how Joe draws on his polymedia repertoire in communication, and how elements at different levels of expression combine to create meaning. Four conversations are shown in Figure 5:

- an SMS conversation in which Joe arranges for his friend Laura to have a haircut;
- a group WhatsApp chat (*More from Less*), in which friends discuss Laura's new haircut;
- a WhatsApp one-to-one chat in which Irene organises for a friend to show Joe around Lisbon; and
- an SMS conversation between Joe and Sally in which she asks him whether he is ready for his trip to Lisbon.

The extract includes one-to-one interactions with individuals who are also part of the audience in Joe's group chats, and therefore highlights not only the nuances of Joe's audience design strategies (Bell 1984) but also the extent to which these are facilitated and shaped by the polymedia repertoire choices he makes at a number of levels within the polymedia nest.


	Time	Sender	Receiver	Message	Platform
1	13:26	Joe	More from Less (Group)	http://l.livingsocial.com/track/g_5VFIK9E7BK15R4I9GKOSJG526Q281E0VA7NBOLPCQAOTS1CAIG===/cities/63-birmingham-uk/deals/1536060-three-course-meal-for-two?afsrc=1&city_name=Birmingham%2C+UK&ref=XD-964b3052-52fc-468e-b16d-1e20bd666fa1&utm_medium=email&utm_source=blast&utm_campaign=digest_citywideuk&cvsrc=em_all_blast-gb_digest_citywideuk 13:26 ✓	WhatsApp
2	13:26	Joe	More from Less (Group)	This one is very nice 13:26 ✓	WhatsApp
3	15:22	Joe	Laura	U wanna get ur hair done tonight?	SMS
4		Laura	Joe	Ooo, Yes please. X	SMS
5		Joe	Laura	What time r u free from?	SMS
6		Laura	Joe	I could get to u about 5.15. X	SMS
7		Joe	Laura	Booked u in at 6. You have enough credit for a cut and <u>rekden</u> treatment. Which I have booked u in for	SMS
8		Laura	Joe	Thank u. Ur a babe. X	SMS
9	19:05	Joe	Sally	Remember to do wages last week of November	SMS
10	19:23	Laura	More from Less (Group)	 [photo of Laura's new hairstyle]	WhatsApp
11	19:23	Laura	More from Less	I love it. Thanks Joe Xxx	WhatsApp
12	19:31	Joe	More from Less	How was Emily? Did u like her cut?	WhatsApp
13	19:37	Laura	More from Less	She was lovely. And my hair is Mint x	WhatsApp
14	19:59	Irene	Joe	Right. I talked to my older sister if she could be your guide, but she can't. However, she asked a friend of hers who doesn't mind guiding you through Lisbon. What do you think?? Would you like that or do you rather explore the city on your own?	WhatsApp
15	20:11	Joe	Irene	Tnx for the offer. That would be amazing. How do we meet him/her?	WhatsApp
16	20:18	Irene	Joe	Great! Perhaps she could meet you where your boat is stopping in Lisbon. Do you know where it is stopping? Is it Santa Apolonia, Alcantara or Praca do Comercio?	WhatsApp
17	20:34	Joe	Irene	I actually don't know where. Maybe best leave it	WhatsApp
18	20:34	Sally	Joe	👍 I'm gonna organise it tomorrow, you all packed?	SMS
19	20:35	Sally	More from Less	Yay! Looks gorgeous 😍	WhatsApp
20	20:35	Irene	Joe	I don't think so... what's the name of your cruise?	WhatsApp
21	20:35	Joe	Irene	Ventura is the boat name, it's a p and o cruise	WhatsApp
22	20:36	Joe	Sally	No	SMS
23		Joe	Sally	Still haven't got my case out yet	SMS
24		Sally	Joe	😭😭😭	SMS
25		Joe	Sally	Stop calling me that	SMS
26		Joe	Sally	I think I have cancelled all hello fresh order but if any comes u will have to take it home	SMS

Figure 5. A day in Joe's life

In our analysis of this day-in-the-life, we focus on the observation that the same linguistic sign – in this case, an emoji – comes to mean somewhat differently depending on the Environment in which it is embedded. This depends in turn on the significance that WhatsApp group chats and SMS have in a networked individual's polymedia repertoire. On the one hand, Joe's and his interlocutors' decision to post to a WhatsApp group frames their posts as an act of (playful, intimate) sharing to which replies are invited but not necessarily required. For example, Joe shares a link to a discount site with the group *More from Less*

(line 1) which receives no response at all; while Laura shares a photo (line 10) which receives replies from two members of the group. Sally's response to Laura's photo (*Yay! Looks gorgeous [emoji with heart eyes]*, in line 19) is typical of many responses in Joe's WhatsApp groups, and might be described as 'ritual appreciation' – "positive assessments of the post and/or poster, expressed in highly conventionalized language coupled with emoji" (Georgakopoulou 2017: 182). Ritual appreciation is interpersonally oriented and serves to acknowledge acts of sharing and to bolster friendships rather than fulfilling informational functions. It also signals an asymmetrical interaction order in which one person 'shares' and the others voice their appreciation – where the act of sharing makes relevant the showing of ritual appreciation by other members of the group, albeit not always adjacently (König 2019). Our data shows that sharing followed by displays of ritual appreciation is a common practice among Joe and his interlocutors in the Environment of a WhatsApp group chat (Tagg and Hu 2017) and that immediate responses are not the norm (note that Sally responds in line 19 over an hour after the initial posting of the photo in line 10). Importantly, there is no obligation for Sally in particular to respond (others in the group do not) and no obligation for the original poster to respond to Sally; responsibility for providing anticipated contributions is 'diluted' among the group. These sharing practices are facilitated by the WhatsApp platform and its group chat functionality (i.e. the Environment), as well as the immediate interaction order – that is, the configuration of the WhatsApp group, comprising a small group of close friends – and their shared interactional histories.

On the other hand, for Joe and his interlocutors, choosing to post within a dyadic exchange can index a different kind of communicative space. The one-to-one participation format sets up the expectation of a reply that is not always required in the group chats, and this has an impact on how the linguistic and visual signs nested within each Environment are interpreted. In Figure 5, initiating contributions such as *U wanna get ur hair done tonight?* (line 3), *Remember to do wages last week of November* (line 9), *Right. I talked to my older sister if she could be your guide* (line 14) make relevant subsequent contributions from specific addressed individuals that are interactionally necessary. Importantly, within the Environment of a one-to-one exchange, emojis are not primarily ritual – in the sense of a performative and conventional display (of appreciation) – but serve a wider range of conversational functions. In Figure 5, for example, Sally's use of a 'thumbs up' emoji in the SMS exchange (line 18) substitutes for a verbal affirmative such as *okay* or *right* in reassuring Joe that she has November's wages under control, whilst closing down that thematic sequence before opening another (she goes on in the same message to ask *are you packed?*). Later, in line 24, Sally uses sobbing emojis to acknowledge the humour in Joe's admission that he has not yet

started packing for his trip, a contribution to which Joe responds with *Stop calling me that* (an in-joke between the pair), before picking up on the work-oriented thread of their conversation with a second contribution, *I think I have cancelled all hello fresh order but if any comes u will have to take it home*. The message-chunking here underlines the fact that Joe feels the need to respond to the emoji before continuing the other thread in their exchange. In this case, the emoji both completes a paired action and makes relevant a subsequent contribution. The use of emojis as contributions to an ongoing conversation – both fulfilling the expectation of a reply and setting up further expectations – reflects and bolsters close relationships and was evident across the wider dataset (Tagg and Hu 2017).

We might, then, see the intersecting choices regarding Environments – WhatsApp or SMS, group chat or one-to-one exchange – as indexing different sets of social relations and practices, which in turn come to frame the ensuing exchanges. Within this wider framing, the significance of the embedded resources (e.g. the use of emojis in response to a verbal message) might be interpreted differently in each media context. The meaning of an embedded resource at any one time thus emerges from a complex interplay of contextual factors shaped significantly by the platform and channel, as well as by the relationships between interlocutors, their interpersonal purposes and social identity performances. The ways in which embedded resources are habitually used and perceived across different platforms likely contribute to shaping users' perceptions of what each platform is for, as we saw with Edyta. In this way, choice of Environment (group WhatsApp chat or SMS exchange) comes to take on a particular social meaning and niche in individuals' polymedia repertoires.

Finally, the interweaving threads point to the mobile phone as a resource in the wider communicative environment which shapes users' engagement, and highlight the role of the mobile as simultaneously a tactile object in the real world and a portal to multiple mobile conversations (Cohen 2015; Richardson and Hjorth 2017). In enabling constant availability – meaning that people can potentially be in contact at any time – mobile phones place considerable demands on users to allocate and negotiate their finite attention resources (Su 2016). Our data suggests that one way in which this is achieved is through what we call acts of *device attention* – instances when participants move from other activities to check their mobile phones and respond, often to multiple messages. For example, in a number of cases in Figure 5 we can see Joe and his friends respond to two threads at the same time – at 20:34 (line 18), Sally messages Joe and then immediately the *More from Less* group (lines 18–19); at 20:36 Joe responds to Irene and then immediately to Sally (lines 20–23); later at 21:01 (not included in the figure), he posts to the WhatsApp group and then to Irene. Driving this may be an awareness that being online and posting a message signals one's potential availability

(Su 2016), thus increasing the expectation of social presence in all channels – if Sally can reply to Joe, then she can also reply to the group of which both are a member. Although the nature of our data does not allow us to explore the immediate offline contexts in which device attention occurs, our observations point to the need for research which considers how the material and embodied experience of mobile phone use intertwines with and shapes mobile interactions (Richardson and Hjorth 2017).

Our focus on the communicative significance of device attention highlights the extent to which the rhythm and timing of each conversation is shaped by how and why interlocutors attend to their phones. Conversational rhythm is an important meaning-making resource, in technology-mediated as in spoken interactions. Jones (2013), for example, documents the use of timing as an interpersonal meaning-making resource in computer-mediated chat, signalling interlocutors' involvement and interest in an exchange, and in turn indexing the status of their perceived relationship. As this suggests, response-times are shaped not only by technological accessibility such as the availability of one's device or whether one is online, but also by social expectations and interpersonal considerations which govern how quickly someone might respond to particular people and messages (as well as format, with one-to-one exchanges appearing to demand replies not always expected in group chats, including in the case of emoji discussed above). To the extent that technological accessibility indexes social availability, immediate contact is likely to be interpreted as indexing a greater intimacy (Su 2016: 238). In interview, Joe spoke about prioritising digital interactions depending on the intimacy and intensity of his relationships with individual interlocutors: the looser the ties, the longer he was happy to leave the interlocutor waiting for his response. The nature of Joe's relationships with different interlocutors is evident from the digital data (and confirmed by our observations): see, for example, the stylistic differences between Joe's messages to Sally and Irene; he was not as close to Irene (a fellow volleyball coach) as he was to Sally, and his messages to Irene draw on more standard formulaic English (e.g. *Tnx for the offer. That would be amazing* in line 15). Joe was also aware that his attention to his mobile phone was structured by his offline activities and interactions in ways that reflected the status of mobile messaging exchanges within his wider repertoire – for example, he told us that if he was at work serving customers or at dinner with friends, he would prioritise his face-to-face interlocutors and not attend to his phone. The concept of device attention thus points to the way in which mobile messaging threads intertwine with, and are structured by, the activities and rhythms of an individual's everyday life, as well as to the nature of their relationship with different interlocutors and their communicative priorities; the timing of any one mediated exchange in a polymedia environment may be determined by how an individual's attention is

divided between the range of interactions and activities in which they simultaneously engage.

7. Discussion and conclusion

The present article introduces the concept of the *polymedia repertoire* in order to reconceptualise digital media as resources on which interlocutors can draw in contemporary social contexts. By visualising mobile messaging interactions as interweaving conversations rather than isolated threads, we highlight resources at various levels of expression within individuals' wider repertoires in a polymedia environment that stretches on- and offline. By applying the concept of the polymedia repertoire to two networked individuals' mobile messaging interactions, we show how choice of mobile messaging (rather than voice calls, for example), and of one platform rather than another (SMS rather than Viber, or WhatsApp rather than SMS) can take on social meaning in part through the complex interplay between media Environments and the linguistic and visual signs each of them affords, and which are shaped by and also determine the kinds of social practices that are carried out and with which interlocutors. As this suggests, resources in a polymedia repertoire must be seen as nested (in what we call a polymedia nest, as illustrated through our P-DEMS model) and as mutually transformative. The social meaning of resources at a lower level can be shaped by the Environment in which they are employed – for example, the use of emojis may be interpreted as ritual appreciation in Joe's group chats but as conversational turns in one-to-one SMS exchanges; while the potential social significance of an Environment is shaped by the resources it enables – so that Viber, for example, becomes an intimate communicative space in part because of the availability of stickers and how they are exploited in interaction.

Our application of the polymedia repertoire points to the importance of the interaction order in determining which resources are used in any one context and their likely social effects. Choice of resources – including platforms – is determined in large part by interlocutors' perception of, and attempts to index, a particular social (or business) relationship. In moving between different platforms and channels, both Edyta and Joe position themselves in different ways to different interlocutors. For example, we saw how both Edyta and Joe use the different platforms and channels in their polymedia repertoire to manage perceived distinctions between their personal and professional spheres – Edyta increasingly to maintain boundaries and protect her time, Joe as his way of demarcating more functional or transactional practices (dominated by business-related exchanges) from more casual social spaces. The temporal overlap between different conver-

sations, as revealed by our *day-in-the-life* approach, highlights the fact that shifts at each level of expression of the polymedia repertoire are not occasioned by the sender per se, but are inter-subjectively determined, as the ‘node’ in the network shifts into and out of particular ways of interacting. Crucially, our analysis also showed how multiple digital conversations can be shaped not only by social demands and conventions but by the wider rhythms of an individual’s day, as individuals check their phones in instances of *device attention*.

The notion of the *polymedia repertoire* broadens and contextualises our understanding of both ‘polymedia’ and ‘repertoire’ in the contemporary rich digital mediascape. By reconceptualising media – devices and Environments (interfaces, platforms, channels) – as communicative resources, we can explain how a polymedia environment offers opportunities for meaning-making and how and why these emerge and are taken up and negotiated by social actors in the course of everyday interactions. We broaden our understanding of repertoire not only to encompass a range of media and modal affordances alongside linguistic resources, but also to highlight how repertoires should not solely be analysed linearly, as people move from one set of resources to another through time, but also three-dimensionally, with lower-level resources (such as individual signs) embedded into higher-level ones (such as communicative and social practices or media choice) to create a polymedia resource which makes meaning through the complex combination of its constituent parts. It is only through analysis of the interplay of a range of polymedia resources at different levels that we are able to understand the way in which meaning is indexed and conveyed in contemporary networked society.

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