

Making Markets Material: Enactments, Resistances, and Erasures of Materiality in the Graduate Labour Market

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journals.sagepub.com/home/wes**Olga Loza** 

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Abstract

Scholarship on the graduate labour market, preoccupied by structure, agency, and power, has largely focused on the market's discursive composition. It has not yet paid significant attention to the concrete, material apparatus of the market and how this shapes market outcomes. In contrast, we approach the construction of the graduate labour market from a new materialist perspective and with reference to the growing literature of 'market studies'. We consider the empirical case of a graduate recruitment hackathon to show how the hackathon's material features were implicated in enacting a specific occurrence of the graduate labour market. The agendas of the hackathon's designers and their visions of the graduate labour market were enacted in the hackathon's material arrangements, but this enactment was not always reliable: in some instances materiality *resisted* and *erased* corporate agendas. Our article contributes to the sociology of work by highlighting the dynamic relationship between materiality and power (re)production in the graduate labour market.

Keywords

graduate labour market, hackathon, market studies, new materialism, recruitment

Introduction

The UK's graduate labour market¹ is an object of scrutiny and concern for both policy makers and researchers. Existing studies foreground the promise of prosperity and equality vested in the government's agenda to expand higher education (Brown et al., 2008;

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Department for Education and Skills [DfES], 2003), the economic outcomes of implementing this agenda (Abel et al., 2016; CIPD, 2015; Green and Zhu, 2010), and the structural inequities that riddle it (Ashley and Empson, 2013, 2017; Burke et al., 2019; Ingram and Allen, 2019; Morrison, 2019; Rivera, 2016). The overarching tendency of existing research is to explain the phenomena at hand by uncovering structures hidden *beneath* or *behind* them and to treat the graduate labour market as an abstract entity that pre-exists the interactions between graduates and employers and—especially—the concrete, material procedures and technologies that mediate those interactions. Yet these material features of markets are too important to be set aside. A flourishing literature of ‘market studies’ (Roscoe and Loza, 2019) has encouraged scholars to pay attention to the situatedness of actually existing markets, and to recognise that the ‘material orderings’ of the market are ‘consequential’ (MacKenzie, 2018: 503), meaning that the specific configurations of material market devices can shape market outcomes, often in unexpected ways. This dynamic suggests that accounts focusing largely on discourses as mediators between structures and action may be overdetermined, miss vital subtleties of how markets actually come into being and overlook diverse agencies involved in markets.

A focus on the material orderings of markets in specific institutional settings contributes a novel perspective to existing literature of the graduate labour market that relies on sociological categories like class, gender and ethnicity to explain labour market outcomes (for example Wilton, 2011). It promises to enrich the Foucauldian concepts of power and discipline (for an incisive account of this position see Ashley, 2022) that have begun to explain how labour market outcomes, widely understood as unfair, are achieved. Like Ashley (2022), we study a graduate recruitment scheme, this one run by the technology arm of a global financial corporation. In particular, we consider one specific tool of graduate assessment, a recruitment hackathon, and show how the hackathon’s material features were implicated in enacting a specific occurrence of the graduate labour market. We follow the practice of new materialist thinking (Barad, 2007) to examine how the material features of the hackathon reproduce—with varying degrees of efficacy—power relations in the graduate labour market. New materialist ontologies emphasise the agential capacities of matter and theorise materiality as lively and agency as decentred, emergent and thoroughly material (Barad, 2007; Bennett, 2010). Similarly, market studies recognise that the ‘material orderings’ of the market, or how the material (or physical) structures of the market are ordered, are ‘consequential’, in the sense that they have effects on how market interactions unfold (MacKenzie, 2018: 503). Drawing on this scholarship, we ask how ‘relations of power are rooted in, and take root in’ the material conditions (Hughes et al., 2017: 119) of the graduate labour market. In doing so, we build on and extend existing understanding of the graduate labour market by considering the consequences of its concrete material ordering. We argue that a scholarly understanding of the graduate labour market can be strengthened through attention to the mundane materialities of specific markets. More specifically, we argue that the agendas of the hackathon’s designers and their visions of the graduate labour market were enacted in the hackathon’s material arrangements, but this enactment was not always reliable: in some instances, materiality *resisted* corporate agendas, obstructing, altering and transforming them. Thus, our article contributes to the sociology of work by highlighting the dynamic

relationship between materiality and power (re)production in the graduate labour market.

The structure of the article is as follows. First, we present the scholarship on assessment centres, recruitment devices and the graduate labour market, which informs our understanding of the empirical site of our research. While this body of literature offers rich insights into the power relations that circulate in the graduate labour market, we argue that existing research does not pay sufficient attention to the material aspects of these circulations. To complement and enrich the existing understanding of the graduate labour market, and in particular the role of recruitment devices in shaping this market, we propose a theoretical ‘toolbox’ of new materialism and market studies. The article then introduces our case and methods. A series of auto-ethnographic vignettes foreground the generative and ‘intra-active’ (Barad, 2007) qualities of the hackathon’s material structures, which we elaborate in the discussion. We conclude with reflections on the part the hackathon (as a material market device) played in the construction of a particular version of the graduate labour market.

Graduate recruitment and the (discursive) construction of the graduate labour market

Sociologists recurrently find that social mobility stalls at the level of graduate recruitment; the promise of equality, explicit in the expansion of higher education, is poorly realised in the working lives of many graduates, while ‘top-tier’, prestigious jobs, coveted by many graduates, often land in the hands of an already privileged demographic (Ashley and Empson, 2013; Rivera, 2012). In light of this, graduate recruitment emerges as an important nexus between graduates and the labour market. Multiple studies in this sociological tradition document how individuals with higher socio-economic status are advantaged in the competition for elite professional jobs (Ashley and Empson, 2013, 2016, 2017; Binder et al., 2016; Brown et al., 2004; Donnelly and Gamsu, 2019; Rivera, 2012, 2016; Wilton, 2011). Recently, Burke et al. (2019) argued that the graduate labour market remains ‘classed’ because of the structural barriers graduates from the less advantaged socio-economic backgrounds face as they enter and navigate it. Likewise, Morrison (2019) suggested that early in their career—that is, upon entering the graduate labour market—graduates from the working class are more likely to find it difficult to secure access to quality work.

These, and other, studies have attended to the outcomes of the recruitment process. At the same time, they have, as Gebreiter (2020: 235) notes, ‘tended to portray graduate recruitment as a largely unreflexive process whereby employers simply select those individuals who best match their biased recruitment criteria.’ In response, research has begun to consider how the recruitment process disciplines or shapes the applicants themselves. Foucauldian concepts of power, long established in human resource management (Townley, 1993), have provided scholars with a theoretical vocabulary to tackle the work or recruitment processes. Handley (2018) considers the ‘anticipatory socialization’ conducted through recruitment websites that shape graduate subjectivities even before they join the institution. Gebreiter (2020) argues that the recruitment practices of the ‘big

four' accountancy firms constitute a series of 'examinations' (application form, online psychometric tests, screening interview, assessment interview, partner interview) through which candidates develop an ethical subjectivity appropriate to the professional role. Ashley (2022: 427) explores how an employment programme designed to promote social mobility invites participants 'to adopt a subject position that conforms with an idealised professional identity' and ultimately reproduces unequal power relations and corporate control. In an exception to the Foucauldian programme, Ingram and Allen (2019) offer a Bourdieusian reading of the exclusionary processes reproduced in recruitment material, via constructions of an ideal graduate imbued with certain kinds of cultural capital; Rivera's (2016) study of high-status recruitment in US university campuses draws similar conclusions.

Notwithstanding the important contributions offered by this line of research, we suggest that it does have limitations. First of all, a focus on discursive processes underplays the role of the material in the construction of the everyday settings of the graduate labour market. Second, it runs the risk of presenting discourse as uniformly efficacious and offering an overdetermined account of labour market outcomes. By staging a collision between the literature of the graduate labour market and the 'new materialist' perspective (Barad, 2007), we highlight the generative, lively and unpredictable nature of the market's material structures, and the complexity and subtlety it adds to our analysis.

Materialities and markets

In order to explore how relations of power are rooted in the materialities of the graduate labour market, we draw on the theoretical 'toolbox' offered by the 'new materialism' or 'agential realism' of Barad (2007) and others: scholarship that theorises the material as generative, agential and lively (Bennett, 2010; Braidotti, 2000, 2002; DeLanda, 2006; all the way to Deleuze and Guattari, 2013 [1987]). New materialisms redefine and extend the scope of the material, insisting on matter's 'inexhaustible, exuberant, and prolific' generative capacities, on its dynamism (Barad, 2007: 170). The generative power of matter is 'not causally linear' (Van der Tuin and Dolphijn, 2010: 158). It emerges in what Barad (2007: 139) terms 'intra-actions', which (in contrast to the 'inter-actions' that presume 'the prior existence of independent entities') imply 'mutual entailment' (Barad, 2007: 152) and simultaneous co-constitution of phenomena. Generative—or agential—capacity emerges in and through these intra-actions in ways that are unpredictable, not predetermined. Matter, in other words, is a 'dynamic and intra-active becoming that never sits still—an ongoing reconfiguring that exceeds any linear conception of dynamics in which effect follows cause' (Barad, 2007: 170). This perspective emphasises the role of the material in the ongoing production of everyday life, not as a substrate for action, but as a partner on equal terms.

While new materialism offers an ontology, on a more pragmatic level we draw on the field of 'market studies' (Roscoe and Loza, 2019) to translate it into an empirical study of the graduate labour market. The notion of distributed, material, non-human agency is a familiar one in market studies scholarship. There is a widely shared understanding that 'market devices' (Callon and Muniesa, 2005; Muniesa et al., 2007)—the material apparatus that makes market action possible—are active participants in complex

human-nonhuman networks, which in turn generate action (Çalışkan and Callon, 2010; MacKenzie et al., 2007). For market studies, the agency of devices is the summing up of prior interactions of knowledge-producing networks embedded in, for example, a calculator or a measuring device. So MacKenzie (2018) writes of the ‘consequential’ effects of ‘material orderings’ of markets, highlighting the ways in which the physical features and infrastructures of a market have profound effects on its political economy. Market outcomes—matters of fairness, politics and ethics—are shaped by material market devices that interact with human actors and physical environments in which they are situated.

The literature of both new materialism and market studies suggest that it is important to pay attention to the material enactments of markets and to study how the ‘material ordering’ of markets (re)produces relations of power. Recent studies of organisations do, to an extent, take up this agenda, decentring humans as the sole source of agency (and language as the primary technology of power) and emphasising instead multiple processes of materialisation of organisational power and resistance (Ford et al., 2017; Gond and Nyberg, 2017; Harding et al., 2017; Kokkinidis and Checchi, 2021; Visser and Davies, 2021; Wilhoit and Kisselburgh, 2019). In scholarship concerning work and employment, materiality is similarly beginning to be addressed, especially in relation to professions that obviously implicate the body, such as clinical photography (Galazka and O’Mahoney, 2021), waste collection (Hughes et al., 2017), and construction (Ajslev et al., 2017)—or in relation to understanding specific embodied experiences of work, such as the experiences of women in (peri)menopause (Atkinson et al., 2020). These studies explore the complex entanglements and intra-actions between material and discursive, ideological or symbolic aspects of work and the construction of workers’ subjectivities. However, this lens has not so far been trained on the graduate labour market.

Empirical setting

Empirically, this article centres on a close study of a moment and a place in which the graduate labour market is enacted: namely, a recruitment ‘hackathon’ in the UK-based technology department of Globalfincio, an international financial services organisation. It considers the recruitment hackathon as a ‘market device’ implicated in the making of the market—meaning that it both produced and was the outcome of consequential material market orderings (MacKenzie, 2018). Hackathons, whether formal assessment situations such as the one we document, or settings that, while not labelled as recruitment events, may lead to job offers, are increasingly common among recruiters and are the topic of a growing ‘grey’ literature.

Globalfincio employs over 50,000 people worldwide and in 2020 had an annual revenue of £30 billion. Like many of its competitors, Globalfincio operates several structured employment and training programmes for recent graduates; this article focuses on Globalfincio’s UK technology graduate programme. The technology department is based in a small city, a brief train ride from London. The hackathon was deployed at the final stages of graduate recruitment, during the so-called ‘Discovery Days’—essentially, assessment centres designed to make a final selection of graduate programme candidates out of those who successfully navigate the initial stages of assessment (an eligibility

review, an online programming test, and a video interview). Each hackathon gathers 50–100 candidates and takes place over two days: on the first day, the candidates are split into teams and introduced to a technical challenge they are then asked to solve by designing a piece of software (in the hackathons that form the basis of this study, participants were asked to build a messaging app); after a brief planning session, hackathon participants are joined for a drinks reception and dinner by Globalfinco employees. On the following day, the candidates tackle the task in earnest; over the course of the day, they have to build the software they devised the previous evening. At only six hours (seven including a lunch break), Globalfinco's hackathon is shorter than is common in the tech industry, resulting in a compression and a corresponding intensification of the processes that take place during it.

Globalfinco's hackathon is a complex human and non-human assemblage and, like all such assemblages, is freighted with norms and politics (Roscoe, 2022). Shorn of its original subversive associations with illicit cyber-activity, it is a culturally mainstream event, one of many organised and sponsored by private firms, governments and civil society organisations. Existing scholarship notes the performative capacities of hackathons, their involvement in producing and configuring relations of power. For example, Irani (2015) argues that hackathons facilitate the inculcation of a neoliberal entrepreneurial citizenship: hackathon participants are encouraged to become optimistic, fast-paced agents of action, while the slow processes of establishing coalitions, finding consensus and building trust essentially become unnecessary impediments to this process of subjectification. For Zukin and Papadantonakis (2017: 2) 'hackathons are a powerful strategy for manufacturing workers' consent in the "new" economy.' Endrissat and Islam (2021: 1019) also note that hackathons 'stoke and direct affect' in order to 'bind, integrate and co-orient action' among organisational members. These studies recognise that hackathons perform social orders and construct subjects: the question remains *how*—and *how effectively*—they do so.

In Globalfinco, the hackathon was envisioned by its designers as a straightforward means to implement a meritocratic order in the organisation. Equality of recruitment opportunity was considered important, and the firm targeted and achieved an equal split of male and female candidates. The hackathon was perceived as an equalising tool, capable of eliminating recruitment biases related to the candidates' gender and socio-economic background because it enabled the evaluation of the candidates' 'objective' technical ability and communication skills in situ, rather than their ability to construct or narrate a 'desirable' image of themselves. In this article, we investigate how the meritocratic aspirations of Globalfinco's hackathon were translated into, enacted through, and subverted by the concrete material setting of the hackathon.

Methods

Data for this article were drawn from a year-long ethnographic study the first author conducted in an international financial services corporation that we call Globalfinco.² Over the course of more than a year, from September 2018 until December 2019, Olga observed how the firm's technology department assessed and selected candidates for its graduate programme. In total, she undertook five field visits, each lasting between two

and three days, 11 days in total; three of the visits coincided with Globalfinco's Discovery Days, which the author observed without participating in. She used an array of instruments to collect data, in order to understand 'how organizational actors make sense and get things done' (Cunliffe, 2010: 229): field notes and recordings, formal interviews and informal conversations (in person, or over phone, video and email), documents and instructions, online materials. In total, and across a project that extended beyond the hackathon that forms the topic of this article, she conducted over 30 formal interviews that lasted, on average, between 45 and 90 minutes; these were recorded, in most cases, and transcribed. Where recording seemed obtrusive or was inconvenient, she took written notes instead. These materials, as we explain below, coalesced into an ethnographic interpretation of Globalfinco's hackathon presented in this article.

Olga's access to Globalfinco was brokered by her parents' friends' niece's husband who at the time was working at Globalfinco after having completed its technology graduate programme and who offered to put her in touch with the mastermind behind the graduate programme, Dave. Dave's official role was 'talent attraction and development' in Globalfinco's technology department. Olga's access was therefore circumscribed by complicated corporate protocols, Dave's personal relational networks, and his position in the corporate hierarchy. Dave was both a gatekeeper and a key informant: he helped to arrange field visits; introduced Olga to his colleagues (and made decisions about whom to introduce her to); and mediated her engagement with the field in countless other ways. Olga saw Globalfinco's graduate programme primarily from Dave's perspective, which restricted her field of vision. It was difficult, for example, to find out about things, matters, and people that Dave deemed unimportant or marginal. The resultant account of Globalfinco's recruitment programme is therefore partial and situated (Haraway, 2007 [1988]), derived from Olga's particular location as an observer in the field.

Ethnographic approaches call on the researcher to reflect on and account for her presence in the field (Neyland, 2008). Personal, embodied experiences are given space in these accounts, sometimes as the main focus of research. Verran (1999: 136) also advocates for producing 'embodied accounts' that keep in the frame the socio-material elements of knowledge production. For the present article, the major source of data was Olga's embodied account, offered from her standpoint of a young woman, a researcher 'doing ethnography' for the first time, uncertain, hesitant and easily intimidated. She was, in many ways, a peer of those participating in the hackathon—a similar age and demographic, sharing cultural and aesthetic references and understandings; and yet, as a researcher and decidedly *not* a participant, she developed a 'perspective by incongruity' (Goodall, 2010). Data presented in this article are therefore shaped by her experience in (and of) the field and her own becoming as a researcher (Brown, 2021). Olga's engagement with the field over the course of the year allowed her to observe the unfolding of events for herself. Auto-ethnographic data are contextualised and supported by interviews. Of the 30 mentioned, relevant here are eight conducted with current graduates to elicit their views and experiences of the graduate recruitment process and 10 with engineers and administrative staff involved in the recruitment hackathon. These voices offered perspectives that were different from Dave's, though rarely critical of him. Overall, Olga's engagement with the field can be characterised as one of 'situated

multiplicity' (Amin, 2008 in Jones, 2021: 431) in which she explored how the graduate labour market was 'rendered meaningful' and enacted by various actors, both formally (through the design and planning of recruitment events) and through its actual enactment in practice (Jones, 2021: 432). However, the goal was not to achieve an 'impartial', 'objective' and 'complete' understanding of the field or altogether banish 'interpretive bias' from research (an impossible endeavour given the researcher's own entanglement with her field and the human and nonhuman participants in her research). The situated position that the researcher occupied in the field and in relation to other materials of her study is at the very centre of this article and makes possible an embodied and experiential account of the hackathon, illuminating aspects that might otherwise have been left in shadow.

To analyse her empirical materials, Olga first typed up her field notes and observations from Discovery Days and then used those to create a composite account of a 'typical' hackathon. Eschewing more formal approaches, like grounded theory or discourse analysis, analysis took place in and 'through' writing (Neyland, 2008), by producing a 'thick description' (Geertz, 1973) of the hackathon, which brought together Olga's observations from the events she attended, interviews, documents she collected and her own perceptions and feelings. We read through this 'thick description' over and over, noting recurrent patterns and connections among different kinds of observations, data and literature. The questions we asked of these data were not what it means, but, following Jackson's (2013) suggestion to draw on Deleuze and Guattari (2013 [1987]: 4), 'what it functions with, in connection with what other things it does or does not transmit intensities, in which other multiplicities its own are inserted and metamorphosed, and with what bodies without organs it makes its own converge.' There is no 'pure meaning' of data that can be distilled into 'categories', 'themes' or 'patterns' (Jackson, 2013: 114). This approach resists the movement 'away' from the data through the abstracting and generalising practices of coding (MacLure, 2013). Rather, data are seen as a mobile, relational, 'productive force' that enters into, interrupts, and transforms assemblages and knowledge projects (Jackson, 2013: 123). The researcher stays 'with' the data rather than moving 'away' from them towards some 'higher' order of meaning (MacLure, 2013). We thus looked for moments of contention and other salient (because of the importance attached to them by Globalfinco employees or due to our own positionality and curiosities) features of the data. The importance of materiality emerged very early on, even during the fieldwork as Olga shivered in the cold, fluorescent light of a lounge suspended above the green expanse of a football field, hungry, restless from coffee, looking at her watch again and again in anticipation of the end of the hackathon. Philip (as doctoral supervisor) shared in discussions as the narrative emerged through an iterative, diffractive process of writing, and was involved throughout the theoretical development and writing of the present article.

From a theoretical standpoint, the dynamism, exuberance and open-endedness of materiality are best captured through a reflexive attention to the embodied attributes of the researcher's own person, and those enacted by her peers. The emergent nature of materiality is perceived as *lived* experience, rather than alienated in coding procedures—an analytical method that would set up exactly the kinds of dualisms the new materialism seeks to avoid (St. Pierre, 2013). Our approach to 'data analysis' offers a sensitivity to

the mood and character of the material, incorporating Olga's embodied experience in (and of) the field alongside interviews and observations. We relied on Barad's (2007: 92) diffractive approach in which insights from different sources are thought 'through one another'. To take Barad's approach seriously is to consider observations in relation to relevant theoretical literatures, not as their 'unmovable and unyielding foil' (Barad, 2007: 92), nor as illustrations of extant theories. Thus, we placed understandings generated by different practices (theoretical work, field work) 'in conversation with one another' (Barad, 2007: 92–93). Reflecting this entanglement of theory and data, *in the vignettes of empirical observations that we offer throughout this article we seek to capture the embodied experience of fieldwork, inseparable from the theorising of materiality that we (both authors) develop around those vignettes.*

Material entanglements of the hackathon

With the help of vignettes from Olga's field narrative, we consider some of the ways in which the hackathon's material spatio-temporal configurations simultaneously *enacted* and *resisted* various corporate discourses and subjectivities, resulting in a precarious, only ever provisionally stabilised, material market order (MacKenzie, 2018). We argue that at the same time, material *erasures* were taking places whereby certain experiences and bodies were obscured, rendered immaterial, irrelevant and unimportant.

Material enactments

The first Discovery Day that I attend is set to start at 5pm on a Sunday, but I'm late, flustered from long hours of travel. It's December and it's already dark. The first part of the Discovery Day takes place in a 'boutique' hotel located awkwardly in a sprawling shopping mall on the city's edge. The mall makes a bleak impression: dim orange lights, no people in sight. The hotel is a fitting presence there with its (thin) veneer of glamour covering up a worn interior in a garish retro style. When I finally find my way to the windowless (or do I just remember it as windowless because of the darkness outside?) conference room where the Discovery Day takes place, the candidates are already working in their teams of six or seven, each at a big round table; they don't seem particularly excited or enthusiastic—though agitated, yes, at least some of them, and anxious.

A strange beginning, then: a sense of isolation, the mall set apart from the city, the hotel on its very edge. A sense, too, that the graduates were being disentangled—'decontextualized, dissociated and detached' (Callon, 1998: 19)—from the networks of relations in which they are ordinarily embedded and inserted into an alternative network of relations, that engendered by the recruitment hackathon. Crucially, this process was not solely rhetorical or discursive, but 'rooted in the outside world, in various physical and organizational devices' (Callon, 1998: 249), in material and relational infrastructures: the location of the hotel, the conference room with its sparse decor suggesting getting down to business, but then the gaudy glamour of the hotel, a nod to the 'quirky' and 'fun' self-image of the technology department, as Dave, the event's organiser, later explained. Not *discovery*, then, but *enactment*, with the hackathon as its central device, deployed to

‘assemble and arrange the world in specific social and material patterns’ (Law and Ruppert, 2013: 230).

At their tables, the teams of candidates, I find out, have an hour to plan how they will tackle the hackathon task the following day (they had just been given the task before I arrived). They then present their ideas to Globalfinco engineers.

The drinks reception and dinner that follow are awkward. The candidates are invited to demonstrate social aptitude, though warned that their ability to build rapport with Globalfinco employees is not assessed. They are for the most part earnest, eager to display enthusiasm and interest in the firm, the opportunities it offers, the kind of work they are likely to be doing. And yet the majority of them are not certain what to ask or say, and the conversations are strained, contrived.

At 7:30am next morning, the candidates are bussed to the stadium, home of the local football team (and sponsored by Globalfinco—the fact preserved in the stadium’s name), where the hackathon takes place. It’s not even eight in the morning when they quietly decant from the buses and are led by two female ‘runners’ through a series of cold corridors, atriums, and staircases—endless and eerie. Eventually, they enter a vast lounge with floor-to-ceiling windows overlooking the expanse of the green football field below. Roll-out posters with corporate logos and slogans mark the firm’s claim on the otherwise bare space. The lounge is cold, bathed in fluorescent light; it feels sterile and impersonal.

Consider, now, the remoteness of the venue in which the hackathon took place, the stadium—echoing the remoteness of the dinner venue, yet also amplified, scaled up. Irani (2015: 804) argued that hackathons must be enacted apart from the participants’ daily lives, as a special time ‘away from routine obligations to family, managers, or long-term plans’ in order to allow the participants to engage in unencumbered creativity and self-expression. As such, hackathons tend to take place on the weekends or at conferences, in insular, circumscribed spaces. The setting apart and self-containment of the hackathon designates it as a unique, exclusive microcosm where the rules that guide most of people’s daily lives, and especially their work lives, do not apply; the participants’ creativity is thus, supposedly, unleashed, liberated from the constraints of rules and routines. As an extension of this, social relations during hackathons are similarly disembedded from the long-term orientations of lasting social bonds, such as building trust and consensus (Irani, 2015). Likewise, Globalfinco’s hackathon took place apart from the candidates’ daily lives—many travelled from across Europe and beyond to attend, and now they were emplaced in this strange, sparse, cold venue—no people in sight other than Globalfinco employees, their assessors. This setting-apart invited the candidates to disentangle themselves from the modes of relating to one another that they might adopt in their daily lives and even to cast aside their ‘ordinary’ selves. Instead, they were invited to conjure and enact a vision of themselves as Globalfinco graduate trainees. The material infrastructures of the hackathon, then, articulated the roles of the various actors involved and delineated the boundaries between the relations, judgements and behaviours that could be included and those that had to be excluded from the hackathon.

The candidates file towards the tables their teams are assigned to (there is a poster outlining the sitting arrangements at the entrance). Dave—enthusiastic as ever, wearing a corporate-branded hoodie—greet the candidates. The assessment won't start until 9am, to give the candidates time to settle and get ready.

In Globalfinco's effort to disentangle the candidates from their daily lives and encourage them to enact their visions of themselves as Globalfinco employees, the candidates were aided by a whole host of material cues. The hackathon venue—the stadium—its remoteness aside, explicitly framed the hackathon as akin to a sports contest, urging the candidates to demonstrate the qualities appropriate to the competitive sporting arena: individual achievement, determination, goal-orientation. The assessors' attire offered another cue. The studied informality of most outfits evoked Silicon Valley's 'broad sartorial insistence on hoodie-slacker chic' (Freedland, 2017), its 'startup twinsets, branded hoodies unzipped to reveal T-shirts with the same logo' (Wiener, 2020: 60). Alongside other aesthetic and sartorial features of the hackathon, casual clothes were supposed to articulate a corporate culture conscious of its own informality and unpretentiousness. The hackathon participants were encouraged—via the deployment of a host of material cues—to set aside their received notions of corporate tedium and to subscribe to Globalfinco's supposedly laid-back culture. However, materiality could not be deployed in a straightforward way. Rather, the various material features entered into complex intra-actions with other entities; mediated by the weightiness of Globalfinco's corporate empire, the branded hoodies donned by its engineers suggested not so much 'slacker chic' as dutiful signalling of corporate allegiance.

Material resistance

Examples of such complex material intra-actions proliferated during the hackathon: the material *resisted* the scenarios it was called forth to enact. Like the contradiction materialised in the branded hoodies—the corporate intention to convey a laid-back coolness clashing with the conformity of most employees wearing the same hoodie with Globalfinco's logo printed onto its chest—the material features of the hackathon resisted and subverted the attempts to mobilise them in service of corporate visions and agendas.

Along one of the lounge's walls, catering is set up: tea and coffee urns, baskets of fruit and miniature pastries, and a table crammed with sugary, fizzy drinks. Dave welcomes the candidates to breakfast but asks that they limit themselves to 'two pastries per person'. Most demolish their allowance within moments; Dave tells them not to fret: there will be a 'cookie break' soon.

The food the candidates were served over the course of the hackathon reveals a clash between the desire to maintain an appearance of generosity and abundance, and the need to economise. The breakfast was limp and insufficient; the pastries really were *miniature*, and the limit of two per person was ludicrous in a roomful of twenty-somethings. The cookie break—and the seemingly limitless supply of sweet soda—offered an

opportunity to spike the blood sugar, which plummeted soon after breakfast, but could not provide any more nourishment or sustain the candidates' energy throughout the long day. Food offered not so much a pleasurable occasion for shared conversation and a sense of community, but rather something functional: not 'a bonding opportunity or a gesture of care, but a business decision—an incentive to stay inside, stay longer, keep grinding' (Wiener, 2020: 70). Though it is peculiar to speak of resistance enacted by pastries and soda, we suggest that the capacity of these seemingly trivial materialities to subvert (the appearance of) the orders they are enlisted to uphold is non-negligible.

Meanwhile, assessors start to arrive, crossing the lounge on their way to the adjacent room. (They have a separate lounge of their own.) They are dressed in a mix of 'smart casual' and a kind of nondescript hoodie-and-jeans attire—more relaxed than the suit-clad investment bankers, but not quite as casual as the 'tech bros' of Silicon Valley.

The appearance of a flattened organisational structure and a friendly non-hierarchical equality that the hackathon sought to impart through the informal clothes and the ostensible equality of the candidates and their assessors was disrupted by a manifest separation of the former from the latter. Though assessors were invited to intermingle with participants during the hackathon, they were also allocated a separate room (during both the planning session and the hackathon itself), which the candidates were not allowed to enter. This physical separation suggested the limits to the culture of openness and informality: the candidates were reminded that they were there to be assessed and that the assessment ought to be kept apart from the spaces of amicable or casual interaction.

All in all, the hackathon's designers cultivated visual and behavioural cues to enact particular outcomes—including carefully arranging highly visible, material aspects of the hackathon in order to elicit appropriate behaviours from both the candidates and their assessors. The imposing competitive sports arena in which the event took place, the self-containing, isolated nature of this venue and the assessors' informal attire—all of these were deployed to communicate to the candidates a particular image of Globalfinco, to encourage them to subscribe to it and to comply with its requirements. At the same time, the material often resisted the expectations vested in it—not in an active, deliberate way, but because of the complex entanglements and intra-actions of which it was part: intra-actions with discourses, agendas, personalities, behaviours, opinions, and interpretations—not least our own, as researchers seeking to imbue the empirical material with significance and meaning.

Material erasures

Another peculiar aspect of the hackathon's materiality, and perhaps the most sinister, was material *erasure*: an erasure of the material, and gendered efforts of organising the hackathon. While male assessors outnumbered female by a huge margin (10 out of approximately 60 assessors were women) the logistics and practicalities of the hackathon—from booking transportation, hotels and catering, to providing info-packs and schedules for the assessors, to devising the schedule and ensuring everyone adhered to it—were the responsibility of two women, Sophie and Stacey. They occupied the same 'level' in

Globalfinco's organisational hierarchy as Dave, except in the human resources (HR), rather than the technology, department. Sophie and Stacey were supposed to be working together with Dave as equal partners to design and organise graduate recruitment. What we observed, however, was the relegation of the two women to administrative tasks and organising the logistics of events. Besides Sophie and Stacey, there were runners who helped to make sure the hackathon proceeded smoothly; they too were women: their role was also to ensure the faultless efficiency of the event while remaining largely invisible. All these women were worn out by the demands of their roles, which left material marks on their bodies. For weeks leading up to the hackathon both Sophie and Stacey suffered from insomnia and nightmares; Sophie developed painful, stress-related ulcers. The seemingly invisible infrastructures sustaining the hackathon were in fact embodied, alive: the event did not unfold through sheer conjuring of its organisers' imagination but required *painstaking* efforts of coordination.

Yet Sophie, Stacey and the runners were not able to take credit for their labour to make the hackathon happen. They did so only on Dave's terms, when he chose to thank them briefly in the beginning of the hackathon. Even then, he was the one with the power to shape the narrative of their involvement: a gendered dynamic of crediting women's work. The women were also, unsurprisingly, held responsible for things going wrong. They were often reprimanded—humiliatingly, in the full view of their colleagues, demeaning their professional stance. The tension between the formal acknowledgement of their work and their ongoing marginalisation was reflected in the fact that during the hackathon Sophie and Stacey were physically rendered invisible. They hardly made an appearance in the main spaces where the hackathon unfolded; rather, they were relegated to the adjacent, 'back' spaces. There was often a physical partition, a separation, siloing Sophie and Stacey off, enclosing them, their role obscured and concealed. Similarly, the runners remained always in the background, their invisibility the vital condition of the hackathon's smooth unfolding. The material organisation of the hackathon thus instantiated and sustained the women's marginalisation, their ostensible *erasure*.

Recruitment events in the technology industry can create a 'chilly' environment for women through stereotypically gendered images and behaviours, as well as women's absence or exclusion from conversations, recruitment practices and work settings more generally (Faulkner, 2009; Murphy et al., 2007; Wynn and Correll, 2018). Globalfinco's hackathon perpetuated an environment that was chilly both metaphorically and very literally. For example, the stadium was impressive, but in an intimidating way: its corporate grandeur was, to Olga at least, imposing and overbearing. Many of the male candidates, however, found it 'cool' to be at the stadium and it was not unusual to overhear a male Globalfinco employee extolling the beauty of the stadium to a candidate. Globalfinco's football stadium evoked connotations to both a highly competitive sport that is often seen as implicated in the construction of masculine identity and a masculine (and often also sexist) fan culture (Chiweshe, 2014; Gosling, 2007; Jones, 2008).

Siting the hackathon in this particular venue foregrounded these gendered associations and was experienced by the young, female observer as discomforting and alienating, feelings she intuited in the exhausted bodies of those undergoing the hackathon. Exhaustion was, in fact, a central characteristic of the hackathon. Having limits is a

fundamental characteristic of the material, circumscribing all endeavour; as the hackathon used up its material resources, it collapsed. Discovery Day eventually consumed even itself.

Despite the setting-up of the hackathon as an exciting, adventurous event, it is in fact a dull and seemingly endless slog. The candidates work all day at their tables: a roomful of twenty-year-olds with their faces close to their screens, plastic plates with leftover food, crumpled napkins, soda cans and paper cups half-full with cold coffee accumulating around them as the day goes by.

As the challenge draws towards its conclusion, there is at once a sense that there isn't enough time as the teams rush to assemble working, presentable prototypes; and one of weariness: the candidates look exhausted, ready to be done with the day. The presentations take place at 3pm and are anti-climactic: the candidates are tired, some are uneasy about presenting their hastily assembled software, others can only demonstrate parts of it that haven't been properly linked together.

By 3:30pm, the hackathon is over; the candidates are asked to gather their possessions, given a keep cup with Globalfinco's logo and a handful of candy from a big cardboard box, and taken to the buses that deliver them back to the city centre, where they are released back into the normalcy of their own lives.

The hackathon is exhausting. There is simply not enough time, not enough energy, not enough comfort. It is an antithesis of the 'ritual of ecstatic labour' documented by Zukin and Papadantonakis (2017: 1). In fact, the 'labour' is more or less beside the point: eventually, the labour not only of the hackathon's organisers, but also of its participants, is erased. The prototypes are unfinished. Nothing of value is created to be retained by the company. The spent labour is only valuable insofar as it enables the candidates' evaluation. All that is left are fatigued bodies, crumpled napkins and empty soda cans.

Discussion

The graduate labour market has long been a site of interest for researchers of work and careers. It is the moment where social mobility stalls; where the promise explicit in expanding higher education comes up against entrenched advantage in the form of socio-economic and cultural privilege. Research has abundantly illustrated the stratification and social closure that structures competition for elite professional jobs (Ashley and Empson, 2013, 2016, 2017; Binder et al., 2016; Brown et al., 2004; Donnelly and Gamsu, 2019; Rivera, 2012, 2016; Wilton, 2011). In the end, as Rivera (2012) pithily notes, elite graduates get elite jobs. Yet, despite a clear scholarly understanding of the reflexive role of processes of measurement and valuing, there remains a tendency to concentrate on outcomes for graduates (Gebreiter, 2020), rather than considering how the process might reflexively interact with the aspiring professional workers. Recent research has begun to unpack the performative aspects of recruitment processes, especially the construction of proto-professional employment subjectivities (Ashley, 2022; Gebreiter, 2020; Handley, 2018).

We have sought to complicate this picture. We stage an encounter between the graduate labour market and the theoretical frameworks of the ‘new materialism’ (Barad, 2007) and market studies (Roscoe and Loza, 2019). These framings draw attention to the materiality of actually existing markets—a labour market situated in a place and a time—and the consequences that materiality has. The material is generative, agential and lively (Barad, 2007; Bennett, 2010); it is power-filled, consequential and unpredictable. Such a framing suggests that, despite their important contributions, accounts based purely on discourse may be overdetermined, miss vital subtleties of how markets actually come into being and overlook diverse agencies involved in markets. Such is the theoretical provocation with which we began our analysis.

Drawing on new materialist and market studies scholarship, we asked how ‘relations of power are rooted in, and take root in’ (Hughes et al., 2017: 119) the material conditions of the graduate labour market. We presented an empirical case that explores *how* the material ordering of the graduate labour market (re)produces power relations. We did so by considering how the material features of a specific graduate recruitment device—a so-called ‘hackathon’—participate in the making of the graduate labour market. With the help of vignettes from Olga’s field narrative, we considered some of the ways in which the hackathon’s material configurations simultaneously *enacted* and *resisted* various corporate discourses and subjectivities, resulting in a precarious, only ever provisionally stabilised, material market order (MacKenzie, 2018). At the same time, material *erasures* obscured, rendered immaterial, irrelevant and unimportant certain experiences and bodies. The case of Globalfinco, then, is one in which recruitment practices were both thoroughly material and had material consequences.

Through the hackathon, Globalfinco attempted to instil, or *enact*, a particular vision of its culture, of what work in the firm was like. We have shown that this process was not purely discursive (as documented by previous studies) but thoroughly material. An assessment centre staged as a hackathon is rich in semiotics: a history of hacking as a counter-cultural phenomenon; the associations with the marathon and its neoliberal virtues of individual fortitude and conscious self-improvement; and most of all the technoutopianism of Silicon Valley, a form of meritocracy based on technical expertise to which the hackathon organisers explicitly aspired. The hackathon must be a special place, away from participants’ everyday lives (Irani, 2015), if it is to bring about the desired kind of citizenship. We have shown that the hackathon’s material features—from its remote location to the assessors’ attire—invited the candidates to disentangle themselves from their ‘ordinary’ selves and relations and instead to conjure and enact a vision of themselves as Globalfinco graduate trainees. So far, our study simply adds richness to existing understanding of the construction of graduate subjectivities: there is a material dimension, too.

To stop here is to underappreciate the material, with its lively, agential, often subversive, properties. It is recognised that participants in the graduate labour market might refuse to adopt certain subject positions (for example, Ashley, 2022). Our contention is that certain kinds of resistance are also part of the material apparatus of the hackathon. While the process of disentangling and re-entangling actors is a crucial part of making markets (Callon, 1998), market studies has shown that it produces ‘misfires’ and ‘overflows’ (Callon, 2007, 2010; Callon and Law, 2005; Geiger and Gross, 2018): ‘effects that

might strike back' (Callon, 2007: 323). We have suggested that the hackathon's creators did not succeed unreservedly in their ambitions to construct ideal graduates (Handley, 2018). We have shown how the material features of the hackathon *resisted* and subverted attempts to mobilise them to uphold corporate agendas. For example, the transplantation of the aesthetic tropes of the Silicon Valley into the material reality of a corporate setting in small-town England was uneven and often comical, signalling less techno-utopian cool and more middle-aged manager chic and corporate conformity. The hackathon's literally (and materially) chilly environment contributed to what Olga, the first author, also experienced as metaphorically 'chilly' (Wynn and Correll, 2018), feeling discouraged and worn out by the material configuration of the hackathon—an embodied and subjective experience that substantiates research that posits the exclusionary effects of such 'chilly' environments. Taking a lead from Barad's (2003) materialist feminist argument, we show that this unwelcoming 'culture' is material, inscribed in the venue and infrastructures of the hackathon. We document exclusion and marginalisation of women, not only the chilling of candidates but the bodily scars imposed on those involved in organising the hackathon, while their ostensibly equal rank with their male colleagues in the organisational hierarchy is obscured. The hackathon is exhausting, the participants cold and hungry, far from the idealised 'ritual of ecstatic labour' the hackathon is supposed to embody (Zukin and Papadantonakis, 2017: 1). We call these consequential exclusions material *erasures*.

In answer, then, to the question of how specific market situations and architectures might reproduce power relations within the graduate labour market, we show that they do so in a way that is more subtle and complex than prior scholarship might suggest, and on this basis we offer a novel contribution to the sociology of work. While the situated, auto-ethnographic nature of our analysis does limit its generalisability, it remains theoretically powerful and suggests possibilities for further research in the graduate labour market and beyond. Our framing of enacting, resisting and erasing illuminates the material constitution of the graduate labour market. The economic and sociological research to date has paid little attention to the *materialisation* of this market, despite the obvious embodiment of the labour market participants. This omission limits the theorisation of power relations and inequalities in the graduate labour market to largely discursive explorations. Where researchers do pay attention to some aspects of materiality (Ashley, 2022; Handley, 2018) it is often to suggest that they are deployed in service of particular discourses or (class) interests. The articulation of the co-constitution and entanglement of discourse and materiality in the work of Barad (2003, 2007), in particular, offers a new way to think about the instantiation of market orders—and in this case, the order that obtains the UK's graduate labour market. Barad (2003: 828) writes that 'discursive practices are not human-based activities but rather specific material (re)configurings of the world through which local determinations of boundaries, properties, and meanings are differentially enacted.' Following Barad, we note how discourses are made material, recreated and sustained in architectures, in objects, in the specific temporal unfolding of events, even in the circulation of heat—and how these materialities contribute, in an ongoing manner, to reconfiguring the very orders they are called forth to uphold.

This lens of analysis excludes certain aspects of the process, such as the 'wash-up' meeting that followed the hackathon where hiring decisions were made; this moment of

sorting and selection, which overflows into the broader context of the institution, is worthy of an article in its own right and falls beyond the remit of the present one. We do not know how graduates who have navigated the hackathon, or similar assessment centres, reflect on the experience and adjust their future plans, and this would be a fascinating avenue for future research. Nevertheless, through paying attention to the host of additional agencies that are nonhuman and emergent, we complicate existing understandings of the enactments of power relations and (labour) market orders, and the erasures they entail. Our analysis steps away from an overdetermined emphasis on the structures of capital and discourses of neoliberalism; we show that power relations coalesce provisionally and imperfectly through the material apparatus of the market. Moreover, in illuminating the inadvertently emerging spaces of material resistance, we offer a concluding suggestion that paying attention to materiality might open up spaces for rethinking ‘power in organizations as radically open to its continuous reconfiguration’ (Kokkinidis and Checchi, 2021: 16), a suggestion that offers many possibilities for future research on this topic.

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Notes

1. By ‘graduate labour market’ we mean the labour market that university graduates enter: their youth, the fact that they are straight out of university, and the possession of higher education credentials, are all important factors whose constellation creates a peculiar microcosm for both recruiters and graduates.
2. Just as we use Globalfinco as a stand-in for the organisation’s real name, we have changed the names of all participants to protect their anonymity. We use names rather than codes to preserve the participants’ aliveness and emphasise that they are actual human beings, with complex histories, motivations and agendas.

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