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REVIEW ARTICLE

Constraints and affordances for UK doctors-in-training to exercise agency: A dialogical analysis

Karen Mattick[1] | Anna Goulding[2] | Daniele Carrieri[1] | Nicola Brennan[3] | Bryan Burford[2] | Gillian Vance[2] | Tim Dornan[4]

[1]University of Exeter Medical School, University of Exeter, Exeter, UK

[2]School of Medicine, Newcastle University, Newcastle upon Tyne, UK

[3]Collaboration for the Advancement of Medical Education Research, Peninsula Medical School, Faculty of Health, University of Plymouth, Plymouth, UK

[4]Centre for Medical Education, Queen's University Belfast, Belfast, UK

Correspondence
Karen Mattick, Department of Health and Community Sciences, University of Exeter Medical School, University of Exeter, Exeter, UK.
Email: k.l.mattick@exeter.ac.uk

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Abstract

Introduction: The goal of medical education is to develop clinicians who have sufficient agency (capacity to act) to practise effectively in clinical workplaces and to learn from work throughout their careers. Little research has focused on experiences of organisational structures and the role of these in constraining or affording agency. The aim of this study was to identify priorities for organisational change, by identifying and analysing key moments of agency described by doctors-in-training.

Methods: This was a secondary qualitative analysis of data from a large national mixed methods research programme, which examined the work and wellbeing of UK doctors-in-training. Using a dialogical approach, we identified 56 key moments of agency within the transcripts of 22 semi-structured interviews with doctors based across the UK in their first year after graduation. By analysing action within the key moments from a sociocultural theoretical perspective, we identified tangible changes that healthcare organisations can make to afford agency.

Results: When talking about team working, participants gave specific descriptions of agency (or lack thereof) and used adversarial metaphors, but when talking about the wider healthcare system, their dialogue was disengaged and they appeared resigned to having no agency to shape the agenda. Organisational changes that could afford greater agency to doctors-in-training were improving induction, smoothing peaks and troughs of responsibility and providing a means of timely feedback on patient care.

Conclusions: Our findings identified some organisational changes needed for doctors-in-training to practise effectively and learn from work. The findings also highlight a need to improve workplace-based team dynamics and empower trainees to influence policy. By targeting change, healthcare organisations can better support doctors-in-training, which will ultimately benefit patients.

1 | INTRODUCTION

> *'When action is given analytic priority, human beings are viewed as coming into contact with, and creating, their surroundings as well as themselves, through the actions in which they engage'.*[1p8]

Learners with greater agency learn more, and favourable workplaces optimise agency.[2] Agency (or the socially constructed capacity to act) is critically important for enabling the development of the practical wisdom needed for complex decision-making,[3] which is an inherent part of the practise of medicine. In clinical settings, therefore, employers need to provide a work environment that affords sufficient agency for doctors-in-training to learn effectively and practise safely. However, it seems that medical education is not wholly successful in enabling agency, as judged by research-based accounts of a lack of agency in medical practice,[4] dissatisfaction of medical trainees and clinicians with their work[5] and the obstinately high rate of avoidable adverse patient outcomes.[6] In their review of agency within medical education, Varpio et al. argued that '*failing to account for how individuals assert (or fail to assert) agency in different situations is a significant omission in HPE* [Health Professions Education] *scholarship'* and highlighted that the study of agency is particularly well placed to examine interpersonal challenges ([7] p354). Therefore, in this study, we have researched the challenge of affording the appropriate level of agency to doctors-in-training using a dialogical approach.

Although it might be tempting to offer 'quick fixes', social theories suggest that policy makers and leaders should understand intractable problems before attempting to solve them. Billett[2] argued that neither the affordances of workplaces nor the agency of individuals working in them can, alone, account for the quality of workplace education since the two are relationally interdependent. The relationship between individual agency and the social structures in which individuals are expected to exercise it has been a central concern of sociology,[8–12] and, in psychology and education, research has explored how interactions between individuals and their environments determine behaviour.[7,13] Despite this longstanding preoccupation with learners' agency, the problem is progressing very slowly towards solution. This exemplifies the theory–practice gap that bedevils medical education: neither theorists working within disciplines nor practitioners on the ground are able, alone, to improve complex practice. van Enk and Regehr's[14] proposed solution is 'use-inspired theory', which (by positioning research in the complex nexus of theory and practice) avoids the translational step where the practical implementations of theory tend to fail.

Sociocultural theory (SCT) is a complex learning theory that locates subjectivity *between* rather than inside people.[15] It is well suited to use-inspired research because its reach extends from individual action to social structure in a seamless whole, and it is used increasingly within medical education research.[16–19] SCT is also well suited to researching processes within large, multifaceted and complex organisations, such as hospitals. By identifying constraints and affordances to exercising agency, SCT can help to convert stultifying institutional norms[20] into energy for expansive learning.[21] SCT assumes inseparable links between individual action, collective activity and discourse. Vygotsky's work[15,22] centred on two ideas: activity as the unit of analysis and artefact-mediated action. He argued that any attempt to understand human development, learning and consciousness should be rooted in observable activities, which are interpreted as complex wholes. An activity (synonymous with 'a practice') is orientated towards some ideal (the object) and characterised by its own norms, rules and tools. Activities are made up of individual actions, every one of which has a purpose and is therefore, to a greater or lesser extent, a goal-directed expression of agency. Although he proposed that three kinds of artefact (words, tools and signs) contribute to artefact-mediated action, Vygotsky was particularly interested in spoken words. These, he theorised, are a unity of thinking and speech, and of generalisation and social action. The relationship between action and mediating artefacts is bidirectional: artefacts influence actions and actions influence artefacts.

At its core, workplace learning is a negotiation: individuals negotiate their engagement with the affordances of their workplace and its expectations of them. These negotiations take place in the complex nexus constituted by the demands of workplace contexts, the influence of professional cultures, and the needs and aspirations of individuals. There have been studies of newly qualified doctors' individual experiences[16,23] and of transitions,[24,25] but less research has focussed on how organisational structures constrain or afford agency. Analysing 'key moments of agency' can identify priorities for organisational change that would, in turn, promote agency amongst doctors-in-training and thereby improve clinical practice and learning.

2 | METHODS

2.1 | Aim and research questions

The aim of this study was to identify priorities for organisational change, by identifying and analysing key moments of agency (or lack thereof) described by doctors-in-training. The research questions were as follows:

> **RQ1.** How is agency to learn in the context of the work of doctors-in-training in the UK influenced by the constraints and affordances of clinical workplaces?

> **RQ2.** By analysing constraints and affordances, what evidence-based priorities for change exist that may increase agency of doctors-in-training?

2.2 | Study design

This study is a secondary analysis of qualitative data from a large national mixed methods research programme, which examined the work and wellbeing of UK doctors-in-training.[26] It did so during the

COVID-19 pandemic, which provided a context where normal structures were disrupted, and thereby provided new insights into how doctors-in-training could work and learn. SCT assumes an inseparable link between action and discourse, which led us to choose a dialogical approach to examine agency. According to Bakhtin's theory of dialogism,[27] people are always in a state of addressing others and being addressed by others. They exercise agency linguistically, authoring their actions and identities within 'multivoiced' cultures, using social languages, and speech genres. The term 'multivoiced' acknowledges that words are laden with different meanings given by those who used the words previously in different cultural contexts. The term 'social language' acknowledges that any speech acts uses 'a discourse particular to a particular stratum of society (professional, age group etc) within a given social system at a particular time'. The term 'speech genres' refers to socially-sanctioned ways of choosing social languages and voices in which to exercise agency. Dialogism is a sociocultural theory insofar as it emphasises how social, historical and institutional voices interpenetrate discourse.[1,28] It is a critical theory insofar as it assumes that utterances are sites of opposition and struggle, where dominant voices exercise power over non-dominant voices. Dialogical analysis[29] is critical and analytic in spirit, asking 'who is doing the talking?' and 'who is the audience?'. In line with the study's orientation towards SCT and dialogism, verbal instances of action (rather than individual experience) are the unit of analysis and our research endeavours to address power imbalances by identifying priorities for change.

2.3 | Participants and training/organisational context

DC and AG conducted 22 semi-structured interviews in October or November 2020 with doctors-in-training nationwide. These participants were in the first rotation of a training stage called foundation year (FY) 1, employed by the UK National Health Service (NHS) and located in multiple organisations (typically hospitals). For the purposes of this research, we refer to individual participants (doctors-in-training) working in multiprofessional teams within organisations as being part of a complex healthcare system (the NHS) that is influenced by a wider policy context. The NHS, founded in 1948, is a publicly-funded healthcare system (comprising NHS England, NHS Scotland, HSC Northern Ireland and NHS Wales) and one of the largest single-payer healthcare systems in the world. Most research participants had graduated 3 months early (typically in April 2020) due to the COVID-19 pandemic and worked in a novel role called interim Foundation Year 1 (FiY1) before joining FY1 as normal in August 2020. Thus, participants typically had 3–6 months of post-qualification work experience when interviewed. They were located in multiple hospitals within England, Northern Ireland, Wales and Scotland and had indicated willingness to be interviewed at an earlier stage of the research programme.[26] They were purposively selected to provide a range of gender, age, ethnicity, geography and self-reported stress. We prioritised those who had engaged significantly in earlier stages of the research since they were potentially articulate and reflective participants. Interviews were conducted via a video conferencing tool (Zoom) and focussed on participants' experiences of their work and wellbeing to date. The interviews were designed by DC, AG and KM and used prompts inspired by SCT, with an illustration of the pandemic timeline as an aid to recall where necessary[26] (interview schedule provided as supporting information). Interviews ranged from 26 to 93 min (median 62 min), equating to 1374 min of audio data. Informed consent was sought from participants. The interviews were transcribed verbatim and anonymised prior to analysis.

2.4 | Data analysis

To start, we crystallised the analytic focus by reading complete transcripts in pairs, discussing them, and reporting back the main narrative elements to meetings of the whole team. Following Sullivan's guidance,[29] we then removed elements unrelated to agency within medical work from each transcript to condense the dataset whilst remaining close to participants' original words.

Sullivan[29] defines key moments as utterances of significance, identified by form (e.g. an anecdote, a reflection) and content (e.g. relevant to agency in its broadest sense) and boundaried by a move in the interview, such as a response to an interviewer's question or a spontaneous change of topic. We initially identified around 100 key moments relevant to the research question. These described: being able or unable to display agency; managing interpersonal relations in order to secure agency; reflecting on agency in different future situations; or reflecting on the agency of other hospital staff. Following team discussion, we excluded key moments that were less relevant to the research question, reducing the number from 100 to 58. All participants were represented, contributing one to three key moments, which varied in length, depending on how many reflections, anecdotes and experiences they related. We gave each key moment a unique identifier and label (e.g. *pushing patients away*). Next, as suggested by Sullivan,[29] we selected short 'sound bites' from each key moment so that all participants' voices were represented in a manageable way and could be compared with other participants' voices. One researcher (KM) then worked through each key moment using a battery of questions informed by Sullivan[29] to explore what the participant's speech was 'doing': *From what social position was the participant making their utterance? How does the text construct their positional identity? Who might they be answering and addressing? How might the utterance be hegemonic or exemplify struggle? What is the genre? How is metaphor used? What is the emotional register?* Although she asked all questions of all key moments, not all were helpful in every case. This process led her to exclude two more key moments, leaving a final set of 56. KM then progressed to highlight extra-discursive features (e.g. contextual information in brackets, points of emphasis underlined).

The team discussed the analysis at regular intervals, engaging critically with the key moments by, for example, considering how the status quo could be challenged and changed even when a participant

said it could not. To identify and account for variance in the data, we also analysed deviant cases: for example, when similar environments afforded action to some participants but not to others. We selected key moments to present in full in the Results section based on their ability to back up the claims made, offer alternative interpretations and draw out contradiction and nuance. We identified priorities for organisational change, based on the strength of evidence provided by the key moments.

2.5 | Team reflexivity

To avoid a 'tendency toward disciplinary fragmentation and isolation' ([1] p4) and ensure a collective effort, the research team represented multiple disciplines, professions, career stages and nationalities, including doctors who had successfully navigated the system and social and biomedical scientists who had studied it without being part of it. We took a relativist perspective, understanding agency as being shaped by social, political, cultural, economic, ethnic and gender values and followed an approach to optimising teamwork through reflexivity.[30] We met regularly throughout the study via videoconference to share literature and excerpts of the raw data, question each other's interpretations and ultimately agree an overall interpretation. We challenged ourselves to reflect on the implications of our research and the extent to which the data and recommendations might be context-specific (e.g. UK, COVID-19, hospital-based). We also reflected on the stakeholder group discussions from the wider research programme (including doctors-in-training and patients) and sought additional expertise to challenge our thinking (see acknowledgements).

2.6 | Ethics approval

Research ethics approval was granted following review by the Faculty of Medical Sciences Research Ethics Committee at Newcastle University (ref 1910/2410).

3 | RESULTS

3.1 | Overview of the data

Table 1 shows that most participants were under 25 years of age and reported their ethnicity as white. Table 2 reports the 56 key moments of agency, including soundbites from each. The emotional register of

TABLE 1 Interview participant demographics. Further detail can be found in the primary publication (the final report), which was focused on evaluating the FiY1 role.

Code	Interview ID (original GMC study)	Transcript ID (this study)	Medical work prior to F1 post? (as an FiY1)	Gender	Foundation School for F1	Stated ethnicity	Age group
f1q.lf.62.alw	Interview 1	T4	No	Male	England (South)	Other	Under 25
f1q.sr.99.qra	Interview 2	T6	No	Female	England (South)	Other	Under 25
f1q.up.11.srx	Interview 3	T2	Yes	Female	Wales	White	25 or over
f1q.wl.34.mta	Interview 4	T8	Yes	Female	England (South)	White	Under 25
fiyq.af.18.zzp	Interview 5	T3	Yes	Male	England (South)	Other	Under 25
fiyq.bi.48.cpo	Interview 6	T9	No	Male	Northern Ireland	White	Under 25
fiyq.cg.58.yfr	Interview 7	T10	Yes	Female	England (South)	White	25 or over
fiyq.dw.57.dcs	Interview 8	T7	No	Female	England (North)	Other	Under 25
fiyq.gt.14.jpx	Interview 9	T1	Yes	Male	Northern Ireland	White	Under 25
fiyq.jm.43.jvf	Interview 10	T11	Yes	Female	England (North)	White	Under 25
fiyq.ma.55.yfx	Interview 11	T12	Yes	Female	England (North)	Other	Under 25
fiyq.pj.51.lmd	Interview 12	T13	Yes	Male	England (South)	Other	25 or over
Fiyq.po.77.nsz	Interview 13	T14	Yes	Male	Scotland	White	25 or over
fiyq.pq.99.hpg	Interview 14	T15	Yes	Male	England (North)	White	Under 25
fiyq.rb.87.kqf	Interview 15	T16	Yes	Female	England (North)	Not given	25 or over
fiyq.rp.28.tkg	Interview 16	T17	Yes	Male	England (South)	White	25 or over
fiyq.sd.11.wct	Interview 17	T18	No	Male	England (South)	White	25 or over
fiyq.tv.13.php	Interview 18	T19	Yes	Male	England (North)	White	25 or over
fiyq.vf.26.bvt	Interview 19	T20	Yes	Male	England (South)	White	Under 25
fiyq.wm.86.lls	Interview 20	T21	Yes	Male	England (North)	White	Under 25
fiyq.yq.69.xsg	Interview 21	T5	Yes	Female	England (North)	White	25 or over
fiyq.zw.68.vys	Interview 22	T22	Yes	Male	England (North)	Other	Under 25

TABLE 2 Sound bites from the 56 key moments of agency.

#	Transcript	Descriptive tag	Sound bite	Emotional register	Agency described?
1	T1.2	Getting our logins	*you were allowed to go and use the computer systems*	Factual	No
2	T1.5	Delegating tasks	*the juniors go and execute all the ward tasks*	Factual	Yes
3	T2.3	Navigating induction	*it was chaos. It was, it was terrible. [laughs]*	*Shocked, appalled*	*Yes*
4	T2.5	Accepting bad experience	*people don't really care and that, that's just how it is.*	*Disgruntled, indignant, resigned*	*No*
5	T2.7	Saying no	*that will have to wait because I've got more priority things to do over here*	*Powerful, authoritative*	*Yes*
6	T3.2	Accessing IT systems	*it ended up taking me like more than four hours just to fill out the sort of paperwork*	*Frustrated, seeing irony*	*No*
7	T3.7	Seeking support	*[I] didn't really have the chance to debrief or talk to anyone else in my team.*	*Confiding, shocked*	*Yes*
8	T3.8	Understanding contradictory practice	*you'd expect that the rules would be standardised across all the wards*	*Confused, bewildered*	*No*
9	T4.2	Receiving teaching	*We got teaching … so I got specific one to one teaching into common diagnosis*	*Grateful, reverential*	*No*
10	T4.4	Navigating peaks and troughs of responsibility	*And just on those one days, every Thursday from nine till one, you have to … go back to all the kind of medical things you've learned throughout medical school and put it into practice.*	*Confused, frustrated, concerned*	*No*
11	T4.5	Doing our best	*you just gotta do what you can, and call the med reg* [medical registrar] *who might be somewhere in the hospital, who you don't know.*	*Resigned, frustrated, concerned*	*Yes*
12	T5.3	Organising ward tasks	*we have like a list of jobs to do, that we, and then we say, 'Okay, let's start'.*	*Energised, motivated*	*Yes*
13	T5.4	Collaborating on tasks	*we would always … make sure that everything was done in time to go home in time.*	*Excited, proactive, proud*	*Yes*
14	T6.2	Pushing patients away	*it's not necessarily anyone's fault, but everyone's sort of trying to push patients away from them.*	*Resigned, frustrated, shocked*	*No*
15	T6.4	Being exposed as ourselves	*[As] a medical student you can very much hide behind the doctor*	*Strategic, comedic*	*No*
16	T6.6	Happening to us	*there's no sort of communication from where we can raise concerns*	*Frustrated, irritated, sad*	*No*
17	T7.1	Being rota'ed	*you don't actually know where you're going to be on your on-calls*	*Confused, frustrated*	*No*
18	T7.3	Prioritising jobs	*often you'll get like a million kind of jobs to do*	*Practical, descriptive*	*No*
19	T7.4	Having rotation changed	*some of us have been now contacted to say that actually you won't be moving*	*Resigned, disappointed*	*No*
20	T8.7	Supplementing consultant communication	*the consultant just barks at you*	*Annoyed, disappointed, but professional*	*Yes*
21	T8.8	Slowing down consultants	*you learn how to kind of control the consultants a little bit*	*Powerful, accomplished*	*Yes*
22	T8.9	Seeking patient outcomes	*you don't see the end of their hospital journey, you don't know what's happened to them*	*Disappointed, apprehensive*	*Yes*
23	T9.2	Experiencing poor shadowing	*it just felt like the other F1s* [Foundation Year 1 doctors], *the old ones, their heart wasn't in it*	*Disappointed*	*No*
24	T10.1	Knowing how	*so much of this job is actually the logistical know-how*	*Frustrated, shocked*	*No*
25	T10.2	Putting my foot down	*but I didn't know to put my foot down*	*Indignant, frustrated*	*No*

(Continues)

TABLE 2 (Continued)

#	Transcript	Descriptive tag	Sound bite	Emotional register	Agency described?
26	T10.4	Experiencing bureaucracy	*The people up there making the rules don't necessarily know, care or understand what it's like to actually be the doctors working on the wards*	*Distressed, shocked, indignant*	*No*
27	T11.3	Having responsibility taken away	*you get used to all this responsibility … and then you get it all taken away again*	*Frustrated, said with irony*	*No*
28	T11.4	Tailoring to consultants	*I sort of had to adapt how I did the ward round depending on which consultant it was.*	*Powerful, adaptable, strategic*	*Yes*
29	T11.7	Checking back	*you really do think about, 'oh, that was at four o'clock in the morning. Was that right?'*	*Uncertain, concerned, said with irony*	*Yes*
30	T12.2	Feeling defeated	*It just kind of like makes you feel a bit defeated*	*Frustrated, defeated*	*No*
31	T12.5	Collaborating with nurses	*there was a lot less like fuss and erm nobody had a tantrum [laughs].*	*Proactive, critical*	*Yes*
32	T12.6	Taking leadership	*okay well this is as much as we can do without the consultant being here so let's just do this.*	*Uncertain, proactive*	*Yes*
33	T13.3	Deciding not to intervene	*there's a bit of a power dynamic as well because I was like an interim doctor and she was an F1*	*Uncertain, apologetic*	*No*
34	T13.6	Working independently	*It was something that we wanted to do*	*Proactive, confident*	*Yes*
35	T13.7	Being resigned to it	*at least I'm a bit more resigned to it happening*	*Impatient, annoyed, resigned, disappointed*	*No*
36	T14.1	Experiencing an emergency	*I'd never been in a real resus* [resuscitation] *situation before*	*Uncertain, anxious*	*No*
37	T14.2	Wasting their time	*They [consultants]'ve never had to concern themselves with these petty troubles.*	*Frustrated, intimidated*	*No*
38	T14.4	Reading proactively	*So I, prior to starting, read the whole thing and made my own notes*	*Proactive, factual*	*Yes*
39	T14.7	Bearing responsibility	*you're suddenly the on call doctor for two or three wards of patients who you don't know*	*Overwhelmed, confused*	*No*
40	T15.1	Jumping through hoops	*you end up either treating someone not really knowing whether it's the right thing to do*	*Frustrated, concerned, sad*	*No*
41	T15.5	Worrying about safety	*They [registrars and consultants]'d just sort of say, 'well, what can we do?'*	*Frustrated, indignant, fatalistic*	*No*
42	T15.6	Lacking control	*you realise that you don't have that much control over much really*	*Resigned, frustrated, sad*	*No*
43	T16.5	Resigning to the system	*I mean, it's- there's nothing we can do. It's just the system.*	*Resigned, frustrated*	*No*
44	T16.7	Getting told "do it"	*I didn't have the confidence to say I don't think this is necessary*	*Underconfident, anxious, bitter*	*No*
45	T17.1	Doing own ward rounds	*from very early on I was doing my own ward, ward rounds, seeing my own patients*	*Proactive, confident*	*Yes*
46	T17.3	Consulting microbiology	*So I managed to get one of the microbiology registrars to come and review my patient*	*Proactive, energetic*	*Yes*
47	T18.2	Navigating IT systems	*I just had such a particularly bad time with the IT*	*Frustrated, exhausted*	*No*
48	T18.3	Lacking support	*it was quite an unpleasant place to work and we were so poorly managed on the ground it was really intense*	*Annoyed, frustrated, guilty*	*No*

TABLE 2 (Continued)

#	Transcript	Descriptive tag	Sound bite	Emotional register	Agency described?
49	T18.7	Being frustrated by change process	*you know he'd give the impression that he was taking you seriously*	*Frustrated, resigned, helpless*	*No*
50	T19.1	Diagnosing a blood clot	*that was a bit of real medicine.*	*Energised, proud*	*Yes*
51	T19.2	Experiencing a flattened hierarchy	*the phrase like flattened hierarchy wasn't used but it did sort of feel like that*	*Engaged, connected*	*Yes*
52	T19.3	Experiencing growing responsibility	*once you start working it's different, your responsibility is actually to do things in the organisation for people*	*Proud, insightful*	*Yes*
53	T20.2	Receiving help	*they were always very kind to sort of us about when we sort of made little mistakes or things*	*Anxious, uncertain, vulnerable, grateful*	*Yes*
54	T21.3	Working as a team	*I'm speaking to them because well, actually, I need to do something or I need to find something out to treat somebody*	*Proud, embedded*	*Yes*
55	T22.4	Learning the systems	*Getting used to the systems was something [laughs] that was so important*	*Frustrated, realistic*	*No*
56	T22.6	Receiving direction	*having one or two things that make you a valued member of that team can have such a massive difference to everything.*	*Unempowered, undervalued, realistic*	*No*

the discourses was often characterised by frustration or resignation, reflecting the tendency for participants' work context to constrain their agency. There were, though, notable exceptions where seizing opportunities elicited positive emotions. Twenty-three key moments showed how the net effect was to afford agency to participants, and 33 showed how they were constrained. Key moments of affordance typically involved working collaboratively with peers, and the following sections provide examples that may help readers to amplify such activities. The analysis concentrates mainly on key moments that constrained agency, however, since these identify features of workplace environments that could usefully be changed. The genres in which participants typically spoke were of their work as an adventure (exciting because it was difficult and risky) or a tragedy (where suffering or sorrowful events befell the main character). Our critical stance leads us to highlight two key, contrasting aspects of the data, which help us to answer the two Research Questions: first, the stark contrast between participants' *adversarial* responses to difficult interprofessional team dynamics and their *resigned* responses to wider system dynamics; and, second, common situations which either afforded or constrained participants' agency.

> **RQ1.** *How is agency to learn in the context of the work of doctors-in-training in the UK influenced by the constraints and affordances of clinical workplaces?*

The medical hierarchy afforded participants relatively low status and yet members of other health professions often expected them to take a lead, positioning participants anomalously on the bottom rung of a 'prestigious' ladder. Participants gave rich, detailed descriptions of how team dynamics influenced their agency and used engaged, adversarial metaphors to construct these interactions: *pushing, fighting, barking, throwing* and *storming*. Key moment T14.2 shows how, in the absence of middle-grade doctors, questions went unanswered, either because junior staff did not ask them, or helpful answers were not forthcoming. Here the intimidating prospect of approaching senior staff thwarted agency, as did inadequate or absent answers. Agency was reliant on the cooperation of senior staff.

> *When there's no kind of middle grade doctor to ask, you have to ask the consultant these things, which is [pause] seemingly for them, a waste of their time, but it's also quite intimidating and frequently they do not know the answer cos they've never had to concern themselves with these petty troubles*. (T14.2, male, Scotland, 25+).

Similarly, key moment T18.3 shows the negative effect of a lack of concern for a participant's education and wellbeing. The discourse affords the consultant (whose locum status may have reflected a workforce shortage) a position from which they could enable systems to allow staff to take breaks and attend training but did not do so. The participant's agency in personal and professional respects is consequently limited.

> *The consultant was a locum and he wasn't particularly invested in you know my training or opportunities for me to go to even mandatory things, let alone you know opportunities for me to learn or go to conferences […]. And it was quite an unpleasant place to work and we were so poorly managed on the ground it was really intense, there would be days where I wouldn't get breaks*

or there would be days where you felt you know sometimes guilty for going to the toilet [laughs]. (T18.3, male, England, 25+).

Key moment T6.2 describes dysfunctional interactions *between* teams, rather than *within* teams. This participant rails against a situation in which he sees himself as powerless. Rather than 'pushing away' patients being anybody's fault, no individual or team appeared to have agency, including the patient for whom there were potentially significant adverse consequences. Here, optimal patient care was at the mercy of team conflict.

A lot of the time when you're referring to other specialities it can be difficult or when are you referring … when they're waiting for the site team and you want to make a referral that can be difficult, and it becomes frustrating because it's not necessarily anyone's fault, but everyone's sort of trying to push patients away from them. (T6.2, male, Ireland, under 25).

In stark contrast, participants' speech about how the wider healthcare system influenced their agency lacked detail and used 'passive', nebulous metaphors: *filtering*, *drawn out*, *in the ether*. Participants were vague about what or who constituted 'the system'—they authored it as, implicitly, a faceless, nameless entity, located at the organisational, system or national policy level, which was to blame when things went badly. Their dialogue constructed them as disengaged, resigned, powerless to shape the agenda. Key moment T7.4 constructs a participant's limited ability to influence her training, with an impersonal system seeming to determine that. Calls from such a senior leader to a newly qualified doctor are relatively rare, so this identifiable person taking responsibility on behalf of an otherwise faceless organisation mitigated against the loss of agency that might otherwise have been the case. This participant also shows some sympathy with the system and its leadership.

I had a phone call from the Medical Director at my hospital yesterday just to say that I'm going to be redeployed back to Respiratory, so I'm not actually going to go to my next rotation next week, which was, I was very excited to kind of move on and do something else for four months, but I think they obviously are really struggling that they're keeping us Foundation Doctors back. Not all of us but some of us have been now contacted to say that actually you won't be moving. (T7.4, female, England, under 25).

Key moment T16.5 shows how the disabling effect of a poor working environment led a participant to construct leaving medicine as the only way of acting agentically. Although there is ambivalence in her talk ('*I think I'm going to leave medicine*'), putting this option into words conveys the seriousness of her situation and perhaps invites a riposte from her audience to encourage her to stay in medicine.

But it's the way it is [unsupportive working environment]. *I mean, it's- there's nothing we can do. It's just the system. That's why I think I'm gonna leave medicine as soon as I can cos I really don't – I'm really having a terrible time*. (T16.5, female, England, 25+).

RQ2. *By analysing constraints and affordances, what evidence-based priorities for change exist that may increase agency of doctors-in-training?*

Looking first at affordances, despite the formidable barriers presented above, many participants found ways to be agentic, at least at a team level. They used 'double voiced discourse': dialogues with themselves where they re-enacted conversations (e.g. 'Okay, let's start'), questioned themselves or anticipated how others might react. Key moment T5.3 illustrates collective agency, where empowered doctors-in-training collaborated to make a ward run smoothly and maximise learning, which is an approach that could be encouraged elsewhere to increase agency.

So, we made like an agreement between the foundation, the interim foundation doctors in the beginning, we would go into different teams and then rotate so that we get like both teams' experiences … so we would go on the ward round in the morning, we would write the notes, collect all the jobs that we have to do and then after the ward round like sit with the other doctors and make sure that we have like a list of jobs to do, that we, and then we say, 'Okay, let's start'. (T5.3, female, England, 25+).

Key moment T12.5 illustrates how a participant exercised agency by suggesting a change that was adopted as routine practice. Although the speech positions the initiative as successful and the team dynamics as positive, it also constructs an ambiguous position where nurses may feel they are contributing to doctors' work (*'we're happy to give you … to do your ward round'*). Either way, their willingness to try things differently created a positive experience. The hesitant, polite and respectful tone of the speech shows how language mediated the negotiation of agency. The example suggests that cultures and schemes that encourage junior staff to suggest new approaches might enable agency.

So we spoke to the nurse and we said "I think it would be better if one of the nurses who was looking after, who had all the information … if we could have them while we were, while we're doing the ward round and so they do it with us". And so they, they were happy to do that, they agreed, they said "yes if we've got the numbers and we don't need that nurse on the ward then we're happy to give you one of the nurses to do all your, to do your ward round". And so that's what happened today, this morning

> *from what I heard, from my colleagues erm that you know the ward round was a lot quicker, a lot better, there was a nurse with them and so they managed to get, get through it a lot faster and-and-and there was a lot there was a lot less like fuss and erm nobody had a tantrum [laughs]*. (T12.5, female, England, under 25).

There were also constraints, however, and frequent missed opportunities for agency. The analysis identified three main targets for change initiatives that might afford greater agency to doctors-in-training. The first target is induction, where small changes could make big differences to whether doctors-in-training had the agency to start learning and delivering healthcare from day 1, and whether they felt welcomed and valued. Participants often could not access wards or patient information because ID badges and IT logins had not been allocated in time. This prevented them performing key tasks (e.g. looking up blood results, adding to patient notes, prescribing medications) since online systems are essential mediators of medical practice. Key moment T3.2, describes the frustration of not having access to systems and processes underpinning clinical care.

> *It was quite sort of a long winded process cos I didn't really have access to all the systems yet, and it ended up taking me like more than four hours just to fill out the sort of paperwork in terms of their past medical history, their drug history, and all the sort of things, and I had not even seen the patient yet [laughs]*. (T3.2, male, England, under 25).

The second target relates to the varying expectations of doctors-in-training at different times (e.g. day and night, across rotations). They were sometimes overwhelmed by responsibility and, at other times, under-utilised. Key moment T11.3 illustrates a participant's responsibility diminishing abruptly, albeit possibly temporarily, as they moved to a new training setting. In contrast, key moment T14.7 describes a significant step up in volume of work (*two or three wards of patients*), unfamiliarity of patients (*patients who you do not know*) and limited access to support (*you are responsible*). These peaks and troughs of responsibility typically thwarted agency.

> *But – so, you get used to all this responsibility and then - the burden of it all, and you- and then you get it all taken away again*. (T11.3, female, England, under 25).

> *So that's quite easy [pause], until you hit 4 pm and then you're suddenly the on-call doctor for two or three wards of patients who you don't know, and if anything happens with any of them you're responsible*. (T14.7, male, Scotland, 25+).

The final target for change was not knowing what happened to patients whom participants had treated. Updates were hard to access (*I'm sort of searching for it*) but potentially saved time, reduced worry and provided important learning opportunities. In key moment T11.7, the participant initially lacked agency, questioning her own decisions and following up via the online system, but ultimately reported making clinical decisions without undue anxiety.

> *The night shifts kind of counter for that because you really do think about, 'oh, that was at four o'clock in the morning. Was that right?' And I tend - I start - started just writing down the num - the number of the patient so that I can check [chuckles] on the computer when I come back if - what happened and what I - and what – what - if what I did was right. So, that - that aspect has been helpful for learning how to, sort of, deal with the stress of, you know, you're - you're the one making decisions and something you actively do could help or harm the patients*. (T11.7, female, England, under 25).

4 | DISCUSSION

This study aimed to identify priorities for organisational change, by analysing key moments of agency described by doctors-in-training. A key finding was that, when talking about team working, participants gave specific descriptions and used adversarial metaphors, which represented engaging agentically with fellow clinicians in practice. When talking about the wider healthcare system, however, their dialogue was disengaged and resigned to having no agency to shape the agenda. We identified activities affording agency that educators could capitalise on, as well three organisational change priorities that could afford greater agency: improving induction processes, smoothing the peaks and troughs of responsibility, and providing the means for doctors-in-training to have timely feedback on their management and patient progress. In addition, the findings suggest that further work is needed to improve team dynamics and enable doctors-in-training to contribute to policy.

Sociocultural theory provided us with a rigorous approach that, by narrowing the gap between observation and action, responds to van Enk and Regehr's advocacy for use-inspired research.[14] This is reflected in the research questions, the first of which attends to social dynamics affecting practitioners' agency and the second of which prioritises candidate interventions. This is important because earlier research identifying features of workplaces that affect the agency of doctors-in-training has not translated into improved agency. Our dialogical approach goes beyond making passive observations of what is and is not right about the status quo. It identifies dialectic tensions within which possibilities for change exist. This reconciliation of strong theory and strong empirical observation is what Kurt Lewin meant when he said there is nothing so practical as a good theory.[31]

In making sense of our findings, one sociocultural theory, called cultural historical activity theory was particularly helpful. Its concept of contradictions, defined as 'historically accumulating structural tensions within and between activity systems',[32(p137)] helped us to distinguish three main types of tensions. The first was *within* an activity system; for example, tensions associated with an interprofessional

team working towards the common objective of providing care for patients, dividing the labour and following rules. Contradictions arose when the focus on these elements that mediate the activity of patient care shifted attention away from the object of the activity: the patient. These contradictions within the activity of patient care were tangible to doctors-in-training and could potentially be influenced to be more productive than counterproductive. The second type of contradiction was *between* activity systems bounded within a single hospital, such as tussles between clinical teams in a hospital. These were counterproductive because they distracted from the object of patient care by redirecting attention to concerns about workload and professional responsibility.

The third type of contradiction was *across* activity systems that span different institutions and redefine the object of the activity in terms of resourcing, workforce planning and population-level metrics, which were in potential contradiction with individualised patient care. This demonstrates the far-reaching implications of decisions made away from the frontline by NHS leaders and managers and/or politicians for the agency of doctors-in-training. Participants' perceived powerlessness to influence this wider agenda is a cause for concern, as exemplified by one participant considering leaving the medical profession. This closely resembles the observation by Liang and colleagues that sexism could leave female surgeons-in-training with quitting surgical training as their only way of exercising agency.[33] Other authors have demonstrated how even well-intentioned policy decisions taken to assure patient care can have unintended consequence, especially for a demoralised workforce, and can result in patient care getting worse rather than better.[5] Similarly an ethnographic study showed how top-down policy directives could unintentionally deflect practitioners from providing optimal patient care.[34] Research has an important role to play in providing insights into how unintended consequences arise, and how we might learn from them and shape the dynamic workplace context in response, in order to improve the agency of doctors-in-training.

4.1 | Implications for policy and practice

Returning to Billett's[2] observation that learners with greater agency learn more and favourable workplaces optimise agency, we believe that urgent work is now required to provide medical trainees with greater agency, and favourable workplaces, to accelerate learning and optimise patient care. Our findings highlight possibilities to amplify existing positive affordances of agency; for example, when doctors-in-training collaborate positively with peers and suggest process improvements. Clinical supervisors could facilitate this by noticing, suggesting, and endorsing such activities. Socio-cultural theory views contradictions within systems as driving forces to transform activities within organisations for the better, so the three priorities for organisational change identified (improving induction processes, smoothing peaks and troughs of responsibility and providing easy access to patient updates) are 'good bets' for improving the agency of medical trainees. Ensuring that doctors can access the workspaces, facilities and online systems required for work prior to their first day is a 'quick win', enabling them to focus immediately on work and learning. Structuring and sequencing opportunities for increased responsibility for doctors-in-training, and optimising support, will increase agency with potential for long-lasting impact. A menu of opportunities could be created for doctors-in-training who feel underutilised or need extra 'stretch', which could include supporting their peers. Providing easy access to patient updates could improve patient care by providing a longitudinal view of care delivery. It could optimise doctors-in-training's learning by providing valuable feedback based on patient outcomes. Paying further attention to interprofessional team dynamics and collaboration (via organisational strategies such as Learning from Excellence,[35] which aims to identify and recognise excellent practice in healthcare) and providing ways for doctors-in-training to influence the wider policy agenda (e.g. representation on national committees) will also improve agency.

4.2 | Strengths and limitations

The strengths of this study are: its explicit focus on how organisational structures constrain or afford agency; the evidence-based recommendations for change; the rigorous dialogical approach taken to identifying and analysing key moments of agency; the national span of the dataset; the sociocultural theoretical analysis; and the regular meetings and reflexivity of the diverse research team. As with all studies, there are also some limitations. The interviews focussed on doctors' experience of early practice, using prompts derived from sociocultural theory, rather than asking specifically about agency. This is a strength in the sense that the talk is naturalistic and there was less potential to 'lead' interview participants towards socially-desirable answers, but it meant that key moments of agency were identified by researchers rather than research participants themselves. Since this is a qualitative analysis using purposive sampling, with data collection since the COVID-19 pandemic began, our results are not intended to be generalisable to the wider population, although some of the insights and recommendations may be transferrable. We considered transferability throughout the study as part of the reflexive process and are confident that the key findings have relevance beyond COVID-19. Since our participants are drawn from the NHS system, rather than a single organisation (e.g. hospital), the findings will need to be tailored to the specific organisational context before implementation. Finally, since these were one-off interviews, it was not possible to return to participants to clarify our understandings.

4.3 | Future research

Future research could continue to focus on how organisational structures constrain or afford agency, using sociocultural theoretical perspectives and perhaps study designs such as institutional

ethnography. Collaboration between researchers and organisations to introduce the changes recommended by this study and analyse the intended and unintended consequences will be needed, for example using a change laboratory approach.[36] Finally Paulo Freire's work on critical consciousness[37,38] could offer important insights into how we might enable health professionals to act as agents of change.

AUTHOR CONTRIBUTIONS

KM designed the study, led the analysis, wrote the first draft of the paper and led the editing of subsequent iterations (conceptualisation, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, supervision, visualisation, writing—original draft and writing—review and editing). AG designed the study, conducted the interviews, contributed to the analysis and write up, and approved the final manuscript for publication (conceptualisation, data curation, investigation and writing—review and editing). DC designed the study, conducted the interviews, contributed to the analysis and write up, and approved the final manuscript for publication (conceptualisation, data curation, formal analysis, funding acquisition, investigation, methodology and writing—review and editing). NB designed the study, contributed to the analysis and write up, and approved the final manuscript for publication (conceptualisation, formal analysis, funding acquisition, methodology and writing—review and editing). BB designed the study, contributed to the analysis and write up and approved the final manuscript for publication (conceptualisation, data curation, formal analysis, funding acquisition, investigation, methodology, project administration and writing—review and editing). GV designed the study, contributed to the analysis and write up and approved the final manuscript for publication (conceptualisation, formal analysis, funding acquisition, methodology and writing—review and editing). TD designed the study, contributed substantially to the analysis and write up and approved the final manuscript for publication (conceptualisation, formal analysis, funding acquisition, methodology, writing—original draft and writing—review and editing).

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

ETHICS STATEMENT

Research ethics approval was granted following review by the Faculty of Medical Sciences Research Ethics Committee at Newcastle University (ref 1910/2410).

ORCID

Karen Mattick https://orcid.org/0000-0003-1800-773X
Nicola Brennan https://orcid.org/0000-0002-2165-0155
Bryan Burford https://orcid.org/0000-0003-4687-7556

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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