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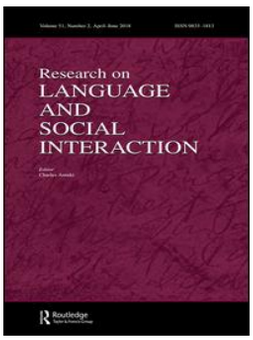

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The Normativity of Medical Tests: Test Ordering as a Routine Activity in "New Problem" Consultations in Secondary Care

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ABSTRACT

How does ordering a test fit into "new problem" medical consultations? Responding to calls for studies of the overall structural organization of consultations beyond primary care, this article depicts the organization of new problem consultations observed in two large neuroscience centers in the UK. This shows that—in addition to Robinson's widely cited four main activities (*establishing the reason for the visit, gathering information, delivering a diagnosis, recommending treatment*)—test ordering is oriented to as an additional, normative activity. We show this numerically (tests were ordered in over 60% of our 65 new problem consultations) and by analyzing how participants orient to the *activity* of test ordering even when neurologists decide against testing. We argue that test ordering is a distinct activity, which, despite being treatment-oriented, displaces treatment in the here and now. Test ordering is thus consequential for progressivity, serving as both bridge and barrier to accomplishing the overarching medical project. Data are in British English.

In his hugely influential paper on the structure of acute, primary care consultations in the United States, Robinson (2003) showed that doctors and patients orient to four core activities: *establishing the reason for the visit, gathering information through verbal and/or physical examination, delivering a diagnosis, and recommending treatment*. Unlike previous attempts to capture or prescribe how the consultation typically does/should progress (notably, Byrne & Long, 1976), Robinson did not conceptualize this structure as a linear set of phases or an ideal type. Rather, he argued that those consultations in which a new medical problem is presented as the reason for the visit are oriented to—by doctors and patients alike—as an "interactional project" with the primary goal of treatment (i.e., addressing the presenting problem). To accomplish this overarching project satisfactorily, doctor and patient must complete the four core activities listed previously. Moreover, each of these is directed toward achieving the next (e.g., information gathering is in the service of producing a diagnosis, which is in the service of making a treatment recommendation). This conceptual shift accounts not only for the recurrent phase-like structure of such consultations but also for often-observed deviations from this. For if either participant deems that one of the activities has not been satisfactorily accomplished, they may hold up progress to the next activity (e.g., from diagnosis to treatment if, say, the patient is concerned the doctor might have missed something) and may revert to earlier activities (e.g., the doctor may initiate further information gathering in response to such a concern) (see Monzoni et al., 2011a, for an illustration in neurology). Progressivity toward the

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goal of the consultation, then, is not a matter of "passing through" stages like so many rooms in a house but rather an actively negotiated interactional accomplishment.

Robinson (2003) was careful to delimit the generalizability of his analytic claims, highlighting the need for further research on the structural organization of other types of medical consultation. A decade later, he noted that:

> The analysis of such supra-sequential coherence has not generally been a central focus of conversation-analytic research, the majority of which has involved a description of the organization of individual sequences of action and their sub-parts … However, as Sacks (1992 [1971a]) argued, the enterprise of analyzing individual sequences of action completely ignores how they are, in some cases, part of larger, coherent matters. (Robinson, 2012, p. 258)

In this article, we take up the challenge to build on Robinson's path-breaking work, presenting findings from a study of neurology outpatient consultations, recorded in two National Health Service (NHS) hospitals in the United Kingdom (UK). In order to retain a good degree of comparability with Robinson's work, we focus here only on *first* neurology consultations, defined—following Robinson—as those cases where the chief reason for the visit (as evident in the consultation itself) was to deal with a *new* medical *problem*. In secondary care in the UK's NHS, no consultation with a specialist is truly a "first" for the patient, insofar as access to specialties like neurology is granted via the General Practitioner (GP). The patient will thus already have undergone the kind of first appointment discussed by Robinson. However, we can apply Robinson's criteria to secondary care to distinguish between appointments that are oriented to as:

(1) firsts (within the secondary care clinic);
(2) follow-ups (e.g., to deliver test results or assess response to treatment); or
(3) review appointments (i.e., routinely scheduled checkups for chronic conditions like multiple sclerosis or epilepsy).

We coded all our consultations as one of these three types. In total, 65 of the 219 consultations (just under 30%) were oriented to by the neurologist and patient as a first, or akin to a first, appointment; see "Data and Method" section for more details. These form the data set analyzed for this article. For these first appointments, we found that Robinson's (2003) four key activities held. But we also identified an important additional activity: *test ordering*. Robinson did note that test ordering may occur in primary care. In a footnote, he specified that he was using the term "treatment" as a shorthand for either "technical treatment or … physicians' recommendations of treatment-oriented future action(s), such as referrals to specialists or the acquisition of further diagnostic tests (e.g., x-rays, blood/urine test, etc.)" (p. 31). His justification is logical: that the doctor's task is a practical one—to take action to solve the patient's problem—and, hence, the "treatment" activity may be broadened to include other decisions about what *to do* next. We concur. Nevertheless, our data set indicates that neurologists and patients do not orient to test ordering as an *equivalent, alternative* activity to recommending treatment. Rather, test ordering is, we argue, a normative activity in its own right.

In this article, we provide an array of evidence to demonstrate this normativity. Based on our analysis, we present a model of the overall structural organization of new problem neurology consultations, which incorporates the key activities identified by Robinson (2003) in new consultations in primary care, and includes a new "loop" wherein tests are ordered. Our analysis shows how this loop is *both* "treatment-oriented" (in the longer term) *and* a displacement of treatment (in the here and now). Thus, we argue, test ordering may be understood as both bridge and barrier to the accomplishment of the overarching project of the consultation (i.e., successfully resolving the patient's complaint).

Data and method

This article arose out of a study of "patient choice" funded by the UK's National Institute for Health Research. Data—consisting primarily of 219 recorded, naturally occurring consultations—were

collected in the outpatient departments of two large neuroscience centers in 2012 (in Glasgow and Sheffield). Clinicians opted in to the study, giving written consent. Patients who were due to see a consenting neurologist were sent an information sheet at least 48 hours before their appointment. On arrival at the clinic, eligible patients (those over 16 and able to consent in English) were invited to discuss the study with a research assistant, who took written consent. In total, 66% of patients approached agreed to take part. Participants could opt for audio or video recording. Ethical approval was granted by the NRES Committee for Yorkshire & the Humber (South Yorkshire) on October 11, 2011. We were subsequently granted clearance for additional analysts in our research team by the Proportionate Review Sub-committee of the NRES Committee North West (Greater Manchester South) on July 20, 2015.

Overall, 14 neurologists (seven at each site), 223 patients (114 in Glasgow, 109 in Sheffield), and 114 accompanying others (63 and 51 respectively) agreed to participate. Four consultations were excluded because the patient withdrew or the recording failed, leaving 219 recordings for analysis. Our primary approach was conversation analysis (CA), which is widely recognized as the leading methodology for investigating how doctor-patient interaction functions in real-time practice (Heritage & Maynard, 2006). For the wider study, we identified all instances of decision making about current treatments, tests, and referrals and examined how the decision-making process was initiated, pursued, and concluded across the data set (see Reuber et al., 2018, 2015).

We coded all consultations as "firsts," "follow-ups," or "reviews," focusing here on "firsts." This distinction was often clear-cut, with first consultations—following a GP referral—occurring with patients who had never seen a neurologist or had previously attended for another concern. However, we included all consultations that were *oriented to as* firsts. For example, patients referred by another secondary care practitioner (e.g., a consultant or nurse specialist) for a second opinion or highly specialized advice were routinely asked by the neurologist to tell their story "as if for the first time." We also included cases with patients who were already being monitored for a chronic condition, but only if they presented their concern as something (potentially) new and thus in need of fresh diagnosis. This approach allowed us to identify those consultations that were most comparable to Robinson's (2003) original set of primary care consultations where the chief reason for the visit (as evident in the consultation itself) was to deal with a new medical problem.

Test ordering as a normative activity

Tests were ordered in 63% of our first neurology consultations (41/65; 24 in Glasgow, 17 in Sheffield): In 35, the neurologist ordered the tests directly; in four, they were ordered indirectly (via the patient's GP or referral to another clinic); and in two, they were to be ordered, subject to the neurologist establishing whether they had already been carried out. On a purely numerical basis then, test ordering was the norm in these consultations. This activity was typically positioned either in between the diagnosis delivery and discussion of treatment (i.e., Robinson's activities 3 and 4) or interwoven with one or both of these in some way (e.g., diagnostic uncertainty may be given as an account for recommending a test, the need for which may account for not providing immediate treatment).

Extract 1a shows a clear example, in which we see all three activities: *diagnosis delivery* (gray shading, lines 4–18) → *test recommendation* (boldface, lines 19–30) → *treatment recommendation*, including a recommendation against immediate treatment (gray shading, lines 32–36) and consideration of future options (gray shading, lines 36–40, 53–59, 75–76). This patient had previously received a diagnosis of Chronic Inflammatory Demyelinating Polyneuropathy (CIDP), following investigations conducted 10 years before. He has been referred to this neurologist for the first time due to current symptoms. The neurologist solicits his full illness story and conducts a verbal and physical examination. We join the consultation immediately after the latter, with a marked shift to a new activity at line 1 (Gardner, 2001).

Extract 1a (S09002[1])

```
01 NEU:  .hh Oka:::y, ((puts down pen))
02       (0.4)
03 PAT:  M[mh
04 NEU:    [So:: (0.6) examining you:: (0.5) >you know< the majority
05       of your nervous system: is: normal.
06       (0.2)
07 PAT:  Mm hm,
08 NEU:  So:: that- that's very reassuring, <Y'r reflexes are present,
09       .hh u::m they're really: (0.5) (>not much to) find in< the
10       le:gs. .HH[H In the ar::ms: I- I can see that there is a
11 PAT:            [Mm hm,
12 NEU:  little bit of: um: .tch loss of strength: .hh [e::r
13 PAT:                                                 [Mm hm,
14 NEU:  (0.7) (er) you know you've still got contro:l over them
15       but I can see (where-)(with) the problems that you're
16       having.=
17 PAT:  =Y[ea:h.
18 NEU:    [.hhhhh U::m (0.4) .tch (0.4) I think it- it is mi:::ld:,
19       e:::r .hh I think what I would like to do::, i:s:: (0.7)
20       pull your ol- your old notes:::.
21 PATt: M[hm.
22 NEU:   [I will repeat the electrical te:sts:: a[s- .hh it
23 PAT?                                           [(°°Mm°°)
24 NEU:  (w'll/w'ld) be usefu:l to compa:re
         [ho:w they are no:w (0.2) to how they were five yea:rs
25 PAT:  [((starts upward movement for nod, which is produced on 'now' and the second 'how'))
26 NEU:  >agosand that will give us an indication of- .hh
27       (0.3) you know is this something that's progre:ssing:,
28       .hh (0.4) er- [e::r you know [er- or no:t:. [U::m .tchhh
29 PAT:                [((nods))      [Mmh           [Yeah. ((with nod))
30 NEU:  so I think an (interval) EMG (w'll/w'ld) be very useful.
31       (0.2)
32 NEU:  .tchhhh (0.6) I'm not going to rush in and start any: er
33       treatments toda::y,
34 PAT:  N[o.
35 NEU:    [E::r because I don't think there is any- (0.2) a nee:d to
36       rush [in with anything. .hh I: think (0.1) the discussion:
37 PAT:       [Mm:.
38 NEU:  over: (0.3) .tch whether to have any treatment or not (0.9)
39       rea:lly is along the lines of what you've had before with
40       Dr ((name)).
41       (0.1)
42 PAT:  Mm hm,
```

((Neurologist explains patient's condition further as a basis for explaining the treatment options))

```
53 NEU:  .hh U::m (1.2) .tch the treatment would be: to:: suppress
54       that extra immu:ne (0.3) er- er#:# immu::ne response going
55       on in your- in your body, .hh with (.) immunosuppressant
56       tablets, .hh and the- the- (0.7) the simplest form of them
57       is steroi:ds, [.hh and they have the problems: u:m (0.2)
```

[1]Transcript labels include the following information: the study site ("G" for Glasgow, "S" for Sheffield); a three-digit patient number; a two-digit clinician number.

58 PAT: [Mm hm,
59 NEU: which you've already: talked about with >other< doctors.=
60 PAT: =Yeah.

((consider option of steroids at a low dose balanced against the risk of the patient's heart and cholesterol problems))

75 NEU: There are other optio:ns:¿ (.) e::r(m) .tch which we can
76 consider, .hh >But I< think I:'d want: (0.9) definite
77 evidence o::f: (0.7) a progressive disea::se.
78 PAT: Yea:h.

Following delivery of largely good diagnostic news (Maynard, 2003) at lines 4–18, the neurologist considers what to do about the patient's condition, a shift in activity that he announces at line 19, as a preface to two practical actions: obtaining the patient's old notes (line 20) and repeating the electrical tests (lines 22–30). Thus far, testing has taken the place of treatment with respect to the question of what to do—just as we would expect, based on Robinson's (2003) model of the structural organization of acute first visits in primary care. However, what occurs next is common in our data set: The neurologist also considers treatment. The test recommendation is thus sandwiched between the diagnosis delivery and the treatment discussion (see boldface and gray shading for the "sandwich"). In some cases, the boundaries between the three activities were less distinct, often because the diagnosis delivery was made less explicitly with significant diagnostic uncertainty indexed instead. However, the key point is that test ordering is routinely oriented to as an activity *distinct from* treatment with treatment options being raised for preliminary discussion even when they cannot yet be decided upon—precisely because they depend on the test results.

It was common for tests to be presented as offering greater diagnostic certainty than the clinical examination alone (as in Extract 1a, "I'd want definite evidence of a progressive disease," lines 76–77) and as a sensible precursor to making a treatment decision ("I'm not going to rush in and start any treatments today," lines 32–33). Test ordering is thus positioned as being *in the service of* the overarching project of the consultation: to address the patient's presenting complaint through the successful accomplishment of the core activities of medicine (diagnosis and treatment). It is then a (potential) "stepping stone" to treatment rather than an equivalent, alternative activity.

As we show next, the normativity of testing in first neurology consultations is evident not only in tests being ordered but also in what occurs when they are not. In more than half of the latter (15/24), we found explicit orientations to the *activity* of test ordering, even though no (further) testing was to be done. This occurred in two main ways: The neurologist either (a) overtly discounted the relevance of testing, justifying the decision not to test; or (b) offered tests despite indicating that they were not thought to be medically necessary. The relevance of test ordering was also raised in a third way: by the accompanying other. We demonstrate these orientations to the *activity* of test ordering in the following first three sections. We then present our remaining nine cases, which might be considered deviant in that they contain neither test ordering nor accounts for not testing. Drawing our analyses together, we present—in our final analytic section—a model of the overall structural organization of first consultations in neurology.

Accounting for not ordering tests

Testing was sometimes explicitly discounted by the neurologist, either because relevant tests had been done previously or because the neurologist considered the diagnosis to be (sufficiently) clear on the basis of examination alone. In talking through such rationales, the neurologists treated themselves as accountable to patients for *not* ordering tests. Such accounts were sometimes elaborate and could be tied to the treatment recommendation. For instance, the neurologist in Extract 2 has concluded—partly on the basis of prior investigations by another doctor, partly following verbal examination just

conducted (data not shown)—that the patient's primary problem is the interpersonal effect of his snoring (he keeps his wife awake). The neurologist has thus recommended a device to try to reduce the snoring. In so doing, he implicitly rejects the need to search further for an underlying cause.

We join the consultation as the neurologist draws his extensive treatment recommendation to a close (lines 1–5), favoring a personalized version of the device obtainable from a dentist rather than "do-it-yourself" versions available on the Internet. Latched to this is a recommendation against further testing. The neurologist does extensive work to justify this, centered on his view that a hospital-based sleep study would be unlikely to provide useful diagnostic data (lines 5–9). In so doing, he is not only accounting for the "negative" decision (not to test) but also for the validity of recommending a low-tech treatment ("without getting fancy," line 5—and elsewhere he outlines, but does not recommend, more hi-tech options). Moreover, he provides extensive reassurance that the lack of further testing is diagnostically legitimate (lines 30–43) and that testing remains possible in future (lines 45–47, 49–51, 53).

Extract 2 (S06503)

```
01  NEU:  I would go (and) see the dentist [first  [then.
02  PAT:                                   [Yeah. [°(Yeah. Yeah. °)
03        (1.5)
04  NEU:  Um: (0.2) but I think #I:# that's how I would um play
05        this (0.3) (#er#) without (.) getting fancy.=I- I think
06        if I did a sleep study no::w (0.5) I'm not so sure that
07        it would tell me an awful lot: (.) that you didn't already
08        kno:w=and it MAy actually tell you (0.6) that you don't
09        >sleep very well in< hospital.
```

((Neurologist provides extensive justification for this last point))

```
30  NEU:  Um:: (0.1) so:: (0.7) people that struggle to slee:p:
31        (0.3) generally I don't bring into hospital.
32        (0.6)
33  NEU:  U:m: because it does- doesn't rea::lly help us very much.
34        .HHH IF I thought you had a:: (.) a breathing disorder
35        that hadn't been recognised before=or you- you were
36        restless: .hhh in a way that you didn't kno::w (0.3)
37  PAT:  °°Mm°°
38  NEU:  u::m (0.6) i.e. (.) we'll assume that- (0.3) you know:
39        nothing about this problem=(where we will) BAsically
40        just investigate tuh- hope that we get a hi::nt:
41        .hhh (at=uh) as to (w-) wha:t is going on, then
42        that's a useful thing to investigate for with a
43        sleep study.
44        (1.0)
45  NEU:  Um (0.3) but I think there are other avenues
46        we can pursue fir::st=an' it's prob'ly better
47        to do tha[t, and then leave the sleep study
48  PAT:            [(Yeah)
49  NEU:  ((clears throat)) as an even fu:rther= deeper
50        safety net to say 'well we can always (0.4) go
51        to that if[:
52  PAT:             [No=fair enough, [yeah
53  NEU:                              [If ultim[ately we need to'
54  PAT:                                       [.HHH I- I sh-
55        should perhaps me:ntion… ((explains the visit was largely instigated by his wife))
```

Extract 2 is one of the most elaborate accounts for not testing in our data set. It makes clearly visible the norm for testing in that the neurologist treats himself as accountable for not ordering a test even when he has provided an extensive treatment recommendation—i.e., he has, potentially, accomplished the overarching project of the consultation (addressing the patient's primary concern—snoring). The extract also makes visible the neurologist's orientation to the patient's potential expectations regarding testing—e.g., in the justification for not doing a sleep study (lines 5–9, 30–33), his efforts to "educate" the patient on when such a study might be useful (lines 34–43), and his handling of the potential risk in not testing (lines 45–47, 49–51, 53). This implies an assumption that the patient might consider testing to be the normative next step.

Tracking back through the consultation, we see that the possibility of further testing has been "in the air" since the opening. The patient has been referred by another specialist, who, as the neurologist puts it, has "had a go at you and not been able to find a reason behind your sleeping problems"—despite undertaking "various tests." The referral, then, is positioned as *diagnosis*-oriented. In explaining his role, the neurologist acknowledges that other physicians may sometimes "miss the respiratory problems because their investigations aren't sensitive enough," thereby implying that he may be able to provide more specialized tests. Moreover, although he offers a diagnostic conclusion, this is heavily hedged, leaving open the possibility that more "sensitive" testing might still reveal something: "from what I've read and from what you've told me today I don't think there is a primary sleep disorder going on here." Finally, although the patient, throughout the consultation, aligns with the neurologist's view that he is unlikely to have a serious underlying condition, he produces less than enthusiastic uptake of the treatment plan (data not shown). This, together with the ongoing diagnostic uncertainty, provides a good interactional basis for the extensive accounting in Extract 2.

However, explicit discounting of test ordering was not limited to cases where the patient might be deemed in need of "persuasion" or where there were prior orientations to testing as expected. More commonly, accounting occurred as if it were an afterthought, tacked on after the neurologist was already moving to close. Extracts 3 and 4 show examples. In both, the diagnosis and treatment activities have been handled to the apparent satisfaction of both parties, and the recommendation against testing occurs only after the neurologists have summarized the plan to be put in writing to each patient's GP, who will be responsible for providing prescriptions for the agreed treatments (Extract 3, lines 1–23; Extract 4, lines 1–10). In both, the neurologists invoke future activities (seeing a nurse specialist and the GP), a typical move toward closure (Robinson, 2001). Nevertheless, they both delay moving to close, adding a pronouncement (see Stivers et al., 2017) against testing (see boldfaced lines 30 and 18–19 respectively).

Extract 3 (G03404)

```
01  NEU:  >Okay,< well that's what we'll do. .HHH I'LL write a
02        letter to your doctor.
03        (0.3)
04  NEU:  Okay?
05        (0.2)
06  NEU:  And I'll jus:t (0.2) say what I've just said to=you.
07        (.)
08  PAT:  (°Yea[h°)
09  NEU:        [I'll- (0.6) make some suggestions as to how the
10        doctor would be (0.6) >introducin' the new drug and
11        withdrawin' the< old one¿
12        (0.1)
13  PAT:  (°Mm°)
14        (0.1)
```

15 NEU: You'll Sta:y on your Epilim as is,
16 PAT: (#Mm#) .hhA::[ye.
17 NEU: [Okay?
18 (0.7)
19 NEU: E:::rm .HH and you'll come back and see an epilepsy
20 nurse specialist: in: about four months' time,
21 (0.6)
22 PAT: .hh So [I'll get a letter to (.) come back [here.
23 NEU: [Okay? [That's correct.

((Neurologist confirms address))

27 NEU: It'll come to that address:.
28 (0.2)
29 PAT: Okay.=
30 NEU: **=Okay, you wouldn't need any te:st::s (0.2) particularly,**
31 **(I think) that's been done, so we (uh) (.) >we're kinda**
32 **okay< with that.**
33 (0.5)
34 PAT: Mm=A:ye nae problem,

Extract 4 (G01001)

01 NEU: U:::m (0.4) an:d (0.5) we'll see: make these changes to
02 your medication and see will that help.=S[o: I'll write
03 PAT: [Right.
04 NEU: to your GP:¿
05 (0.3)
06 PAT: (Alr[ight)
07 NEU: [And ask your GP to prescri:be this drug.
08 (0.5)
09 NEU: E::r an:d: if you see your GP in about ten days
10 to two weeks they can prescribe it for you¿
11 (0.2)
12 PAT: Right.=So: I make an appointment to see him two weeks
13 from no:w,=
14 NEU: =Yes please.
15 (0.2)
16 PAT: Okay=that's fine.
17 (0.1)
18 NEU: **A::nd e:r (0.2) (I'm not-) (0.1) >I don't think we need**
19 **to do any< specialised te:sts.=I'm not concerned there's**
20 **any SErious cause for these headaches¿**
21 PAT: Right.

In contrast to Extract 2, there is no evidence in either of the consultations from which Extracts 3 and 4 are taken that the patients have particular reasons to expect tests. Although newly referred to this neurologist, the patient in Extract 3 has been experiencing seizures for over 20 years, which the neurologist treats as already established as epilepsy. Moreover, neurologist and patient explicitly align in seeing the consultation as treatment- rather than diagnosis-oriented, the aim being to gain better seizure control. Similarly, the patient in Extract 4 presents his headaches (for the first time to this neurologist) as ongoing since childhood and appears to be primarily seeking a better treatment—something the neurologist aligns with immediately after history taking: "but it looks like neither of them ((current treatments)) are working terribly well … I think we need to think about something else." Furthermore, he reaches a specific diagnostic conclusion ("this is really what we call a chronic

daily headache rather than a migraine as such . . . "), and the patient indicates that he thinks "it's just one of these things. It runs in the family," implying he's not concerned about some underlying condition. Neither consultation includes the diagnostic uncertainty seen in Extract 2 then or reluctance to accept the treatment recommendations.

Thus, in contrast to Extract 2, the accounts in Extracts 3 and 4 do not appear to be handling matters *intrinsic* to the consultation. This probably explains their relatively minimal design. There is one important difference between the latter two accounts: While the neurologist in Extract 3 (like in Extract 2) can rely on previous testing to justify the current "negative" decision, this is not so in Extract 4. This may be the reason for his explicit reassurance that he's "not concerned there's any serious cause for these headaches" (lines 19–20). Nonetheless, produced after a move toward closing, both Extracts 3 and 4 come off as a "last-minute" effort to justify a decision that has thus far been made without any discussion. This suggests an orientation, by the neurologists, to a generic patient expectation for tests when referred into secondary care—one that they address even in the absence of an apparent basis, *within the prior interaction*, for doing so. In the Conclusions section, we consider a possible origin and functions of this orientation in neurology specifically.

Offering tests that are treated as not medically indicated

In a few cases, there was evidence that the neurologist did not consider testing to be medically necessary but offered a test nevertheless. Prior to Extract 5, the neurologist has delivered a diagnosis, explaining that the physical examination was normal and that the patient's symptoms are "very typical of migraine" (data not shown). Before going on to discuss treatment options—the standard next medical activity (Robinson, 2003)—he offers a scan (lines 1–6), using an "if-then" format (see Landmark et al., 2017) that makes the patient's possible need for reassurance explicit (lines 1, 4, 6). Like the account for not testing in Extract 2, the offer is responsive to an earlier discussion: The patient has revealed that the facial numbness accompanying some of his migraines has made him worry about multiple sclerosis. Thus, the offer is sensitive to the patient's orientation to diagnosis as a primary reason for this visit. At the same time, as Landmark et al. show, the format constrains the decision by casting testing as dependent on an extreme position: being "very worried" (line 1). This is compounded by the neurologist's claim not to be "worried" (line 8), further implying that he doesn't consider the test medically necessary and shifting the responsibility for the decision even more firmly into the patient's domain. Unsurprisingly, the patient declines the offer (lines 13–14).

Extract 5 (G02802)

```
01  NEU:  So- (0.3) I think- (0.3) if you are- (.) very worrie:d,
02        (0.2)
03  PATt:  =Mhm[:
04  NEU:       [then fo:r (0.5) sake of re:assuran[ce, we] could
05  PAT:                                          [M h  m]
06  NEU:  do a sca::[n.
07  PAT:           [Okay:,=[(yeah)
08  NEU:                   [E::r (.) I'm not worried:,
09        (0.4)
10  PAT:  >Okay<
11  NEU:  Oka:y?
12        (0.2)
13  PAT:  In that case I: >I think it's probably not worth< doing
14        the sca::n.
15  NEU:  Oka:y.
```

Offers like that in Extract 5 perform a similar function to the accounts for not testing in Extracts 3 and 4. All three justify the decision on the grounds that (further) tests aren't necessary; implicitly, this serves to counter any suspicion that the neurologist may have simply not considered some more sinister diagnosis. However, the offer format officially hands the decision to the patient. This exposes an assumption that patients might wish to undergo testing (see Curl, 2006) and makes it easier for them to get the test than the pronouncements in Extracts 3 and 4 do (since these treat the decision as made—see Reuber et al., 2018). Moreover, while the accounts in Extracts 3 and 4 were positioned just prior to closure, the offer in Extract 5 is done in the same place as many of the medically endorsed recommendations *for* testing: sandwiched between the diagnostic announcement and the treatment recommendation (see Extract 1a). Like those recommendations, the offer to test—if accepted—has the potential to extend the diagnostic activity and to serve as a basis for any post-test treatment recommendation, a point we return to in our final analytic section.

Initiation of the test-ordering activity by an accompanying other

Overt requests for a test have been found to be rare in health-care interactions, most likely reflecting a largely tacit understanding that the decision to test lies in the doctor's domain of expertise (Gill et al., 2001). Our data set was no exception. The only explicit question about whether a test was needed—see Extract 6—was produced by an accompanying other on behalf of the patient (her sister). Not only is it (arguably) less delicate to ask such a question on someone else's behalf, the sister demonstrates medical knowledge throughout the consultation, later describing herself as working "in paediatrics." This may partly account for her initiation of the test-ordering activity at line 3. By this point in the consultation, the neurologist has delivered a diagnosis of epilepsy with high certainty: "The big one ((i.e., seizure)) would be very hard to explain on any other basis and, frankly, the small ones are pretty difficult to explain on any other basis too. . . . I don't really think there's any doubt about it." He has also strongly recommended treatment, which is accepted by the patient (data not shown).

The extract starts at the end of a discussion about how long one has to be seizure-free to drive (which the patient appears to be evaluating at line 1). In contrast to the cases considered so far, we see no *initiation* of the test-ordering activity by the neurologist. Rather, he produces an account for not ordering a test in *response* to the sister's question (line 3), using the extreme case formulation (Pomerantz, 1986) "wouldn't help us at all" (line 11). The patient herself first explains why this might be so (lines 7–8, 10, 12–15), based on discussion with another consultant. Following this, in overlap with a pursuit of testing by the sister (lines 16–17), the neurologist accounts for not ordering an EEG on diagnostic grounds (lines 18–19 and 26–27), which the sister supports on the basis that the test result would not affect treatment (line 21). Both show their orientation to testing as done in the service of the overarching project (addressing the patient's complaint).

Extract 6 (G08804)

```
01  PAT:       [(°Nighmare°)
02  NEU:   .hhh [E::r
03  OTH:       [And does she need an EEG:.
04         (0.8)
05  NEU:   N:o.
06         (0.2)
07  PAT:   There's nothing to indica:te (0.3) mm: .hh the
08         co[nsultants       >when I was had my<
09  NEU:     [(°Mm wouldn't-°)
10  PAT:   [s c a: n (s) sai:d]
11  NEU:   [Wouldn't help us here at] a:ll I don't [think.
12  PAT:                                          [No::.=
13         'cos if there's not- unless it's within: (.) recent- very
```

```
14        soon after the seiz're- <initial seizure, there's no: (.)
15       [evidence that you'd see (anything-)    ]
16  OTH: [And it doesn't cla:ssify the           ]
17        epileps[y ↑syndrome or anything,       ]
18  NEU:          [(I don't-) and if YOU HAD a nor]mal EEG it wouldn't
19        change my diagnosis [at a:ll.
20  PAT:                      [Mm:.
21  OTH:                      [You would still be tr[eating.
22  NEU:                                            [Mmhhuhh
23        (0.1)
24  OTH:  Ye[a:h
25  PAT:     [Oh [ri::ght.
26  NEU:         [Fifty percent of people (0.1) with epilepsy have
27        normal EEGs.
```

((Neurologist clarifies that the result will always be abnormal if the EEG is conducted during a seizure, but this can be difficult to accomplish))

As this example shows, in the absence of a neurologist-initiated account for not ordering a test, one may be elicited. Although rare, this reveals that it is not only the neurologist who may orient to the relevance of test ordering in first consultations.

Deviant cases: The question of diagnostic certainty

Thus far, we've focused on the normativity of test ordering as a distinct activity. So what about our nine cases in which tests were neither ordered nor explicitly ruled out? One (G06804) was a boundary case: No tests were ordered, but the neurologist planned to monitor the patient's seizure frequency before deciding on treatment, so this was akin to testing. A second case (G11204) was handled through referral to another specialism (psychiatry) since the neurologist decided that the complaint was not neurological. Next, we explore the remaining seven cases.

Four of these included strikingly definitive diagnostic statements claiming certainty about the patient's complaint. These were sometimes produced as "plain assertions" (Peräkylä, 1998), straightforwardly naming the diagnosis, as in Extracts 7 and 8. In other cases, there were other markers of certainty, such as the extreme case formulation (Pomerantz, 1986) in Extract 9 and the bald claim that the patient does indeed have the type of headaches that would have been easily diagnosed in the absence of a prior "bleed" (Extract 10, lines 11 and 15).

Extract 7 (S01606)

```
NEU:  .hhh you're ri:ght: (0.1) these are migraines.
```

Extract 8 (G08004)

```
NEU:  I mean it's what you think it is=it's a faint:.
```

Extract 9 (G07804)

```
NEI:  You know I don't think there's any mystery about this at all.
```

Extract 10 (S09906)

```
01  NEU:  and then afterwards ((after a bleed, which the patient
02        has had)) (0.4) they get lef:t with symptom:s that
```

```
03        sou:nd (1.1) absolu:tely classically (0.4) li:ke a
04        cluster headache or a mi:graine.=
05  PAT:  =Mhm,=
06  NEU:  >That if< they hadn't had the blee:d (0.3) you:'d
07        have said (0.2) that's what that is.
08        (0.8)
09  PAT:  Yea::h.
10        (0.2)
11  NEU:  And that's [what you've got.
12  PAT:              [°Yeah°.
13        (0.3)
14  PAT:  Y[eah
15  NEU:   [>That's what this is<.
```

The fifth consultation included, there and then, successful treatment for a condition diagnosed as benign paroxysmal vertigo—much to the patient's delight: "it's amazing that" (S00501). Thus, we would argue, the certainty of the diagnosis in these five cases, as expressed by the neurologist, serves as an *implicit* account for not ordering any tests.

Reassurance that nothing has been overlooked—which we've seen handled more explicitly through accounts for not testing and offers to test for the sake of reassurance—is thus provided, implicitly, through the diagnosis delivery.

The remaining two cases (S09806 and S03306) are very similar to each other. Both involve a referral to the same neurologist for help in handling chronic headaches, which may be explained by a previous neurological condition. These are our most markedly deviant cases in that they contain neither a definitive diagnostic statement nor an account for not ordering tests. Extract 11a shows, for example, a far more speculative diagnosis. Compare the neurologist's plain assertion in Extract 7—"these are migraines"—with the formulation "I wonder whether … " at line 21.

Extract 11a (S09806)

```
01  NEU: .HHH Um: (0.8) I: suspe::ct this is(n't)=well this isn't
02        simple,=it's not easy, you've got: (1.1) changes in your
03        head, you had a: (0.4) ((turning pages of notes)) a: #a#
04        degree of: (1.0) hydrocephalus: u::m (0.5) that had actually
05        probably been there for a lo::ng long ti:me.
```

((Patient agrees, citing previous experience in support))

```
09  NEU:  YOU:::r (0.8) ACtually your headaches that you've described
10        for many yea::rs (1.0) >sound like migraine<.
11        (2.0) ((Patient gazing directly at neurologist))
```

((Neurologist explains how the episodic nature of the patient's symptoms doesn't fit with a headache caused by hydrocephalus))

```
21  NEU:  And so I wonder whether actually what you're describing now
22        is: is a form of: (1.2) MIgrainous headache:.
23        (0.6)
24  NEU:  and that's what these episodic seve::re bad episodes are
25        that you're having,=you're having severe migraine.
26  PAT:  Mhm,
```

Like in many cases in our collection—again indicating the normativity of testing—the patients in both of our deviant cases have undergone previous neurological testing; indeed, the diagnosis

of hydrocephalus (line 4) cannot have been made without a scan. Thus, the neurologist may well be relying on the results in his decision making. However, in neither case does he make this explicit with respect to the current headaches or spontaneously provide other forms of reassurance that there is no underlying cause. Although neither patient initiates the test-ordering activity (as the sister does in Extract 6), both pursue greater diagnostic certainty through explicit questions.

This can be seen in the final few minutes of the consultation from which Extract 11a was taken, shown as Extract 11b. Here we see—like in Extracts 3 and 4—the neurologist moving to close (lines 1–5). In contrast to Extracts 3 and 4, he makes no mention of (further) testing. Instead, the patient (line 15–16) and her partner (lines 25–27) seek further diagnostic explanation. Notably, it's only at this prompting that the neurologist orients to the concern that there might be an "underlying organic problem" (line 55). Relying on previous tests, he suggests that this is unlikely to be causing the patient's memory problems (lines 44–47, 51, 55). Notably, however, he still does not account for not undertaking further investigations.

Extract 11b (S09806)

```
01  NEU:  °So you're (using) five milligrams°. ((amending patient's
02        notes)) .hhh But: (0.5) it's >cut the Tramadol out, cut the
03        Paracetamol out,< (0.1) we'll s::- try a tiny dose of
04        Topiramate and I'll see you in >three or four months' time
05        and we'll see how it's done<.
06        (0.2)
07  PAT:  [Mm:
08  NEU:  [.HHH A[nd whether it's knocked the number of da:ys you
09  PAT:        [Mhm
10  NEU:  have these very severe exacerbations down.
11        (2.3) ((Patient nods))
12  NEU:  £No guarantees:, (0.1) [but we can >give it a go<.
13  PAT:                         [SO::: e-
14        (0.2)
15  PAT:  mm- well- is this anything to do:: hh. (0.2) with
16        that [the:n ((gestures towards front and side of head suggest she's checking if the
headache is related to her other condition, but it's unclear)).
17  NEU:       [Yes:
18        [that's all part of the same thing.
19  PAT:  [(Right)
20        (.)
21  PAT:  Oh ri::ght. hh.
22        (0.6)
23  NEU:  [°All part of exactly the same thing°.
24  OTH:  [(Mm)
25  OTH:  And (1.2) I> mean< we've got to ask the question. (0.3)
26        e::r (1.0) with regards to: (0.3) your short-term memory
27        =would this headache have anything to do with that, or:
28  NEU:  It dis- it's a dis- it's distra:cting,
29        (0.4)
30  NEU:  u:m .hh and short-term memory issues are usually due to
31        distraction.
```

((Patient mentions seeing another doctor and neurologist says he's got the report, which he appears to be reading))

```
44  NEU:  It's all essentially normal. Which kind of suggests that
45        actually it's probably more distraction,
46        (0.5)
47  NEU:  your short-term memory >[problem<.
48  PAT:                          [Yeah.
49        (0.2)
50  OTH:  M[m:.
51  NEU:    [From: (0.5) this:.
52        (0.9)
53  OTH:  Mm:.
54        (0.3)
55  NEU:  [Rather than an (or-) underlying organic problem.
56  PAT:  [(Mm)
```

Although it is impossible to claim any causal connection with so few cases, our two markedly deviant cases contrast clearly with Extract 4. In that case, the patient is also diagnosed with headaches, for which the neurologist is unable to provide a definitive explanation. However, there is no equivalent pursuit of diagnostic information, with the patient instead accepting the neurologist's self-initiated account for not ordering tests. We would suggest then that our deviant case analysis may indicate that accounting for not ordering tests can be an *effective* way to reassure patients—in the absence of a definitive diagnosis—that the neurologist hasn't missed some underlying concern. This warrants further research.

Mapping out the structural organization of first consultations in neurology: Tests as both barrier and bridge to accomplishing the consultation's project

We have offered strong evidence for the normativity of test ordering in first neurology consultations. In 41/65 of our cases, tests were ordered. In a further 15, tests were not ordered, but the matter of testing was addressed. Thus, in 86% of our cases (56/65), the *activity* of test ordering was initiated (with one exception, by the neurologist). We would argue that first neurology consultations exhibit a structural organization that—while similar to Robinson's (2003) primary care-based model—includes an additional loop: test ordering. Figure 1 illustrates this organization. Accounts for not ordering tests, while common, were not routinely handled in the same sequential location; we have thus shown how these accounts may occur in connection with, or after, either the diagnosis or treatment activities.

Crucially, Figure 1 captures test ordering as an *additional* activity when compared with typical first consultations in primary care. Our argument is that test ordering should not be understood as merely another decision—equivalent to treatment decision making—about what to do next. This is evident in our finding that neurologists regularly initiate all three activities (diagnosis delivery, test ordering, and discussion of treatment), even when treatment decision making is construed as dependent on the outcome of the test. At least in UK neurology, where tests are usually done on another day and the results delivered at another follow-up consultation, the treatment activity can only be (more fully) accomplished in the future. There is, thus, a tension inherent in test ordering as accomplished in our collection: It is both "treatment oriented" (in the longer term) and a displacement of treatment (in the here and now). In that sense, test ordering may be understood as simultaneously a bridge and barrier to the accomplishment of the overarching project of the current consultation.

This dual orientation is well captured in one patient's reference to "get[ting] the ball rolling again" (Extract 1b, line 107), which indicates both a sense of progressivity toward a goal and the notion of the test as only a first step. This excerpt comes later in the consultation shown in

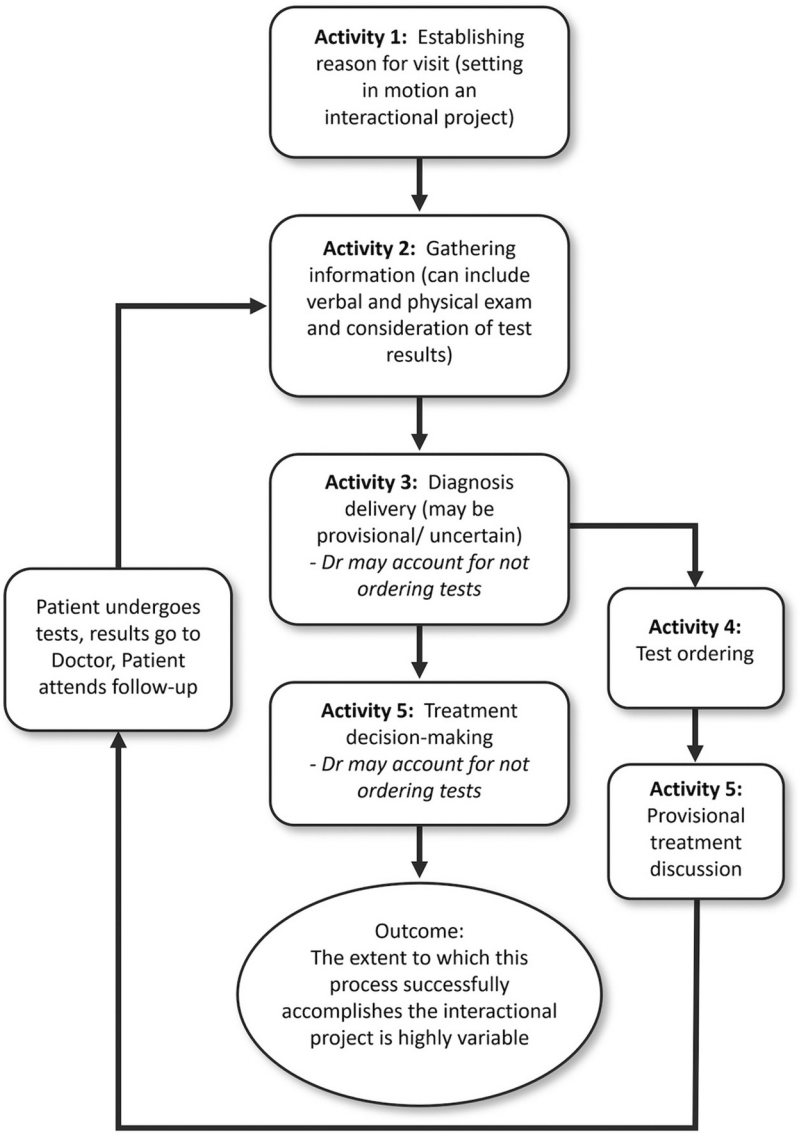

Figure 1. A schematic diagram illustrating how test ordering fits into a new problem medical consultation.

Extract 1a. In Extract 1b, the neurologist orients to the possibility that the patient might have expected a more immediate treatment plan (lines 99–105). The patient's use of the minimizing "just" (line 107) further indicates that the proposed actions fall short of accomplishing the overarching project of addressing his presenting complaint. Following a gentle tease, contrasting this patient's positive assessment of the test recommendation with the more usual view (line 115–116, 118, 120), the neurologist shifts to serious (Schegloff, 2001). In so doing, he too orients to the test as being *in the service of* (clarifying the) diagnosis (lines 124–125) and, by implication, providing a basis for making the treatment decision already outlined (see also Extract 1a).

Extract 1b (S09002)

```
99  NEU:  I certainly don't want to rush into anything: #e:r# and
100       I want to get these tests done and look at your old notes.
101       .hh [Did you: have a: preference about how things would go
102  PAT:     [Yeah.
103  NEU:  toda::y or- or-
104  PAT:  .H[HHH
105  NEU:     [I mean what you wanted to do::,
106       (0.3)
107  PAT:  No- I'm just glad to get the ball rolling again. T[o-
108  NEU:                                                  [Yeh.
109  PAT:  to be >honest (with)< that- that- that was:: the main
110       thing: u::m (1.2) .tch e::r an:d that- that's:: that's
111       fi::ne you know (that I went)/(that havin') (0.6) what-
112       what you:'ve discussed about having the elec- (0.3) trical
113       tests again, (then/that-) that- that'd- (0.2) would be
114       goo:d, (0.1) but- .hhh you kno::w, I- [I'm
115  NEU:                                       [(>People)< don't
116       normally describe it as: e::r HHH.
117  PAT:  (I [l(h)-)    [Hh. H h e e he heh                  [.HHH
118  NEU:     [A(h)s suh [s(h)ometh(h)ing good to ha(h)pp(h)en [.HHH
119  PAT:  Huh huh [(y(h)eah)
120  NEU:          [.HHH Y(h)ou enjo:yed them¿
121  PAT:  .HHh They [were o:kay,
122  NEU:            [NO: I know what you mean.=
123  PAT:  =Yea[:h.
124  NEU:      [(And) it gives us an- an indication of what's going on
125       [(doesn't it).
126  PAT:  [Yea:h.
```

In other cases, the tension between tests as bridge and barrier was more troubling for the patient. In Extract 12, the patient accepts the neurologist's recommendation to do yet more tests (recommendation not shown in full) but with a turn that subtly implies she's granting something less than ideal: "No that's fine" (line 9). This patient has had "episodes" for approximately three years for which she has been treated, by another doctor, with antiepileptic drugs. The referral to the present neurologist was occasioned by some of her seizures "getting worse," and the neurologist recommends continuing treatment (lines 1–2). However, his recommendation to test is positioned as a necessary *precursor* to making any new treatment decisions (see lines 4–7). For now, he is not offering a solution to the "flare up" of her "attacks." The patient's response at line 9 thus handles the duality of this recommendation: There is a way forward on offer, but it will not provide immediate relief. Despite her acceptance, she initiates talk about the impact on her everyday life (lines 11–12), implying that the decision to test is problematic: She will need to continue feeling as if she "cannot do anything anymore" (line 12), at least for as long as the test and follow-up take.

Extract 12 (G10205)

```
01  NEU:  .HHH U::m .t so I think I'd want to keep you on (0.4)
02        a bit 'a cover,
03        (0.2)
04  NEU:  .hh But at the same ti:me, if we're gonnu: keep on
05        chasing these episodes an: (1.4) changing treatment on
06        the basis of them, I want to know what's happenin' to the
07        brainwaves during °th'm°¿
08        (0.3)
```

09 PAT: **No: that's fine.=**
10 NEU: =Okay,
11 PAT: **.tchh I'm just worried:, (°abou-°) (°uh°)m (1.0)**
12 **I [>feel as if [I< cannae do anything anymo:re. h[heh.**
13 NEU: [What- [What- [Right.
14 (0.3)
15 NEU: Oka[y,
16 PAT: **[It's really upsetting me.**

In dealing with the patient's "worry" (not shown), the neurologist recognizes the implicit request for a solution and positions the test more explicitly as a bridge to treatment: "I think the most important thing about these is getting to the bottom of them … 'cos once you get to the bottom of them we know what we're going to do with the medication."

Figure 1 has thus been developed not merely to reflect our finding *that* neurologists initiated test recommendations in more than 60% of the first consultations in our data set but to capture something of the tension outlined previously. This is shown through the depiction of test ordering as setting up an additional "loop" in the journey toward a (possible) solution. This loop may occur once, leading to a treatment decision at the follow-up appointment. However, patients may go through this cycle repeatedly, leaving the project ongoing but disrupted, sometimes for substantial periods.

We have also—by adding a final "outcome" point to the diagram (Figure 1)—made an explicit distinction between the *interactional activities* conducted in the consultation and the *possible outcomes* that could arise from these. This is for four reasons. First, the promise of tests (as a bridge to treatment) is not always fulfilled (e.g., if it turns out the condition is incurable). In such cases, treatment decision making, as an interactional activity, will occur, but treatment provision, as an outcome, will not. Second, diagnostic certainty may sometimes be the main goal of testing, rather than treatment (e.g., ensuring that it's "just" a migraine). Third, the participants' goals may differ—e.g., if the neurologist considers a psychological diagnosis to be likely, tests may be recommended with the aim of supporting this view, while the patient may be seeking antiepileptic treatment (Monzoni et al., 2011b; Robson & Lian, 2016; Toerien and Jackson, 2019). Fourth, anecdotal evidence indicates that neurologists may order tests to keep patients with chronic conditions "ticking along," often in the interests of concluding a consultation in a state of agreement to do *some*thing, when (meaningful) treatment options are unavailable. Although more likely in review appointments, this can occur in first appointments when a referral has been made to a new neurologist when the patient is already long-term ill. Thus, tests may be ordered for reasons other than "pure" diagnostic uncertainty, and the outcome may not be the successful resolution of the patient's complaint (see Watson et al., 2017). Figure 1 captures this complexity.

Conclusions

Responding to Robinson's (2003) call for studies of the overall structural organization of health-care interactions beyond primary care, this article has provided evidence for the normativity of a fifth activity—test ordering—in addition to the four activities Robinson identified. We have shown this numerically and by analyzing how participants orient to the *activity* of test ordering even when neurologists decide against (further) tests. We have provided a model of the structural organization of new consultations in neurology, incorporating the additional "loop" created by test ordering (Figure 1). We argue that this captures how testing, despite being treatment-oriented, displaces treatment in the here and now. Our model also draws an important distinction between diagnosis and treatment as *activities* within a consultation and the *outcomes* of that consultation (or a series thereof), which may not result in the successful resolution of the patient's concerns.

This matters for our understanding of progressivity in two ways. First, our analysis suggests that progressivity is not necessarily a binary concept (the consultation progresses or not). Rather, activities like test ordering can be *both* a barrier and bridge to progressivity: Test ordering can simultaneously halt immediate progress toward accomplishing the overarching project and offer hope of future evidence on which to base effective treatment. Thus, just as Robinson (2003) argued, test ordering is an active form of "doing something" to address the patient's trouble. However, this "something" should be not understood as an alternative, equivalent activity to treatment. Rather, it is a distinct, *additional* activity, which can be experienced as burdensome by patients struggling to cope with their symptoms, often over an extended period. Thus—and this is our second point—our model highlights the need, sometimes, to look beyond a single consultation to understand the accomplishment of the overarching medical project. For practical reasons, many of us continue to work with collections of one-off interactions. Likewise, we do not have consecutive appointments for any single patient in our data set. However, because we have first, follow-up, and review appointments, we have begun to see how a decision to test (as opposed to treat) can have an impact on later interactions, sometimes delivering diagnostic certainty as a basis for treatment decisions but sometimes failing to do so. Longitudinal studies recording "chains" of medical interactions should be a priority for future conversation analytic work.

Our findings also have implications for understanding the exercise of medical authority, aligning closely with Peräkylä's (1998) influential analysis of diagnosis delivery in Finnish primary care. Peräkylä showed that clinicians typically use "plain assertions"—"It is X"—only when the evidence is readily accessible to the patient (e.g., a visible x-ray or just-completed physical exam). Thus, even when clinicians fail to refer to the evidence, they still show themselves to be accountable to the patient for "the evidential basis of the diagnosis" (p. 301). We have shown that, overwhelmingly, neurologists also orient to the *production* of such evidence as an accountable matter. Almost without exception, they only failed to address the relevance of test ordering when they construed the diagnosis as clear-cut.

More typically, as we have shown, neurologists treated themselves as accountable for their decisions not to test. Although sometimes such accounts addressed patient expectations evident in the consultation, neurologists seemed to be orienting also to a *generic* understanding that patients expect tests when referred into secondary care. Why might neurologists assume this? Anecdotally, we know that trainee neurologists may be taught by their mentors to ask themselves—for any new case—both "what test are you going to do?" and "what treatment are you going to prescribe?" At the same time, they are trained formally in diagnostic guidelines, some of which discourage further investigations (e.g., for simple faints or typical episodic migraine symptoms) where lists of symptoms are considered sufficiently diagnostic and tests carry the risk of identifying incidental (and potentially misleading) findings. Balancing these expectations may involve complex decision making that largely goes unreported to the patient. Articulating—however minimally—the basis for deciding against testing makes some of this available in the interaction, potentially managing patient expectations for tests (see Heritage & Stivers, 1999; Hudak et al., 2011 for other practices for managing patient expectations).

Although speculative, our data suggest that this may often be done in an effort to reassure the patient (although it's worth noting that the neurologist on our research team reports sometimes doing this to reassure himself—a possibility that we can't pursue using CA alone). Given that neurology is, as a specialty, concerned with parts of the body—the brain and nervous system—that cannot be directly observed without specialist equipment, verbal and physical examination in the clinic can only go so far in producing diagnostic evidence. Reassuring the patient that nothing has been missed is thus arguably a generic issue in neurology, which becomes prominent if the neurologist has reached a (relatively) benign diagnostic conclusion without ordering tests. Prior tests may be mobilized to offer this reassurance (as in Extracts 2 and 3), as well as the possibility of future tests as a "safety net" (Extract 2). Where prior tests have not been done, neurologists may do reassurance more explicitly (e.g., asserting their own lack of "concern" or "worry" as in Extracts 4 and 5) and sometimes offering a test that is not deemed medically necessary.

In our two markedly deviant cases, in the absence of diagnostic certainty and an account for not testing, the patients pursued greater certainty themselves, implying some residual concerns that something might have been missed. In practical terms, our analysis suggests that neurologists might better reassure patients if they account for the decision not to test. This seems likely to be relevant to any context where the diagnostic evidence is not directly observable in the clinic.

From a more theoretical perspective, our findings make visible an implicit understanding that tests are more trustworthy than a purely clinical assessment (see Watson et al., 2017). Clinicians rely on this assumption—e.g., by positioning a test as the only way to make a definitive diagnosis (Toerien and Jackson, 2019) or ordering tests to be "sure" of something they strongly suspect. Orientations to *not* ordering tests as an *accountable* activity indicate that, while clinicians are accorded the epistemic right to draw diagnostic conclusions from the test results, it is the test that is constructed as the "all-seeing eye," able to peer into the brain and reveal hidden nerve damage. Diagnostically, the test can trump the clinician as the authority on what ails the patient.

Compared with treatment decisions, there has been minimal work on how decisions to test, and the subsequent results, are handled by clinicians in real-time interactions with patients.[2] The present article not only begins to address this imbalance but demonstrates the normativity of testing in UK secondary care. Given evidence that test-ordering rates have significantly increased in UK primary care over the period 2000–2015 (O'Sullivan et al., 2018), our flow diagram (Figure 1) may well become applicable in that context too. We hope that our analysis inspires further work on this important medical activity.

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[2]Notable exceptions include conversation analytic studies on genetic testing (e.g., Pilnick, 2008), diagnosis of learning disabilities (e.g., Maynard, 1989), and testing for autism (e.g., Maynard & Turowetz, 2017).

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