Engendering response: professional gesture and the assessment of eyesight in optometry consultations

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ENGENDERING RESPONSE:

PROFESSIONAL GESTURE AND THE ASSESSMENT OF EYESIGHT IN OPTOMETRY CONSULTATIONS

Abstract

Many of the procedures undertaken within healthcare require specialised forms of participation from patients. These procedures can transform patients' everyday experience and demand unusual forms of engagement. The task for the practitioner is to manage the demands of the test in a way that enables and engenders an appropriate response from the patient. This paper analyses these issues in relation to the practical accomplishment of a highly specialised procedure in optometry. The subjective refraction test requires the optometrist to engender a patient response that articulates without apparent reflection a distinction between alternate vision conditions brought about by placing lenses in front of the eye. We describe how the lens placement gestures of the optometrist establish the test environment and shape its interaction. The coupling of this gesture with a test question utterance projects and secures patient participation and cooperation. The findings of the analysis have consequences for our understanding of the operation of non-symbolic interaction, the role of gesture in workplace activity and professional practice in healthcare.

Introduction

Many of the procedures that are undertaken within healthcare require unusual or specialised forms of participation from patients or clients. Even relatively unobtrusive procedures conducted, for example, during a physical examination may be unfamiliar and embarrassing and more complex investigations may subject patients to discomfort, even pain, and demand forms of engagement that can prove demanding and difficult (see for example Emerson 1973, Frankel 1984, Heath 2006). The long standing interest within the social sciences in the operation of healthcare has often drawn our attention towards the ways in which professional practice relies upon a properly socialised and competent patient who is able and committed to cooperating with the requirements of specialised procedures and treatment programmes (Henderson 1935, Parsons 1951) and there is a rich ethnographic tradition that addresses the ways in which occupational cultures emerge in and through the interaction that arises between members of the profession and their clientele (Hughes 1958, Strauss et al. 1964, Freidson 1974). However, notwithstanding the burgeoning corpus of studies of talk and interaction in healthcare (e.g., Drew and Heritage 1982, Heath 1986, Heritage and Maynard 2006), the deployment of specialised procedures and in particular the ways in which patients and clients are encouraged and enabled to participate in a highly specific fashion, remains neglected. Despite this, how patients or clients participate is often critical to the success and outcome of the procedure.

Certain sorts of procedure require significant transformation in the ways in which we might ordinarily experience and react to certain stimuli or actions. For instance, during a physical examination, percussion involves successive taps on the chest and the back, during which the patient is required to withhold response whilst simultaneously rendering the body accessible to the practitioner. Other procedures may demand some kind of response from the patient, but the validity of the test is dependent upon this response being free or independent of

consideration or reflection. For instance the knee tap in detecting tendonitis is designed to engender an immediate physical response rather than a reasoned reaction, just as during hearing tests we are required to respond to particular sounds or noises by immediately pressing a button without reflection on what we have heard. With these and other procedures, we appear to be touching on an issue that has long been of interest to the social sciences: the distinction between action and behaviour, or between reaction through interpretation and unwitting response. Blumer (1969), in his discussion of the philosophy of G.H. Mead exemplifies these debates when he draws the distinction between non-symbolic interaction and symbolic interaction:

> "In non-symbolic interaction human beings respond directly to one another's gestures or actions; in symbolic interaction they interpret each other's gestures and act on the basis of the meaning yielded by interpretation. An unwitting response to the tone of another's voice illustrates non-symbolic interaction. Interpreting, the shaking of a fist signifying that a person is preparing to attack illustrates symbolic interaction...Symbolic interaction involves interpretation, or ascertaining the meaning of the actions or remarks of the other person as to how he is to act."
>
> Blumer (1969: 65-66)

For symbolic interactionism and the wide-ranging tradition of ethnographic research that emerged in the light of the work of E.C. Hughes and others (see for example Roth 1963, Becker 1964, Strauss et al. 1964) that has made such an important contribution to understanding of healthcare, the focus on meaning, interpretation and the construction of action is of profound importance. Less attention however has been paid to the distinction between reaction and response, and how this distinction, the distinction between symbolic and non-symbolic interaction, may be oriented to in the production of particular activities.

How unwitting response, rather than reasoned reaction, is configured by participants within the application of a technical procedure for assessing eyesight forms the concern of the following essay. We focus on the collaborative production of the subjective refraction test in optometry and examine the ways in which optometrists configure how clients or patients respond to a particular lens and thereby establish a measurable assessment of vision and its precise shortcomings.

OPTOMETRIC PRACTICE

Fig 1: Optometric practice involves the examination of vision and eye health using a variety of tools and technologies.

Optometry is a form of healthcare practice which provides checks of a patient's vision and eye health. In the UK most patients (or clients) undergo optometric examinations at commercial community optician practices, attending for regular appointments on either an NHS or private basis. Examinations consist of a series of checks conducted by an optometrist and these checks employ a variety of test equipment and technologies in order to produce a prescription for corrective lenses alongside the identification of any eye health difficulties. Each check in the examination confers specific clinical requirements concerning its conduct, for instance in terms of spatial relationships in the consultation room and the deployment of equipment, in addition to the delivery of questions from the optometrist and the production of answers by the patient. They are frequently designed to transform the patient's ordinary experience of seeing: vision in one eye may be occluded, or lenses used to create a deliberately blurred view. This transformation sets up an unusual, and often demanding, form

of participation for the patient, a sense which is heightened through the equally rare occurrence of another coming close to and moving objects towards the eye. Optometry is therefore precisely the kind of healthcare setting noted at the start of this paper, requiring specialised forms of participation and thereby reliant on an appropriately socialised and competent patient.

As part of a video-based project on the practical accomplishment of optometry consultations, our attention was drawn to one particular examination check. This test not only transforms the patient's experience of seeing and confers specific requirements regarding his/her participation; it also relies on a non-considered patient response to produce a valid result. This test is known as the subjective refraction.

Subjective refraction

Subjective refraction assesses the focusing of light on the eyes and helps determine the properties of any corrective lenses to be prescribed to the patient. It can be conducted using different types of equipment (including some automated technologies), but in the vast majority of cases in our data - a collection of over 60 video recorded consultations in seven different optician practices - it involves the patient wearing a set of trial glasses frames, as seen in figure 2.

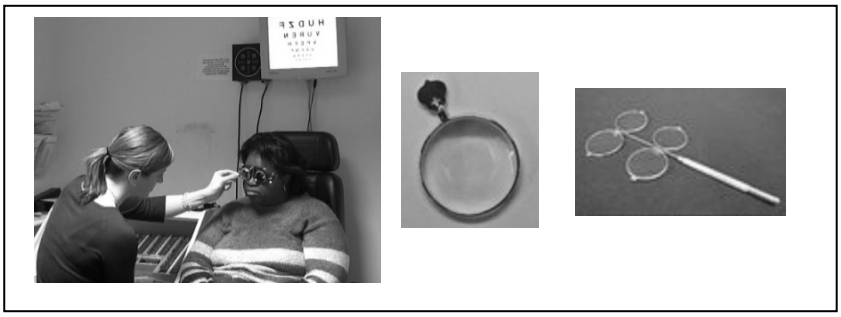


Figure 2: the patient wears a trial glasses frame and the optometrist brings a lens in front of the eye being tested. Different types of lenses may be used – such as single or multiple lenses.

The optometrist inserts the lenses of any current prescription into the trial frame, occludes one eye and then directs the patient to look at a target. During the first part of the test this target is usually rows of letters on a chart, which the patient may also be asked to read out. The optometrist then brings another lens in front of the eye being tested and asks questions about changes in the quality of the patient's vision. The spoken interaction involves sequences of questions and answers, as we can see in fragment 1a. This has been transcribed using the Jefferson notation system (1984) and shows the first part of a typical subjective refraction test: We join the fragment as the patient finishes reading out a series of letters on the chart and indicates that he has difficulties in reading the last row. The optometrist then places a lens in front of his right eye and asks the patient to report whether it results in his vision being 'better, worse, or just the same'. The patient answers the question and the optometrist moves on to a different lens.

Fragment 1a

1.	Pat:	eff yuu en ee: vee
2.	Opt:	Goo:d.
3.		(0.5)
4.	Pat:	The las:::t tuh
5.	Opt:	A [little bit hazy.
6.	Pat:	[three
7.	Pat:	Yea:h.
8.		(0.2)
9.	Opt:	Is that better? Worse, or just the sa[me?
10.	Pat:	[Is
11.		be:tter
12.		(0.2)
13.	Opt:	.hhhh A::nd, is this one better? worse=

14. Pat: =Wor[se
15. Opt: [or just °the same.°

The aim of subjective refraction is not to assess *what* the patient can see in and of itself, but to enable and encourage the patient to compare alternative vision conditions – at the start of the test (as in fragment 1a) the comparison is typically between seeing with a lens and without it, and later in the test between two different lenses. The optometrist will use a variety of lenses over the course of the subjective refraction and each one needs to be held in place, centred over the eye, for a period of time to allow the eye to adjust to it and enable the patient to experience the alternative test conditions before answering the test question. For the patient, the introduction of each new lens creates a change in vision, perhaps making it sharper or blurred. The accompanying question from the optometrist necessitates the production of an answer articulating a vision comparison. In this environment there is a clinical preference for this answer to be delivered immediately, since it suggests that the patient is responding spontaneously and without reflection to the new lens rather than thinking about what to say. For the optometrist therefore, it is critical to encourage and engender a test answer from the patient that is both enabled by an effective placement of the lens and that also genuinely displays the patient's unreasoned response to a sudden change in vision.

Placing the lens

There is long-standing and highly varied tradition of research on gesture and in recent years we have witnessed a growing corpus of studies that has examined the interactional organisation of gesture and its interdependencies with talk (see for instance Kendon 2001, McNeil 2001, Streeck, Goodwin and LeBaron 2011). In different ways the principal focus of research on gesture has understandably addressed its communicative contribution rather than

explored the ways in which it features within practical, physical or bodily tasks. Indeed, there are distinct research traditions that examine the physiological, cognitive and social features of task production in particular within the workplace (see for instance Card, Moran and Newell 1983). It is recognised however that specialised tasks have to be accomplished with regard to the practicalities and contingencies that arise in the course of its accomplishment, not least of which are the real time contributions of others. In healthcare, these tasks may well require the cooperation of patients or clients, and the physical production of the task may need to communicate its requirements in the course of its production, and here we might well find gesture featuring in the very way that a technical activity is accomplished.

In our analysis we are interested in how the various clinical demands of the subjective refraction test are managed in practice; that is, how the joint participation of optometrist and patient enables the patient to receive a lens in front of his/her eye and answer a test question by articulating a vision comparison and preferably doing so through a response that displays an absence of consideration. We observe that a crucial role in this test management is played by the production of a simple gesture: the placement of a lens over the patient's eye. This small movement might be easily overlooked but plays a key role in securing patient cooperation and conveying details of the forthcoming test, thereby establishing the test environment and shaping the interaction between optometrist and patient. Our analysis begins with consideration of this gesture.

Consider the following series of images (Figure 3) taken from a different examination. The patient is wearing trial frames and is sitting looking towards the letter chart. The optometrist has just picked up a single lens (see figure 2), which she holds at its base using her thumb and index finger. The seating positions of the optometrist and patient leave a degree to space between them so the optometrist is required to stretch out her arm in order to reach the patient's eye with the lens.

Figure 3: The progress of the lens towards patient's eye.

Her arm initially moves both forwards and upwards so that the lens travels to a position that is in front of the patient and slightly above her head. It then travels downwards and stops at a point in line with, but in front of, the patient's eye and the trial frame. This all occurs in a single movement, forming a distinct arc shape. The completion of the arc provides the point at which the lens arrives in front of the trial frame. In a separate movement it is then moved forward and pressed directly onto the trial frame. Throughout this gesture the optometrist keeps the three fingers not holding the lens curled into her hand. Consequently once the lens is in place these fingers do not touch the patient's face.

We find a similar method of lens placement in the fragment we briefly considered at the beginning of the paper (see figure 4). Once again, the optometrist holds the lens using her thumb and forefinger, curls her remaining three fingers into the palm of her hand, and produces a movement in the form of an arc to place the lens directly in front of the patient's eye.

Figure 4: Placing the lens

The shape of the lens placement gesture shown in these two fragments is observed across our data corpus of over 60 consultations in seven different optician practices, involving various optometrists, and numerous patients. There are some slight differences, relating for instance to the type of lens being used and the hand in which the lens is held, but in each case the lens travels a further distance than necessary and comes above the eye then downwards to some extent. The gestures through which the lens is brought in front of the eye have a stylised, exaggerated quality. They do not travel directly to the patient's eye and while the movement may not be fully visible to the patient, its articulation would appear to almost animate, render noticeable and project the action that is about to be produced. This quality is enhanced by the speed of the gesture, which is performed much more slowly than many of the 'setting up' movements that precede it - helping the patient put on trial frames, picking up lenses and so on. This stylisation provides one means through which the production of the gesture attends to and configures the task at hand: by displaying that it is performing a specific activity relevant and important to the consultation. Furthermore, moving the lens above the eye and then downwards avoids the lens or the optometrist's hand colliding with the trial frame and enables the optometrist to centre the lens over the eye accurately. It also ensures that the optometrist's hand does not cross the patient's eye line and thereby avoids any interruption in vision that might diminish the patient's ability to perform the test. The extra distance travelled provides time for the patient to prepare for the arrival of the lens and the upcoming test, thus discouraging what would appear to be an instinctive reaction to move away from the lens as it approaches the eye. The patient herself collaborates in the

construction of the test environment by maintaining her gaze at the chart and not attending to the optometrist's movements in any way, indicating her preparedness for the onset of the test. Finally, the physical distance between optometrist and patient allows some 'personal space', maintaining the impersonal nature of the encounter and enabling the patient to conduct the test without feeling restricted.

Rather than simply deploying one technical requirement of the subjective refraction, the gesture through which a lens is placed in front of the patient's eye plays a key role in establishing the test environment and securing patient cooperation for the task ahead. The performance of the gesture is conducted in a way that displays that a test is about to take place and establishes a relevant environment by simultaneously attending to both clinical and inter-personal requirements. It is a communicative action that displays to the patient necessary features of his/her cooperation and also, in fragments 1 and 2, secures it. Examination of this gesture thereby begins our understanding of the accomplishment of the specialised forms of participation conferred by the subjective refraction test. We can take this understanding further when we consider the utterances that accompany the gesture.

THE COUPLING OF LENS PLACEMENT AND GESTURE

Let's return to our first fragment. Fragment 1b shows the same sequence, with video still images illustrating key moments in the interaction. This enables us to consider how the placement of the lens is co-produced with the optometrist's test question.

Fragment 1b

1. Pat: eff yuu en ee: vee
2. Opt: Goo:d.
3. (0.5)
4. Pat: The las:::t tuh →

5. Opt: A [little bit ha:zy. →

6. Pat: [three
7. Pat: Yea:h.→

8. (0.2)

↑ ↑

9. Opt: Is that <u>be</u>tter? Worse, or just the sa[me?

10. Pat: [Is

11. <u>be:</u>tter

12. (0.2)

13. Opt: .hhhh A::nd, is this one <u>be</u>tter? worse=

14. Pat: =Wor[se

15. Opt: [or just °the same.°

As the patient expresses his inability to read from the chart in line 4, the optometrist picks up the test lens and begins moving it towards him, initiating the lens placement. During lines 5 to 8 her hand travels in the arc shape illustrated above, travelling above the eye and then downwards whilst moving towards the patient. The lens then arrives at the eye as the optometrist delivers the test question in line 9, 'Is that better? worse or just the same?' Specifically it arrives in line with but in front of the trial frame on 'that' at the beginning of the question and is then pressed into place as the optometrist says 'better'. So, the lens is first

referred to (‘that’) at the point when it arrives and its role is specified (through the naming of one of the alternative conditions -‘better’) when it is moved into position. The coupling of lens movement and test question in this way emphasises their relation to each other and their joint relevance to the accomplishment of the test.

The lens is then held in place as the optometrist delivers the remainder of the question, which names the other vision conditions - ‘worse, or just the same?’ The time taken for the optometrist to deliver the question provides time for the patient’s eye to adjust to the new lens – as clinically required. The completion of the question then provides an interactional opportunity for the patient to answer this question and this opportunity is produced where the patient is clinically able to give an answer. This close coupling of gesture and utterance ensures that the patient becomes able to respond in interactional terms at the same time he does so in clinical ones. It enables the patient to answer immediately after the optometrist’s question and thereby encourages an immediate response. Indeed in line 10 the patient begins his response in partial overlap with the completion of the optometrist’s question.

The coupling of lens placement and utterance configures and enables the appropriate form of response from the patient. The test question establishes the form the answer should take and the timing of the gesture provides the patient with the opportunity to respond precisely as he is clinically able to do so. This coupling also occurs with different kinds of test question. In fragment 2 the optometrist’s question incorporates the removal of the lens.

Fragment 2

1. Opt: Is it clearer d’you thi:nk?

↓ ↓

2. with that lens in front?

↓

3. (0.3)

4. Opt: Is it the same?

5. (0.3)

↑

6. Opt: or better without:

As the fragment begins the optometrist has directed the patient to look at the letter chart and has picked up a lens, which she is holding in front of her. She begins the test question in line 1 and moves the lens as she speaks. The lens travels in the arc shape shown in figure 3 and is slightly above the patient's head as she completes the first part of her question: 'Is it clearer d'you think'. The lens moves down in front of the eye to complete the arc on 'with that' and is then moved closer to be positioned against the trial frame on 'lens'.

As in the previous fragment, the lens is referred to as it arrives in front of the patient's eye and this coupling emphasises the relevance of both the lens and question to the test. As the gesture begins during the test question, rather than before it as in fragment 1, there is a possibility that the lens might be referred to before it arrives, disrupting the coupling. However the 'do you think' near the start of the question serves to fill out the utterance, delaying the reference to 'with this lens in front'. This delay takes up time whilst the lens is being moved into position so that the eventual reference to the lens is made as it arrives on the eye.

The lens is held in place during the remainder of the first part of the question in line 2, a 0.3 second silence in line 3 and the next part of the question in line 4, 'Is it the same?'. It is then removed in line 5 just before the optometrist names the final test condition 'or better without'. Once again this coupling of gesture and question provides time for the patient's eye to adapt to each vision condition in a way that also promotes an immediate response. The lens has been held in place before the completion of two named alternatives, 'clearer...just the same' and is removed before the optometrist says 'better without' so that the patient has time to experience this final alternative before the end of the question. The completion of the question projects an interactional space for the patient to give her answer and since she has

experienced all these vision conditions by the time the questions ends, she is clinically able to answer the question at the first opportunity she is also interactionally able to do so.

The coupling of lens placement gesture and test question delivery is an intricate organisation that attends to technical features of the test, projects the type of participation required of the patient and enables its production. The accomplishment of this coupling is thereby a central means through which the specialised task of subjective refraction is achieved. The coupling configures and projects both how and when the patient answers the test question in the context of this specialised healthcare task, including the delivery of a test question response without a period of prior reflection. Within this coupling, the utterance is designed to attend to the movement of the lens. The 'do you think' in line 1 of fragment 2 attends to the trajectory of the lens placement to ensure that it is not referred to before it arrives. In addition the removal of the lens in line 5 occurs before the 'without' condition is named. A further feature of the optometrist's gesture is that it enables this removal to occur efficiently. The way the optometrist holds the lens between, finger and thumb at the end of an out-stretched arm, allows her to remove it quickly and without any part of her body crossing the patient's eye line and possibly disrupting her vision. As the video stills in fragment 2 indicate, the optometrist does not take the lens away completely or return it to its original position at her desk; instead she holds it at the side of the patient's head. This places it in a kind of 'test ready' position that displays repositioning it is a possibility so the lens may or may not be used again. In removing and holding the lens in this particular way, the optometrist establishes further features of the test and displays its possible contingencies. In fact, as we discuss next, the lens is frequently reintroduced when difficulties occur during subjective refraction.

DEALING WITH DIFFICULTIES

We have observed that the lens placement gesture and the test question with which it is coupled are produced in consistently similar ways across consultations. However this is not to say that they are automated practices insensitive to the specifics of the particular – as opposed to general – optometric setting. Instead even within these consistencies, the optometrist's actions of placing the lens and asking a test question are highly sensitive to local contingencies. We can observe this when difficulties occur in the conduct of the subjective refraction. A particular difficulty that may arise for the patient is that the transformation of vision brought about by the introduction of the lens may be rather small and difficult to remember or articulate - especially within the confines of the test question. The optometrists in our data appear highly sensitive to these kinds of difficulty and perform actions to resolve them and ameliorate their consequences for the conduct of the test without treating the patient as incompetent in any way. In fragment 3 the optometrist takes action even without an explicit indication of trouble by the patient, treating the patient's non-response as a display of possible difficulty and test disruption. The fragment continues fragment 2.

Fragment 3 (extends fragment 2)

6. Opt: or better withou:t?

7. (1.5)

8. Pat: Don like eihhther tuh bhe HHon

[↑EHh]

9. Opt: [Ka:y.] So
10. >do you think it makes it< worse at a:ll?
11. Pat: Sli:
12. Opt: (Wuh)
13. Pat: Only sli:ghtly wo:rse.
14. Opt: Bit worse with i:t.

As we have seen, the optometrist's gesture includes the removal of the lens, which is then held at the side of the patient's head as the optometrist completes the test question (line 6). The completion of the question provides an opportunity for the patient to give an answer in the next interactional space; here she makes a small mouth twitch but does not speak. As the silence in line 7 progresses, the optometrist places the lens in front of the patient's eye once more, but also does not speak. The patient then makes a jokey comment about her inability to produce an answer in line 8 and the optometrist acknowledges this then produces a simplified test question in lines 9 and 10.

The optometrist treats the patient's silence and mouth twitch following the test question as possible evidence of difficulty and responds to this by reintroducing the lens. This recreates the initial test condition, enabling the patient to make the necessary comparison once more and providing another opportunity to respond to the test question. It also recreates the opportunity for an immediate reaction to the lens and removes the possibility that the patient will give an answer here after a long period of contemplation. The optometrist first attends to the patient's difficulties through the movement of the lens alone. It is reintroduced without any accompanying utterance, thereby shaping the progress of the interaction and treating the patient as in need of seeing the initial test condition again but as nevertheless able to understand the question and accomplish the task. The test question is then modified in response to the patient's own utterance; this modification simplifies the patient's task but

displays that she is also able to achieve it, thereby preserving an orientation to her as competent.

As this fragment demonstrates, the accomplishment of the specialised tasks required in subjective refraction is highly sensitive to arising contingencies. Optometrists attend to matters such as a delay in producing an immediate test question response as a sign that the patient may be experiencing difficulty and simultaneously as problematic for the test. They undertake actions to ameliorate both types of difficulty and in doing so maintain their cooperation with the patient without undermining the patient's competence. This can also be seen in fragment 4, in which two types of difficulty occur.

Fragment 4

1. Opt: >Is that better< if I do this? With the lens?

↓

2. (.)

3. Or better without.

4. Pat:

Without. →

5. (0.3)→

6. Opt: Better with this lens?

↓

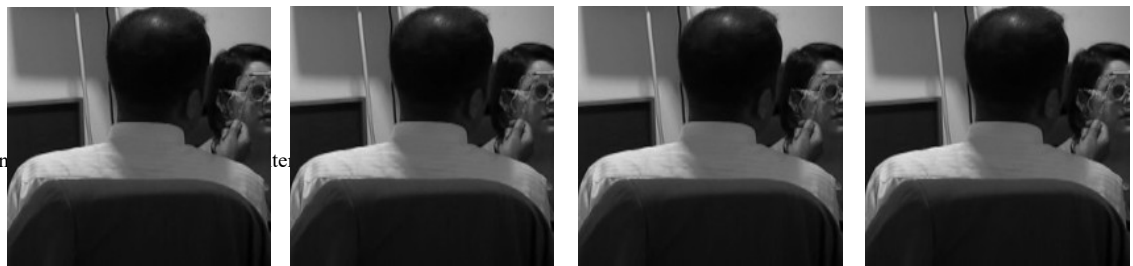
7. (0.6)

8. Opt: Or better without?

9. Pat: without.

The first difficulty occurs as the optometrist places the lens against the trial frame worn by the patient. The optometrist is using a multiple lens (see figure 2) and holds it at the top of its stem just below the lowest two lenses. This provides a greater degree of space between his hand and the patient than when a single lens is used. The physical and interpersonal distance afforded by the holding of this lens may connect to the faster speed with which the optometrist moves his hand compared to the other cases discussed here, in that the movement may be treated as less potentially intrusive to the patient. The optometrist moves the lens as he asks the test question in line 1. The lens is moved in an arc which ends close to the eye as the optometrist says ‘that’ during ‘Is that better’. It is then pressed against the trial frame as he says ‘better’.

In the other fragments discussed here, as well as most cases in our data, patients do not react to the arrival of the lens in any way. Instead they maintain their position of looking



forwards and keep their heads still without speaking, both constructing and displaying their cooperation with the optometrist in the conduct of the task at hand. However in this fragment, perhaps as a consequence of the fast arrival of the lens or her inexperience of optometric examinations, the patient reacts to the arrival of the lens. She does so by moving her head away from the lens and the optometrist's hand as the optometrist continues his question with 'if I' (figure 5). This is difficult to represent through video still images but it is possible to see it by focusing on the right side of each frame and observing how much of the patient's face is visible. Although it is a very small movement, through the action of moving her head the patient treats the arrival of the lens as problematic in some way and disrupts the collaborative production of the test.

Figure 5 The patient moves her head away from the lens as the optometrist asks 'if I' in line 1 of fragment 4.

The patient's movement means that the lens is no longer centred over her eye. The optometrist treats this as problematic for the unfolding of the test by immediately moving to re-centre it. He does so by extending the hand holding the lens further in the patient's direction and adjusting the position of the lens over her eye. At the same time he continues his question, 'do this?' His question intonation at the end of 'this' suggests that the utterance forms a complete test question.

Re-centring the lens ensures that the patient's vision will be transformed by it in the clinically necessary way. However resolving this clinical difficulty disrupts the coupling of the lens placement and the test question, which as we have seen plays a key role in configuring the patient's response. The patient now needs further time for her eye to adjust to the lens, but the lens has already been referred to and a possibly complete question has already been asked. A significant silence after 'Is that better if I do this?' whilst the lens is being held in place might suggest to the patient that a response is required, even though she is

not yet clinically able to produce one. This disruption is dealt with through an increment to the test question. ‘With the lens?’ is a relevant but not necessary piece of information for the question. It appears to be added on to the potentially complete ‘Is that better if I do this?’ serving as a separate, extra question at this point. It is spoken whilst the lens is being held in place, providing more time for the patient to adjust to the lens. After this the optometrist removes the lens and names another condition ‘or better without’ in line 3. Extending the test question in this way restores its coupling with the lens placement and ensures that the patient is clinically able to answer in the next available interactional space. So the optometrist works to overcome the difficulty presented through a highly delicate repair movement and question increment. This enables the test to be resumed quickly whilst also correcting the patient in a subtle way and restoring cooperation in the accomplishment of the task.

The extension of the test question in response to the repair of the lens placement ensures that the patient can provide an immediate response. She does so in line 4 and it is then that the second difficulty occurs, although it is not treated as a difficulty by the patient herself. As the patient gives her response the optometrist is holding the lens at the side of her head. In the silence in line 5 he moves his hand forwards again and places a lens in front of her eye in line 6 whilst asking another test question. Careful observation of the video data reveals that the optometrist here places the *same* lens as previously in front of the patient’s eye, even though she did not display any difficulties responding to his first test question.

Since patients often find it difficult to perform subjective refraction tests it is not unusual for the same test to be repeated. Furthermore although it is by definition a test with no ‘correct’ answers, optometrists can build up an idea of ‘expected’ answers through details of the patient’s history and the results of prior tests in the examination. If a patient gives an unexpected answer in response to a particular lens, the optometrist may choose to reintroduce that lens. Obviously, and in contrast to instances such as fragment 3 where the patient

acknowledges problems producing an answer, it is useful if patients are unaware of this repetition to avoid 'hints' that they should change their response. In addition, by not attending to an answer as 'incorrect' the optometrist avoids treating the patient as incompetent. The repeat of the test here provides an opportunity to check whether the patient gives the same or different response without displaying this to the patient. The optometrist does not give any indication that he is using the same lens as before; indeed, the delivery of a new test question with emphasis on 'this' in 'this lens' can be heard to suggest that he is in fact using a different lens. This impression is not only enabled by his use of a multiple lens but also the quality of his movement with it. We have already observed that the removal of the lens to the side of a patient's head enables its efficient reintroduction. Since this position is outside the patient's range of vision, this reintroduction can be accomplished without it being obvious that it is the same lens and not a new one. This is central to the ability of the optometrist to repeat a test without indicating to the patient that his or her previous answer was in some way 'incorrect'. So the physical production of the task provides a key way to resolve a difficulty in the test with minimal disruption.

These instances of dealing with difficulty consolidate our observations of the accomplishment of the subjective refraction test in the ways that it is established and its appropriate conduct is configured. Vocal utterances and visible actions enable the patient's experience of vision to be transformed and generate a valid test result based on an immediate, non-reflective response. The key to the production of this highly specialised form of participation can be seen in the production of a distinctive lens placement gesture by the optometrist and its coupling with a test question to promote an appropriate response. These actions secure patient cooperation with the task and are conducted in a way that it is highly sensitive to arising contingencies such as patient difficulties producing a response, an 'incorrect' response or a non-socialised patient. As we discuss next, our findings have

consequences for our understanding of the operation of non-symbolic interaction, the role of gesture in workplace activity and professional practice in healthcare.

DISCUSSION

The successful accomplishment of examination procedures within healthcare often demands unusual forms of participation from the patient. The patient's everyday experience of the body and its local environment may be transformed and furthermore the patient may be required to respond to examination tasks in a way that displays an absence of consideration or reflection. In instances such as these, the interest for analysis lies in identifying the ways in which the healthcare practitioner manages the demands of the test in order to enable and engender an appropriate response from the patient. This paper has considered these issues in relation to the practical accomplishment of a highly specialised procedure in optometry. The subjective refraction test relies upon the ability of the optometrist to enable a patient to respond to changing vision conditions in relation to a particular target, such as letters on a chart. The use of lenses and the blurring of one eye at a time transforms the patient's ordinary experience of seeing and the requirements of the test demand highly particular forms of participation; namely, to withstand an object being brought to the eye and to express a distinction between alternative, possibly very similar, vision conditions and to do so spontaneously without any time taken for reflection. The analysis of our data reveals how patients are encouraged and enabled to participate in the subjective refraction test, ensuring its successful conduct. This analysis highlights a number of points for consideration.

Firstly, the successful accomplishment of subjective refraction provides an opportunity to observe non-symbolic interaction in workplace activity. In the optometric environment there is a preference for the patient to articulate a distinction between vision conditions immediately, without any display of contemplation, or as Blumer puts it an "unwitting response" (Blumer 1969: 65) that is independent of, and free from, reflection and

consideration. The ways in which the optometrist performs the test, through the production of a lens placement gesture and its coupling with a test question serves to establish the conditions for and engender this kind of response. This non-symbolic interaction is highly contingent to the task at hand; the empirical validity of the test and its use to inform an assessment of the patient's sight is dependent upon the particular way in which the optometrist builds the condition for the test and configures the appropriate form of participation from the patient. The ability to produce the seemingly 'natural' response upon which the test relies, is organisationally embedded within the action and interaction of the optometrist and the patient.

Secondly, these findings illuminate the role of gesture in healthcare tasks. In the conduct of the subjective refraction, the optometrist places and centres a series of lenses in front of the patient's eye. The gesture through which the lens is placed is highly distinctive and also critical to the accomplishment of the test. We observe a common design to this lens placement gesture across our data – with the lens travelling further than necessary and coming first above the eye and then downwards. This shape and its temporal character – slower than the movements that precede it – serve to forewarn the patient of the arrival of the lens and of the upcoming test whilst avoiding any obstruction that may interfere with the patient's ability to perform the test comfortably. The intricate coupling of the gesture with a test question utterance promotes the delivery of a question response at a point when the patient becomes both clinically and sequentially able to produce one. Within this coupling we observe that rather than the common understanding of gesture, in which talk is elaborated by accompanying bodily movement, the delivery of the test question attends to the design of the lens placement. The question utterance implicates a relevant sequential response from the patient but does so with regard to the position and timing of the gesture across different stages of its delivery, including in instances of difficulty where some repair to the gesture is

required. These findings highlight the value of recognising the role of gestures in the accomplishment of technical, workplace activities – rather than simply focusing on their communicative contribution. Indeed, we have come to think of the gestures in our data as 'professional gestures': not only are they central to the accomplishment of subjective refraction, they also repeatedly take a distinctive shape whilst being sensitive to arising contingencies. These professional gestures are as stylised as well as functional, attending to and accomplishing the task at hand in sophisticated and subtle ways. Interestingly however, despite appearing to be prevalent across the profession, the particular shape and delivery of this lens placement gesture is not explicitly taught in optometric training, rather learned through professional practice.

A further point for consideration is that the interactional practices through which the optometrist conducts the test and manages the patient's response suggest a certain form of socialisation in the healthcare setting. The optometrist provides the patient with the resources required to behave in an appropriate manner that enables the test to establish valid results. As we have observed, the coupling of the lens placement gesture with a test question serves to encourage the patient to respond immediately. We can add that the precise wording of the question also encourages an unambiguous response. The patient is not provided with an opportunity to produce a response that is dispreferred in this context – delayed, open or undifferentiated - since the temporal organisation of the test is such that the absence of an immediate, unambiguous response leads to the removal of the lens and perhaps a repeat of the test. Where patients display difficulty performing the test or appear to produce a 'wrong' answer, optometrists adopt practices that correct perceived difficulties without appearing to threaten patient competence. So patients are encouraged to participate in a particular fashion both by virtue of how the test is produced and through the ways in which the optometrist deals with the response the patient delivers. Optometrists establish the specialised

requirements for the task at hand and promote the cooperation of a socialised patient; in doing so, patient and optometrist secure the accomplishment of a test that, whilst relying on answers produced through spoken utterances, can be used to provide (indirect) evidence of the underlying physiological state of the patient's eyes.

Our final point concerns one way this research may be taken forward. Like many other professions, optometry is constantly subject to organizational and technological changes as new systems and devices are deployed in the consultation room to enhance professional effectiveness and service provision. In recent years, some optician practices have begun to replace the trial frame for subjective refraction with a bulky, automated system called a phoropter. The phoropter is positioned in front of the patient, the patient looks directly into it and the optometrist brings lenses into vision by turning a dial or using a computer. The system facilitates a technical and functional relationship between optometrist and patient. In future studies we hope to compare the interaction involved in phoropter-based subjective refraction tests with those done with a conventional trial frame. For instance, the phoropter hides the patient's face from the optometrist and replaces the professional gesture of placing the lens in front of the patient's eyes with a click of a mouse or a turn of a dial on the system. Therefore it is likely that the temporal and sequential organisation of phoropter-based tests differs in some ways to those observed here. Professional practice and the interaction that occurs between professionals and their clientele are both highly relevant to our understanding of the emergence of professional culture. In this analysis, by considering professional practice and interaction in the conduct of subjective refraction – and highlighting possible transformations in practice through the deployment of new technologies - we have illuminated one small but significant aspect of the occupational culture of optometrists.

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