

Contesting facts about wind farms in Australia and the legitimacy of adverse health effects

Health

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DOI: 10.1177/1363459317693407

journals.sagepub.com/home/hea



Shannon Clark

University of Canberra, Australia

Linda Courtenay Botterill

University of Canberra, Australia

Abstract

The development of wind energy in Australia has been subject to ongoing public debate and has been characterised by concerns over the health impacts of wind turbines. Using discursive psychology, we examine 'wind turbine syndrome' as a contested illness and analyse how people build and undermine divergent arguments about wind-farm health effects. This article explores two facets of the dispute. First, we consider how participants construct 'facts' about the health effects of wind farms. We examine rhetorical resources used to construct wind farms as harmful or benign. Second, we examine the local negotiation of the legitimacy of health complaints. In the research interviews examined, even though interviewees treat those who report experiencing symptoms from wind farms as having primary rights to narrate their own experience, this epistemic primacy does not extend to the ability to 'correctly' identify symptoms' cause. As a result, the legitimacy of health complaints is undermined. Wind turbine syndrome is an example of a contested illness that is politically controversial. We show how stake, interest and legitimacy are particularly relevant for participants' competing descriptions about the 'facts' of wind turbine health effects.

Keywords

discourse and conversation analysis, environment and health, experiencing illness and narratives

Corresponding author:

Shannon Clark, Centre for Research and Action in Public Health, Health Research Institute, University of Canberra, Canberra, ACT 2601, Australia.

Email: Shannon.Clark@canberra.edu.au

Introduction

Wind energy is increasingly being utilised as a 'green' source of electricity. In 2015, 33.7 per cent of Australia's clean energy was from wind, and wind energy comprised 4.9 per cent of Australia's total energy generation (Clean Energy Council, 2015). At the end of 2015, there were 2062 wind turbines in Australia across 76 wind farms (Clean Energy Council, 2015). More wind farms were under construction for completion in 2016 to 2017.

Wind energy has been subject to public debate with an apparent 'social gap' between public support for the development of wind energy in general, evident in surveys (see, for example, Hall et al., 2012), and objections to particular developments. Opposition can be seen in local media and online activism (Hall et al., 2012) and in submissions to a government inquiry (The Senate-Community Affairs References Committee, 2011), and includes arguments about the aesthetic impact of wind turbines, environmental impact on wildlife (e.g. birds or bats), decreased property values and expense. A major focus in the Australian debate, which distinguishes it somewhat from debate elsewhere (Botterill and Cockfield, 2016), has been the purported negative health impacts for those living nearby. 'Wind turbine syndrome' is a term coined for a collection of symptoms, including sleep disturbance, headaches, vertigo, tinnitus, earaches and concentration difficulties (Pierpont, 2009). Symptoms are proposed to be caused by infrasound – sound below the threshold of human hearing – and low-frequency noise produced by wind turbines. Other wind-farm emissions that have been explored for potential health effects include audible noise from turbines, 'shadow flicker' – moving shadows from rotating blades – and electromagnetic radiation (National Health and Medical Research Council, 2015).

Reviews of research have not found evidence that wind farms directly cause adverse health effects in humans (Knopper and Ollson, 2011; National Health and Medical Research Council, 2015; Schmidt and Klokke, 2014). There is some evidence that wind-farm noise is associated with annoyance, which in turn may be associated with health effects (Knopper and Ollson, 2011; National Health and Medical Research Council, 2015). However, the National Health and Medical Research Council (2015) in Australia concluded that '[g]iven the poor quality of current evidence and the concern expressed by some members of the community, there is a need for high quality research into possible health effects of wind farms, particularly within 1,500 metres' (p. 1).

Without consistent evidence, some conclude that wind-farm health effects are psychogenic or sociogenic (Chapman, 2011; Crichton et al., 2014b; Knopper and Ollson, 2011). Rubin et al. (2014) proposed four possible psychological mechanisms for wind turbine syndrome: the 'nocebo' effect, whereby the expectation of harm is self-fulfilling; misattribution of symptoms – attributing unexplained existing symptoms or subsequent symptoms to a new environmental exposure; worry and annoyance; and social factors, including sensationalist media reports, activist literature and interaction with others. Negative information about the potential impact of proposed wind farms is thought to heighten residents' concerns about health effects, priming them to expect negative health impacts or attribute current health problems to wind farms (Chapman et al., 2014).

Wind turbine syndrome can, thus, be understood as an example of a 'contested illness'. Swoboda (2006) describes contested illnesses as having the following characteristics:

(1) their status as a legitimate illness is highly controversial; (2) their etiology is ambiguous; (3) their existence has been linked to other diagnoses and co-morbid conditions; (4) their treatment regimens are unclear; and (5) their legal, medical, and cultural classification is disputed. (p. 234)

Other contested illnesses include chronic fatigue syndrome (or myalgic encephalomyelitis; Guise et al., 2007; Horton-Salway, 2002, 2004, 2001), fibromyalgia (Armentor, 2015; Wolfe and Walitt, 2013), Gulf War syndrome (Brown et al., 2003; Shriver and Waskul, 2006) and multiple chemical sensitivities (Phillips, 2010; Swoboda, 2006).

People experiencing symptoms without a medically agreed organic cause face challenges establishing the legitimacy of their illness. Psychological explanations for symptoms can be a threat to identity (Tucker, 2004) and are typically resisted (Burbaum et al., 2010; Nettleton, 2006). As with other contested illnesses, people who report experiencing negative health effects from wind farms face medical and public scepticism as to whether their illness is 'real' and they are vulnerable to having their health concerns dismissed as illegitimate or attributed to psychological causes.

This article examines the issue of wind-farm health effects as a social phenomenon. We take a discursive psychological approach to examine how opposing arguments about health effects and their causes are constructed interactionally. We show how people construct wind farms as negatively impacting health or as benign, and the interactional resources that speakers use to advocate for and defend their own position and undermine others'. We also examine how different aspects of wind-farm health effects are differently contestable. While participants treat others' experiential claims as credible, they contest attributions of illness to wind farms. As such, the legitimacy of complaints about wind-farm health effects is undermined. A pervasive concern for participants as they build their own rhetorical position and undermine that of others is the relevance of stake and interest in wind farms. By showing how participants on both sides manage issues of stake and interest as they construct the validity of wind-farm health effects, we argue that stake and interest are important for understanding wind turbine syndrome as a contested illness.

Data and methods

This article examines how health effects of wind farms are talked about in interviews, drawing on the principles of discursive psychology (Edwards and Potter, 1992). In particular, we adopt a version of discursive psychology that utilises the methods and findings of conversation analysis (Edwards, 2005), or, using Wooffitt and Allistone's (2005) term, conversation-analytic-informed discursive psychology. We examine three interviews in which two researchers interviewed couples from a community where a wind farm had been established on private landholders' properties. These interviews were collected for a larger study on the role of values in land-use disputes in rural Australia, of which wind-farm disputes were one example (Botterill and Cockfield, 2016). For the larger study, 16 interviews were conducted in four communities in two states of Australia. The researchers identified potential participants through media reports and Senate Inquiry submissions. Following initial recruitment, further participants were identified

through a snowballing approach. Participants were initially selected to fall into two categories: opponents and wind-farm hosts; however, the selection process also drew in 'fence-sitters' who were largely neutral about the wind turbines. Within the ethics protocol of the broader project, a researcher experienced in analysing interaction (SC) was brought into the project to undertake secondary, discursive analysis of interviews.

Three interviews were selected for detailed transcription and analysis. The audio recordings had a combined duration of 131 minutes and were transcribed using conversation-analytic transcription conventions (Gardner, 2001; Jefferson, 2004; see Appendix 1). The interviews were chosen as examples of maximally divergent positions – for, against and 'middle-of-the-road' – and were analysed as (multiple) single cases (Robinson, 2007; Schegloff, 1993). However, which interview was which was not disclosed to the analyst prior to transcription. Thus, the participants' respective positions were inferred from the talk. Adopting the conversation analysis approach of 'unmotivated looking' (Psathas, 1995), an early query was to explicate the interactional features that contributed to participants' hearable stances. The contested nature of wind-farm health effects was a key aspect of participants' constructed positions.

We analysed the interviews as interactional objects (Potter and Hepburn, 2005). That is, the interviews were analysed as occasions of institutional talk in which participants have institutionally prescribed roles (Arminen, 2005; Drew and Heritage, 1992). Research interviews are typically designed to be an arena in which the interviewees' role is to produce opinions. As such, interviews are a useful site for examining how participants present and defend their opinions and construct their stance on an issue (Billig, 1989).

Taking a conversation-analytic-informed discursive psychological view offers a distinct approach to the study of wind turbine syndrome as a contested illness. The non-cognitivist framework enables consideration of how participants manage aspects of their identity, credibility, stake and interest and the validity and legitimacy of their experience. We do not seek to establish objective 'truths' about wind farms. Instead, we share Potter's (1996) interest in the social construction of facts and examine how the contested nature of wind-farm health effects is interactionally constituted. Through their talk, people debate, resist, contest and implicate different versions of the world. Understanding the resources that speakers use as they present their own position and undermine others' arguments illuminates how different stances on a contentious issue are performed and enacted (Potter, 1998).

Analysis

The 'facts' about whether wind farms cause negative health effects are contested; some people argue that wind farms cause ill-health while others argue that wind farms are benign. Below, we explore first the discursive work participants perform to construct wind farms as harmful or benign. We then examine how participants manage the legitimacy of claims about negative health effects from wind farms. We consider how proponents negotiate talking about other people's experiences. We also examine how complainants attend to and counter potential accusations of their symptoms as psychogenic or motivated by their interests.

Contestability: wind turbines as harmful or benign for health

Interviewees 'Danielle' and 'Kel' have a property adjacent to one hosting wind turbines. The couple are vocal opponents of the wind farm and argue that it has destroyed their farming business and has negatively impacted their health. They attribute headaches, earaches and loss of sleep to infrasound from wind turbines. In Extract 1, the couple construct the problematic nature of infrasound on health and their business:

Extract 1 – 14051602

1. D: we've lost our right to ↑work on our farm
2. because the infrasound out there is ↑shocking.
3. D: [*a::h*_ ((clears throat))
4. K: [Dani can't work in the shed when we're shearing.=
5. [=she_ .hh [gets these horrific headaches;
6. I2: [mm.
7. D: [and in the sheds too;; coz of the uhm.
8. K: [coz wes we do our own (wool) work;
9. D: [well. you do a bit ↑too.
10. K: we have shearers; but
11. K: and we've had (.) even rouseabouts coming up
12. and saying I've got a headache
13. but I don't know why:.
14. D: °and my ears are hurting.°
15. D: and that's in the cor- the- it resonates within the-
16. the infrasound in the [in the woolshe:d_
17. K: [;>but of course what'll
18. D: [and the sheep shed_
19. K: [ultimately happen is we won't be able to get
20. employees to ↑work coz they'll be worried [about it.
21. D: [we'll we
22. ↑da:ren't say anything to the shearers
23. [we don't say anything in case [they walk out.
24. K: [nho [nho:.
25. I2: mm.

Throughout the extract, the interviewees work to reify their account of the health impacts of infrasound. They use a range of interactional devices described by Potter (1996) to construct their description as factual, including extreme-case formulations (ECFs; Pomerantz, 1986; Sidnell, 2004), externalising devices such as third-party corroboration and active voicing, and narrative detail.

ECFs are a resource for legitimising claims when speakers are working to justify, convince, complain or argue (Pomerantz, 1986). ECFs use 'the extreme points on relevant descriptive dimensions' (Potter, 1996: 187). In Extract 1, participants use ECFs ('↑shocking', line 2; and 'horrific', line 5) to describe the problem and characterise it as severe. The interviewees also use ECFs to predict an inevitable, dire future in which they will not be able attract employees (lines 17, 19–20). Through ECFs, the participants present a case for the adverse impact of the wind farm on their health and business. In doing so, they

build their opposition to the wind farm as warranted and legitimate and based on direct negative personal experiences.

As vocal wind-farm opponents, the interviewees are vulnerable to their complaints being heard as motivated by their stake and interest in the matter. The interviewees orient to and defend against this by presenting independent third parties as corroborating their position. Kel creates consensus for Danielle's headaches by invoking independent, volunteered and unmotivated corroboration from 'rouseabouts' (line 11). As casual workers, rouseabouts would not be expected to be strongly engaged in local or professional issues. The active voicing or reported speech of rouseabouts in plural presents the report of headaches as a prototypical summary quote (Buttny and Cohen, 2007) and a general, aggregate experience of employees. Finally, through active voicing, the rouseabouts are presented as not knowing the cause of their headaches, and thus, as unmotivated by pre-conceptions about wind turbines. Kel thereby creates corroborative evidence for their health claims, by showing that others without an interest in the debate have also experienced health problems.

The factual nature of the interviewees' account that infrasound causes negative health effects is also constructed through Danielle's detailed descriptions. Infrasound is not directly audible; however, the interviewees construct it as perceptible by assessing it and citing its effect on their own health and their employees. Danielle also builds facticity by describing specifics about the location and mechanism of the problem (lines 15–16). These details explain how and why infrasound is specifically problematic for health and their business.

We now turn to examine the other side of the debate: How wind-farm proponents present wind farms as benign. The interviewees 'Lana' and 'Damien' are a couple who host wind turbines on their property. The topic of 'noise and health effects' is raised by the interviewers. The interviewees initially disclaim the topic as warranting discussion before presenting their position that the wind farm does not cause health effects. Again, the participants orient to the relevance of their stake and interest in wind farms to their stance about health effects:

Extract 2 – 14051500

1. I1:.. hhhh CAN I ASK YOU THEN about these issues
2. of noise and health effects.
3. L: yep.
4. (0.6)
5. L: you can.
6. D: yep.
7. (0.5)
8. I1: would you like to talk [about them.
9. I2: [huh huh huh huh
10. L: there's nothing [to talk [about.
11. D: [huh n(h) (h) (h)o.
12. I2: [huh huh huh
13. L: [it's-
14. D: [I- I think it's absolute (0.5) HHHH.

- Sequentially, Lana and Damien treat the topic of health effects as problematic in the way they respond to the interviewer's question. In lines 1 and 2, the interviewer seeks Lana and Damien's perspective on noise and health effects through a topic proffer, formulated as a 'yes/no'-type question. Topic proffers 'proffer' a topic, making it available to recipient to take up or reject (Schegloff, 2007: 170). In responding, Lana (and then Damien) deploys cross-cutting turn-design features to claim a stance of acquiescing to the topic, but not 'buying in' to the project of producing topic talk. The 'yep' in line 3 is a type-conforming response (Raymond, 2003) that aligns with the polarity of the question; however, it is a minimal response, which does not embrace the topic. Schegloff (2007)

notes that ‘some turn types may be doing “double duty”, both enacting their own action (questioning, assessing, telling) and serving thereby as the vehicle or instrument for another action’ (p. 169). Here, the interviewees strategically utilise only one of the actions of the topic proffer by responding to the question as one of permission, rather than topic initiation. Through their aligned-but-minimal responses and silences (lines 3–7), the interviewees enact their subsequent claim that ‘there’s nothing to talk about’ (line 10).

Rhetorically, the interviewees build the case for wind farms as benign using ECFs and corroborative third-party reports, devices used in Extract 1. ECFs are used throughout Extract 2 (e.g. ‘nothing’, line 10; ‘absolute’, line 14; ‘very’, lines 16, 23; ‘had enough:’ lines 22, 25; ‘ridiculous.’, line 25, ‘absolutely↑ zilch’, line 28; and ‘ne(h)ver ...↑EVER’, lines 31 and 32). Lana and Damien also create consensus by invoking unmotivated third parties, their children, to build the case for no impact (lines 31 and 32). The implication is that children, who are without adult preoccupations about whether wind farms are good or bad, would complain whether something was wrong. It is also presented as counter-to-expectation (line 33), thus implying that the basis for the claim is strong enough to overcome scepticism (Potter, 1996).

The interviewees manage potential moral ascriptions of their characters that could be inferred from their talk. The couple position their current intolerance and derision of the debate against a long history of dealing with such claims. They present themselves as having been conciliatory in the face of opposition (lines 23 and 24) and their decision to host wind turbines as informed and researched (lines 26 and 27). Their stance that wind farms are benign is based on their own direct personal experience of having lived in close proximity to turbines (lines 28 and 29). Furthermore, the no-negative-impact position is revised to being a positive (line 30). The arguments for health effects are treated as overwrought, unwarranted and having worn down their patience.

As wind-farm hosts, the interviewees have a financial interest and stake in the wind farm. The interviewees also orient to and manage the personal nature of their interest. Lana describes Damien as having an emotional interest (‘passionate’, line 35) in wind farms. In contrast, Lana presents her own personal position as unemotional and impartial (lines 36–39). Passion can be understood as a source of bias, whereas Lana’s stance implies she is capable of being objective, allowing her to anticipate problems associated with the wind farm: increased road traffic (line 42) and visual impact (line 44). The reasonableness of complaints about health effects is called into question by being positioned as outside the realm of anticipated problems. Through these rhetorical devices, the interviewees undermine the validity of claims that wind farms negatively impact on health and establish their case that wind farms are benign and unobtrusive.

So far, this article has examined how participants on both sides of the debate build their accounts as factual and present their positions that wind farms impact health or are benign. However, whether wind farms cause adverse health effects is only one part of the equation. Even if the causative link between wind farms and health effects is discounted, there remains a problem of ‘symptom residue’ (Maynard and Frankel, 2006), the health complaints that persist without an agreed cause. The next section considers how speakers balance epistemic rights to experience and the problem of symptom residue in their accounts for other people’s health problems.

(II) *legitimacy: accounting for others' experiences of negative health effects*

Unlike the facts about wind farms causing health effects, the health complaints themselves are not contested. Interviewees delicately manage talking about others' health experience. Typically in interaction, speakers are afforded primary rights to narrate their own experience. Labov and Fanshel (1977) distinguish between A events and B events. A events are events which speaker A has privileged access to and typically include the speaker's thoughts, feelings, experience and personal history. This distribution of epistemic rights to experience is an important organising aspect of everyday talk (Pomerantz, 1980; Raymond and Heritage, 2006). In the current data, while speakers defer primary rights to others' experience of symptoms, they account for symptoms differently. The next two extracts show speakers accounting for others' experiences as psychogenic (Extract 3) – having psychological origins – and as misattributing 'normal' symptoms to wind farms (Extract 4).

Participants 'Adrian' and 'Kate' presented a middle-of-the-road stance on the local wind farm approximately 3km away. In Extract 3, the interviewers ask their view on arguments against the wind farm and the validity of such positions. The interviewees identify health effects as an issue and, although they acknowledge the validity of others' experiences, they offer an alternative causal account for symptoms:

Extract 3 – 14051501

1. I1: so what's your view of (0.4) the main arguments that
2. they're (0.5) putting up.
3. (0.8)
4. I1: against them.= >I mean first of all;
5. what d'you-< what do you (.) hear
6. from them most. and how valid
7. do you think those criticisms ↑a:re.
8. K: ↑well the: uhm (0.8) ts! (0.8) >what's it<
9. wind syndrome. (0.8) the health effects
10. I think [is uhm (0.7) .hhhh
11. I1: [yeap.
12. K: >↑y'know< they validly might (.) fee:l_ (0.9)
13. I think they're making themselves sick basically;
14. the worrying about it.
15. (0.2)
16. A: mm.

The interviewer seeks interviewees' perspectives about third parties – opponents to wind farms – and their 'main arguments' (lines 1 and 2). She breaks the question into two parts, asking the interviewees to name the criticisms and to comment on their validity. Kate inoculates herself against being heard to have a particular interest in the arguments against wind farms in her naming of the issue (lines 8–10). By describing the problem in uncertain terms ('what's it') and markers of hesitancy (note the hitches and perturbations), Kate displays this is not her own stance (Potter, 1996: 132–133). She distances

herself from being heard as closely following the debate or overly familiar with opponents' claims, let alone one who would claim such a thing herself.

Kate acknowledges the validity of others' negative experiences (line 12), but offers an alternative characterisation of the cause of the health effects: that the participants are making themselves sick by worrying (lines 13 and 14). That is, others' experiential claims are not questioned (although Kate treats them as outside her experience through epistemic downgrades 'might' and 'I think'), but the cause of symptoms is described as self-induced worry. As such, the health effects are characterised as psychogenic.

In the next extract, the participants – wind-farm proponents – delicately manage their epistemic rights to talk about others' health experiences while also contesting the validity of wind farms causing health symptoms. Damien contests the abnormal status of symptoms, suggesting that sufferers are misinterpreting normal aches and pains and attributing them to wind farms:

Extract 4 – 14051500

1. D: but we've never had anyone come in going
2. oh; I've just developed a really bad headache;
3. *o::r* °y'know I'm feel like I'm::_°
4. WE HAVE SEEN NO EVIDENCE ↑AT ALL
5. of anything. have we.
6. L: *no.*
7. (0.5)
8. D: *a:h* I mean I- I'm a middle aged person like ever-
9. like y'know; I- I I have aches and pains;
10. [>and and< if I wanted to blame it on something
11. I2: [hhh hhh
12. D: I s'pose I could go ↑oh; well that must be_
13. oaah that must be that. y'know;
14. but I mean °°oar:::°° I haven't seen anything;
15. and I haven't read anything (1.0) i- in any
16. scientific literature which I would give
17. any credence to; from anywhere else in the world;

Prior to the start of Extract 4, Damien produced a list of people who have had exposure to the wind turbines on their property without reporting negative health effects, including the couple themselves, 'young kids' who visit weekly for horse-riding lessons, employees, friends and another resident of the property. The extract begins with Damien distancing himself from direct access to others' experience by formulating that the couple has not received reports from others (line 1), before presenting the couple's direct joint experience (line 4).

Although disclaiming their own direct or observed experience of health effects, Damien deals with symptom residue, accounting for symptoms experienced by others. He offers a candidate explanation for non-specific symptoms, 'aches and pains', characterising them as normal for someone in the category of 'middle aged' (lines 8 and 9). He then builds a hypothetical example of how he could explain these normal physical

sensations by blaming them on wind farms (lines 10 and 12). Here, Damien delicately undermines the validity of arguments that wind farms cause such symptoms by couching them in his own personal domain through a hypothetical self-quote (see Buttny and Cohen, 2007), rather than explicitly talking about another person's experience. As such, he implies that others who complain of general symptoms are miscategorising normal experiences as pathological and then wilfully misattributing them (line 10) to wind farms, without overtly making that accusation. He then further contests the credibility of health effects, returning to his own direct experience ('I haven't seen anything', line 14), and his extended first-hand experience with the credible and objective 'scientific literature' (lines 15 and 16).

In Extracts 3 and 4, others' negative health effects are presented as linked to experiencers' stake and interest in the wind farms. In Extract 3, third-party complainants' stake as opponents – people who worry about wind farms – is proposed to cause the symptoms. Likewise, in Extract 4, the experience of symptoms is presented as motivated by stance (line 10). Although speakers cede to sufferers' primary epistemic rights to their experience of health symptoms, the cause of symptoms is treated as contestable and motivated. As such, the interviewees undermine claims about the legitimacy of wind farms causing health effects.

Issues of stake, interest and legitimacy of their health problems are defended by the couple claiming negative health effects from wind farms. In Extract 5, the interviewees orient to and defend against the relevance of their stake in the issue as wind-farm opponents as driving their health claims. This is an example of 'stake confession' (Potter, 1996):

Extract 5 – 14051602

1. D: u- but it's very unsettling;
2. and of course >y'know< we can only have about
3. four days .hh running what's left of the- the ↑farm.
4. K: see- we- we're all accused of nocebo; an' uhm
5. D: hhm
6. K: and they think we have nocebo effect [because we=
7. D: [coz we-
8. K: =opposed it right from the word go
9. and that came up at ((place)) ↑actually;
10. D: °oh that's the, °
11. K: they tried to discredit our findings by the fact
12. that it'd be nocebo.

This exchange occurs towards the end of the interview. The interviewees re-present the negative and extreme impact of the wind farm on their lives and business (lines 1–3). Prior to this extract, Danielle reported that they have to leave the farm for two to three nights each week to sleep.

Here, Kel orients to the relevance of their health claims as potentially hearable as illegitimate and motivated by their stake and interest *as opponents*. Kel introduces a psychological attribution for their experience ('nocebo', line 4) by reporting others'

arguments about opponents generally. The moral overtones of inappropriately labelling oneself as sick are implied in the formulation of being 'accused'. He then explicitly names the negative expectations and 'confesses' their long-standing position as opponents (lines 6 and 8). Stake confessions can be 'disarming' and 'a display of honesty and objectivity: the author is someone who can stand outside his interest and is well aware of their distorting potential' (Potter, 1996).

Having a contested illness leaves complainants vulnerable to questions of whether their symptoms are 'real', for example, by their symptoms being treated as psychological (Extracts 3 and 5), or the seriousness of their symptoms questioned (Extract 4). In the final example, we consider a somewhat flipped case. A proponent's medically diagnosed, serious illness is reported to have been (falsely) attributed to wind turbines by opponents. This extract shows that (mis)attributing the cause for someone else's illness can be treated as a social transgression. Utilising someone else's illness to advance a cause is treated as sanctionable by the participants in the interview:

Extract 6 – 14051500

1. L: [I got uhm (.) lymphoma_z after (1.8) °ah° before
2. °the wind farm was constructed.°
3. and they were try:ing to_ at one point they were
4. going to try it on ((company)) that I got
5. lymphoma from the wind↑farm?
6. mmm.
7. (3.1)
8. I1: that's just °ru:de.°
9. D: ↑oh yeah.=
10. L: =oh. that's nothing. °I tell you_z°
11. D: hhh hhh we had some very interesting letters
12. over the years,

Lana discloses a serious illness (details changed to protect identity) to the interviewees and locates it as temporally predating the wind farm, and therefore, unequivocally not causally related. Lana recounts an attempt by opponents to attribute her illness to the wind farm as a strategy in their opposition. The interviewer assesses it as sanctionable in line 8 ('that's just °ru:de.°'); a position with which Damien strongly agrees. Lana, however, positions the incident as towards the mild end of the scale of their experiences, thereby positioning the couple as on the receiving end of extreme behaviour.

The disputed nature of contested illnesses is problematic for people trying to establish the validity of their problems and their complaints against wind farms; however, it also allows wide scope to co-opt instances of illness as supportive examples. The characterisation of health complaints as serious/non-serious is implicated in the construction of the nature of wind farms as harmful/benign. The case for wind farms as benign can be made by minimising the health complaints and characterising them as part of normal experience. In contrast, the case for wind farms as harmful can be bolstered by attributing health complaints to them. In Extract 6, the serious and life-threatening nature of the

illness was reportedly implicated in opponents' case building. The extract also shows that participants can treat such actions as a social wrongdoing.

Discussion

We have highlighted how interviewees drew on various rhetorical resources in research interviews to construct their own arguments and positions in relation to wind-farm health effects and to undermine counter arguments. Drawing on discursive psychology, we focused on interactional details to investigate how participants constructed their descriptions and built factual accounts. Participants on both sides used resources including ECFs and third-party corroboration to establish the facticity of their positions. We showed that different aspects of the health effects of wind farms were differently contestable. While the 'facts' of whether or not wind farms cause health effects were contested, people's subjective experiences of symptoms were not directly contested. Participants treated issues of stake, interest and legitimacy as relevant throughout their competing descriptions.

Throughout the interviews, as participants built the legitimacy of their own positions and defended themselves against counter arguments, they displayed their awareness and familiarity with the debate about wind-farm health effects. Participants also variously invoked, countered or aligned with academic findings, for example, through terminology 'wind syndrome' (Extract 3; Chapman, 2013; Pierpont, 2009) and 'nocebo' (Extract 5; Chapman et al., 2014; Crichton et al., 2014a), or specific arguments (compare, for example, Damien's position in Extract 4: 'I have aches and pains; >and and< if I wanted to blame it on something ...' with 'As physical symptoms are common in healthy people, there is considerable scope for people to match symptoms with their negative expectations'; Crichton et al., 2014a: 1). This displayed familiarity with the debate and opposing positions gave the arguments a 'fitted' quality, whereby the participants' rhetorical strategies almost countered each other across the separate interviews.

A challenge for people on both sides of the debate is that while some people claim to be negatively affected by wind farms, others in the same community are not. Accounting for this discrepancy was a matter for participants on both sides. We investigated how participants negotiated matters of epistemic rights to experience when talking about others' health experience. Participants oriented to their limited access to and rights to narrate others' personal experience; however, while speakers ceded to experiencers' rights to their symptoms, they attributed different causes to the symptoms. We showed how speakers delicately negotiated epistemic boundaries and how different aspects of the health effects of wind farms were differently contestable.

Stake and interest are particularly salient for wind turbine syndrome as a contested illness. While all contested illnesses are vulnerable to questions of legitimacy, the relevance of stake and interest adds an additional layer of complexity for the legitimacy of the health complaints attributed to wind farms. Some contested illnesses point broadly to a proposed cause of sufferers' symptoms, for example, environmental exposure to common chemicals in multiple chemical sensitivities, and 'war-related chemical exposures and environmental hazards' (Shriver and Waskul, 2006: 466) in the case of Gulf War syndrome. Wind turbine syndrome identifies a single, specific source of sufferers' health

problems, which in turn has implications for its remedy. To ameliorate symptoms, exposure to wind turbines needs to be prevented, for example, by decommissioning existing wind farms and not building more. Thus, the remedy for wind turbine syndrome coincides with the objectives of wind-farm opponents. As such, health claims surrounding wind farms are particularly vulnerable to being heard as motivated by claimants' stake and interest as opponents.

On the other side of the debate, claims that wind turbines are safe can also be understood to be motivated by stake and interest of those who stand to benefit or lose from them personally, financially or politically. The potential liability for corporations or governments if found to be responsible for exposing people to hazards can be understood as a motivating factor to contest illness claims (see Shriver et al., 2008). These tensions were evidently live for participants in the interview data. Participants treated stake and interest as relevant to understanding and accounting for the health effects of wind farms. We showed how participants deployed and managed matters of stake and interest as they constructed alternative characterisations of the problem. Unpacking how and why stake and interest are relevant to wind turbine syndrome contributes to the empirical literature on contested illnesses.

The relevance of stake and interest is by no means trivial or restricted to discursive minutiae; it is broadly relevant in decision making and evaluation of evidence. For example, the Australian Senate committee inquiry into wind turbines received a submission from Mr Clive Gare who, with his wife, host 19 towers (The Senate-Select Committee on Windfarms, 2015). He told the committee of health and social impacts of working and living within close proximity of a wind farm. These included sleep interruption, headaches, agitation and a general feeling of unease. The couple reported not being able to open their windows or entertain outside because of noise. The relevance of the Gares' stake and interest in their wind farm was consequential for the committee's evaluation of their testimony:

The committee notes that the Gares have received payment of \$2 million over five years to host turbines and have reported serious adverse impacts. The committee notes, therefore, that their evidence is an 'admission against interest' and as such represents highly reliable evidence. (The Senate-Select Committee on Windfarms, 2015: 14)

Just as stake and interest can be used to discount what a person (or group) says or does (Potter, 1996: 110), it can be taken to constitute strong evidence when the claim and interest contradict.

Proponents of conversation-analytic-informed discursive psychology argue for the benefits of naturally occurring, or non-researcher-generated data (Potter, 2002; Potter and Hepburn, 2005). As such, the use of interview data could be regarded as a limitation of the current study. However, there are a number of benefits to using research interviews to examine contested issues. While there are places where the interactional construction and negotiation of wind-farm health effects might arise 'in the wild' (e.g. community consultation meetings or everyday conversations, for example, in the pub or at the dinner table), for topics where there is disagreement, some people may not be comfortable to present an opinion and they may avoid the discussion or stay silent (MacKuen, 2002: 309). Research interviews provide an opportunity for participants to make their arguments to a neutral

third party, that is, without an opponent present. The interview setting provides a forum in which they can present multiple aspects of their stance without having to compete for speaking space, and without fear of disagreement or confrontation.

Any change in a community's local environment is likely to encounter differences in opinions and resistance from some parties. The existence of 'sides' of a public debate depends on there being alternative and competing positions. The National Health and Medical Research Council (2015) in Australia has called for more research into the possible health effects of wind farms. While a greater understanding of the possible health effects of wind farms is important, this article sheds light on why establishing the scientific 'facts of the matter' will likely not resolve the public debate 'on the ground' in communities: 'of course we are unable to resolve these kinds of dispute by reference to the facts of the matter because "what the facts are" is precisely what is being disputed' (Wooffitt, 2005: 16). This is particularly so for a contested illness such as wind turbine syndrome that is implicated in a wider community and political debate: 'in cases where the disease or its putative cause are politically controversial, often no amount of scientific or medical research is sufficient to unequivocally define the disease or identify its cause' (Brown et al., 2003: 216). Further research into social aspects of the debate is needed. In the context of a politically divisive issue, disputing the facts about causes of people's ill-health leaves the argument locked in a relationship of opposition. Disputing causes also hinders consideration of ways to address sufferers' distress and concerns. Providing empirical insight into how such debates become stuck may encourage institutional representatives (e.g. from government, corporations and communities) to refocus the debate in a way that is better able to address community concerns.

Discursive research can contribute insights to inform understandings of public health issues and policy debates. Questioning or undermining the validity and legitimacy of someone's experience of ill-health is likely to be inflammatory and emotive, and there is a delicate social norm to negotiate when talking about others' health experiences. On the other hand, attributing blame for ill-health to wind farms is likely to anger wind-farm hosts, particularly if it runs counter to their own understandings and experiences. The Senate committee acknowledged the divisive nature of wind farms on communities: 'For many rural communities, wind farm developments have been emotive community issues and decisions to speak out either in favour or in opposition to a development can strain and even break relationships' (The Senate-Select Committee on Windfarms, 2015: 6). Taking a discursive psychological approach to studying wind-farm health effects offers new perspectives on the topic, and illuminates how social actions are intertwined in people's descriptions as they build and undermine the facts of an issue.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

This research was supported under the Australian Research Council's Discovery Projects funding scheme (project number DP140100311).

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Author biographies

Shannon Clark is a research fellow in the Centre for Research and Action in Public Health in the Health Research Institute at the University of Canberra. She is also a visiting fellow with the School of Literature, Languages and Linguistics at the Australian National University. Her research interests are in conversation analysis, communication in healthcare settings, and health services research.

Linda Botterill is professor in Australian Politics and head of the School of Government & Policy at the University of Canberra. Her current research focus is on the role of values in politics and public policy debate.

Appendix I

Transcription symbols

.	falling, final intonation
;	slight fall, continuing intonation
—	level, continuing intonation
,	slight rise, continuing intonation
?	rising intonation
¿	rising intonation, weaker than question mark
wor-	abrupt cut-off
ts!	dental click
=	latched turns without a gap
[]	overlapping utterances
> <	faster talk
< >	slower talk
° °	quieter talk
WORD	louder talk
↓↑	marked shifts in pitch
wo::rd	sound stretch
word	speaker's emphasis
()	transcription doubt
(())	analyst comments
(1.0)	timed silence
(.)	untimed pause, less than 0.2 seconds
hh	audible aspirations, may represent breathing or laughter
w(h)ord	laughter within word
.hh	audible inhalations
word	creaky voice