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## Talking about colds and flu: The lay diagnosis of two common illnesses among older British people

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### ABSTRACT

This paper reports on a study of the ways in which 54 older people in South Wales (UK) talk about the symptoms and causes of cold and influenza (flu). The study was designed to understand why older people might reject or accept the offer of seasonal flu vaccine, and in the course of the interviews respondents were also asked to express their views about the nature and causes of the two key illnesses. The latter are among the most common infections in human beings. In terms of the biomedical paradigm the common cold is caused by numerous respiratory viruses, whilst flu is caused by the influenza virus. Medical diagnosis is usually made on clinical grounds without laboratory confirmation. Symptoms of flu include sudden onset of fever and cough, and colds are characterized by sneezing, sore throat, and runny nose, but in practice the symptoms often overlap. In this study we examine the degree by which the views of lay people with respect to both diagnosis and epidemiology diverge with that which is evident in biomedical discourse. Our results indicate that whilst most of the identified symptoms are common to lay and professional people, the former integrate symptoms into a markedly different observational frame from the latter. And as far as causation is concerned it is clear that lay people emphasize the role of 'resistance' and 'immunity' at least as much as 'infection' in accounting for the onset of colds and flu. The data are analyzed using novel methods that focus on the co-occurrence of concepts and are displayed as semantic networks. As well as reporting on its findings the authors draw out some implications of the study for social scientific and policy discussions concerning lay diagnosis, lay expertise and the concept of an expert patient.

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### Introduction

#### *The lay diagnosis of colds and flu*

Colds and flu, collectively referred to in biomedical terms as upper respiratory tract infections or URTIs, are the most common infections in human beings. Adults may have between two and five episodes of the cold in a year, and schoolchildren from five to seven episodes (Eccles, 2005). During the twentieth century biomedical understanding of URTIs was primarily focused on the identification of the viral agents that are regarded by medical professionals as their main cause. Influenza virus was first identified during the 1930s, and during the 1950s and 60s numerous viruses including rhinovirus, coronavirus and adenovirus were associated with the common cold (Heikkinen & Järvinen, 2003). By the beginning of the current century over 200 serologically different virus types had

been implicated in the aetiology of the cold (McChlery, Ramage, & Bagg, 2009, p. 151). In parallel with the identification of viral agents, the public health effort from the latter part of the twentieth century was concentrated on delivering effective vaccines to reduce the prevalence of seasonal and pandemic flu variants – the most recent global attempt relating to the winter of 2009–2010. However, despite the fact that URTIs have been progressively taken into the laboratory and systematically 'Jennerized' (c.f. Latour, 1988), the main site for their diagnosis is in the community or the world of everyday life. And in that world the understanding of respiratory infections is mediated through a web of concerns – about the origins and interconnection of symptoms, the maintenance of personal health and the distribution of illness among relatives, friends, and neighbours. This paper focuses on such concerns and in particular how colds and flu are spoken about and diagnosed by lay people in ordinary, everyday, non-clinical settings. The data are drawn from a qualitative interview based study ( $N = 54$ ) of older people's understanding and acceptance of seasonal flu vaccine that was undertaken in South Wales during the earlier part of the current decade.

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From the work of Stimson and Webb (1975) onward there has been an increasing recognition of the role played by lay people (as patients) in the diagnostic process (see, for example, Beach, 2001; Frankel, 2001; Gill & Maynard, 2006; Gill, Pomerantz, & Denvir, 2010; Heath, 1992; Peräkylä, 2006). However, the overwhelming majority of relevant studies look at doctor–patient activity in clinical settings – mostly using techniques of conversation analysis. Interestingly, some of those who research into lay engagement with the diagnostic process argue that the word diagnosis should be reserved solely for categorizations of disease by doctors (e.g., Gill et al., 2010, p. 17). The research reported on here is somewhat different from the work just referred to in that it examines how lay people identify and categorize groups of symptoms in the ‘life-world’ (Mishler, 1984, p. 104), or the world ‘grounded’ in everyday life, rather than the world of the clinic or the consulting room. In the context of common respiratory symptoms, it is also worth noting that there has been a long tradition of looking at the ways in which lay people understand the symptomatology of URTI’s, and especially ‘colds’ (see, for example, ; Baer, Weller, Garcia, 2008; Baer, Weller, Pachter et al, 1999; Helman, 1978; McCombie, 1987). However, most of that work examines the range of symptoms lay people associate with cold – and to a lesser extent flu – and how they explain respiratory illness. Such studies are not overly concerned with how lay people differentiate between or how they diagnose colds and flu – a topic that is the focus of this paper.

The study of lay diagnoses of illness and infection is important for a number of reasons and not least because the manner in which ordinary people understand infection and its origins is directly relevant to the spread and control of disease in populations – the health of the public (McCombie, 1987). It is also a topic directly relevant to discussions concerning the display of expertise by lay people in matters of health and illness more generally (Fox, Ward, & O’Rourke, 2005; Prior, 2003). While in policy terms, the topic connects to a growing ‘acknowledgment’ – especially with regard to chronic conditions – of patient expertise in health care and the ways in which such expertise can be drawn upon in the delivery of services to the public at large (Donaldson, 2003; Lindsay & Vrijhoef, 2009; Rogers, Bury, & Kennedy, 2009; Wilson, 1999). In an age of threatened pandemics these discussions acquire an unusually clear resonance.

## Background and methods of study

The data in this paper are drawn from a qualitative study on the views of primary care staff and older people concerning the uptake of the seasonal flu vaccine in rural, urban, and semi-urban areas of South Wales. The study was carried out during 2002–03 and the main objectives were to understand why a large percentage of individuals in high risk groups failed to seek or accept vaccination and what could be done to improve immunization rates among older people. Respondents were selected from a previous age-stratified random postal survey of people in the area aged over 65 who had reported on their immunization status. In light of those reports we chose to sample across a range of status groups. Eighteen people who had refused immunization, 15 who had previously accepted immunization but had since ‘relapsed’, 5 people who claimed that they had never been offered immunization and 16 people who had accepted the vaccine (including 5 ‘first timers’) were eventually included in the study. The work was funded by NHS Wales Office of R&D, and ethical approval granted by the local (Bro Taf) research ethics committee. Findings relating to the original objectives were published in Evans, Prout and Prior (2007).

Data were gathered using a semi-structured interview schedule that contained a list of key topics for discussion. As well as focusing on the reasons why people might accept or reject the offer of a flu

vaccine, the interview schedule contained questions asking: ‘What do you think are the symptoms of colds and flu?’ ‘What do you think is the difference between cold and flu?’ ‘How do you think people catch flu?’ Qualitative interviews of this kind have previously been categorized as a genre of conversation (Kvale, 1996, p. 5) in which respondents tend to reply to questions in a free-flowing style. In our case, for example, that style led the research participants to talk about the causes of upper respiratory tract infections in general and not merely the causes of flu. The current paper is based on an analysis of that talk, and in that context the exercise might be seen as constituting a secondary analysis of an existing data set.

For the purposes of this paper the 54 interview transcripts were initially analyzed using ‘Text-mining for Clementine 12.0’ (SPSS, 2007). There are various advantages of using such automated text-mining techniques for data analysis. One offshoot is that the data set can be trawled for instances of co-occurrence between two concepts (such as flu jab and side-effects). The programme in use is capable of calculating a coefficient for all such co-occurring concepts and can display the results of such connections diagrammatically. Following the exclusion of terms with fewer than 5 citations, the programme identified some 119 concepts (flu, flu jab, side-effects, colds, etc) in our data set. The coefficients of co-occurrence between these concepts naturally varied in strength. In some cases the strength of the links was unsurprising (e.g. the co-occurrence coefficient for the link between cold and flu was unity since the two terms occurred in all interviews); in other cases the link was considerably weaker (e.g. the link between ‘virus’ and flu was only 0.15).

Text-mining results provide a visible means of checking the veracity of interview analysis. For example, the number of instances a concept appears is given, as well as a visual representation as to how that term links to related concepts. Using the text-mining results it is also possible to identify exactly which of the 54 respondents associated the various concepts together and how they combined them. These data form the basis for the information displayed in Figs. 1 and 2. Unfortunately, text-mining software uses

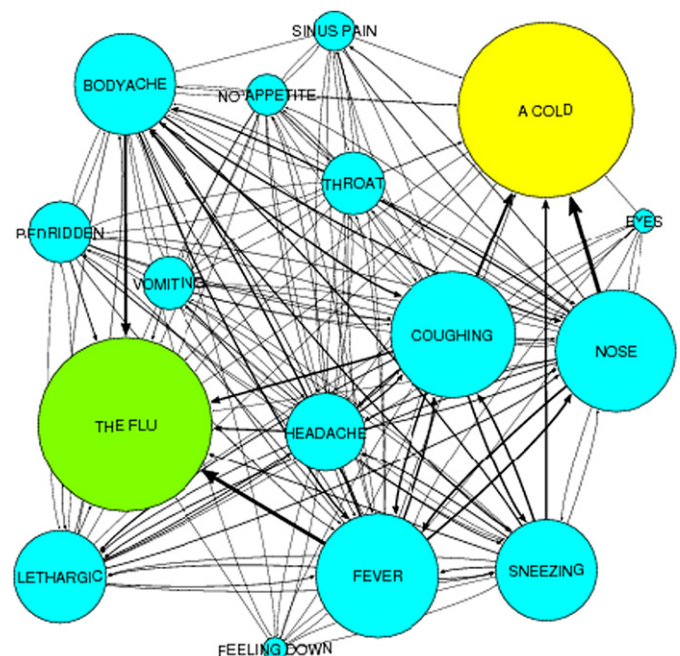


Fig. 1. Symptoms of cold and flu and the connections between them.

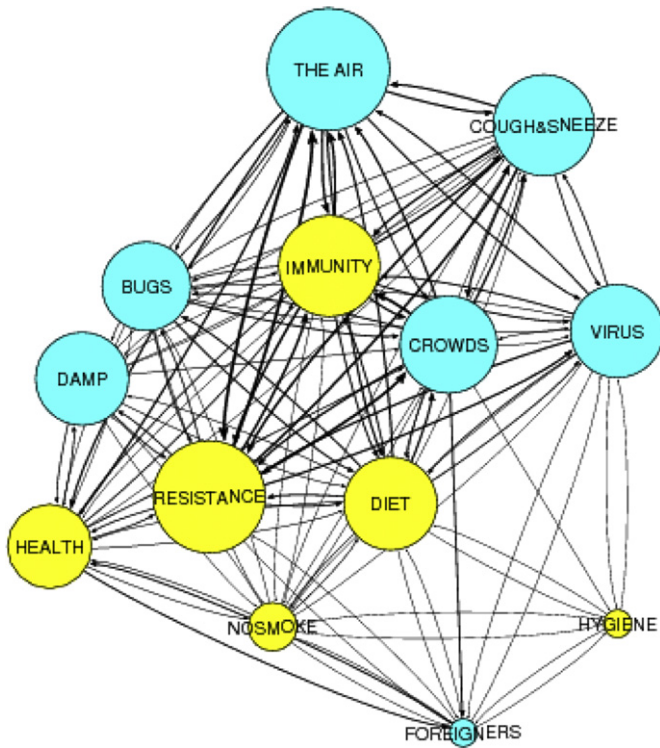


Fig. 2. The causes of upper respiratory tract infections (URTIs) and the connections between them.

the document (interview) as the basis for all its calculations and so it is not immediately clear whether the interviewer or the interviewee makes the connections between concepts. In our case we have restricted ourselves to looking at explicit links made only by the respondents, and for that reason we have extracted the text-mining results and re-incorporated them into semantic networks using social network software (De Nooy, Mrvar, & Batagelj, 2005) rather than the original text-mining software. Our focus is of course more on the concept networks than on social networks, and the figures provide a graphic indication of the nature and strength of the co-occurrence relationships between the basic terms and concepts in the 54 interviews.

### Colds and flu: a view from the clinic

“Cold. A contagious viral infection of the upper respiratory tract usually caused by a strain of rhinovirus. It is characterized by rhinitis, tearing, low-grade fever and malaise and is treated symptomatically”.

“Influenza; a highly contagious infection of the respiratory tract caused by the orthomyxovirus and transmitted by airborne droplet infection. Symptoms include sore throat, cough, fever, muscular pains and weakness ... onset is usually sudden, with chills, fever, respiratory symptoms, headache, myalgia and extreme fatigue.” (Mosby’s Dictionary of Medicine, Nursing, and Health Professions, 2009).

The view from the laboratory would suggest that colds and flu are viral infections, and indeed over 200 different virus types have been associated with the common cold. Around 30–50% of all colds are said to be caused by rhinoviruses, followed by coronaviruses (10–15% of all colds), and influenza viruses (5–15%) (Heikkinen & Järvinen, 2003; McChlery et al., 2009). It is not surprising perhaps that in biomedical literature cold and flu are regarded as syndromes rather than as clear cut ontological categories, and the preferred contemporary biomedical designation is ‘URTI’ or upper respiratory

tract infection. As is also implied above, colds and flu are diagnosed clinically, though laboratory findings are regarded as necessary for the confirmation of any diagnosis. Studies that compare the two forms of diagnosis highlight disjunction in a high proportion of cases (Call, Vollenweider, Hornung et al., 2005).

The symptom pattern for colds and flu is far from agreed upon. Sudden onset of fever and cough are regarded as good predictors of influenza being present, but in general there is a variable list of symptoms associated with the two syndromes in the medical literature. Eccles (2005) for example, lists sore throat, sneezing, rhinorrhoea, nasal congestion, sinus pain, cough, headache, chilliness (for cold) and fever (for flu), anorexia, psychological effects and muscle aches and pains. During the recent (2010) pandemic alert the UK Department of Health information (<http://www.direct.gov.uk/swineflu>) stated that, “the symptoms of swine flu are a fever or a high temperature (38 °C) and two of the following symptoms: unusual tiredness, headache, runny nose, sore throat, shortness of breath or cough, loss of appetite, aching muscles, diarrhoea or vomiting. The same symptoms were listed by the CDC in the USA (<http://www.cdc.gov/flu/about/disease/symptoms.htm>) with an added remark that diarrhoea or vomiting were more likely in children than in adults. Eccles (2005) makes no mention of either diarrhoea or vomiting, and nor do Call, Vollenweider, Hornung et al. (2005).

Diagnosis of flu, in particular, is not therefore a straightforward or clear-cut business. Clinicians, if necessary, can combine reported symptoms, information derived from clinical examination, together with laboratory and radiograph evidence, and data about current circulating strains from flu disease surveillance systems so as to arrive at a firm diagnosis. Lay people generally have access to only the first of these.

### Flu, colds and the sniffles: A view from home

As stated in our introduction, lay talk about colds and flu is set within a mesh of concerns – about causes, symptoms and consequences. Such talk comprises the base elements of what has at times been referred to as the ‘explanatory model’ of an illness (Kleinman, Eisenberg, & Good, 1978). In this section we will focus almost entirely on the identification of symptoms and views concerning the causes of colds and flu. We do so by relating such views to a wider rhetoric of complaint in which the understanding of colds and flu is embedded.

#### *The semantics of symptoms*

The diagnosis of colds and flu in the lay population concentrates, as one would expect, on the symptom pattern. In that respect the procedure differs little from that of clinicians. For diagnostic purposes, of course, clinicians have ultimate recourse to a laboratory identification of a causative agent – though that is rarely used in routine consultations. Lay people have no recourse to such data and one might guess that even if they did they would interpret findings in a distinctly colloquial manner. Indeed, from our data set it is clear that lay people understand symptoms in a markedly different frame from that of medical professionals. In particular they report not only on symptoms relating to the body (especially the head), but also on behavioural correlates – and to a lesser extent on some psychological factors. In addition, lay people mention symptoms that are not ordinarily associated with flu in the medical literature, and they also connect the body itself to colds and flu in ways that can run counter to a prevailing western medical cosmology that seeks to connect pathology to specific anatomical sites.

Fig. 1 shows in diagrammatic form the key symptoms that lay people associate with colds and flu respectively. The thickness of



the lines between the concept nodes express the value of a coefficient of co-occurrence between a reference to any given symptom (in 54 interviews), and any other symptom mentioned. The diagram also displays links between the symptoms and the two key entities of 'cold' and 'flu'. The calculation of the coefficient is based on that used in text-mining software (SPSS: 2007, p. 183), except that here the links are confined to those that are explicitly made by the respondent between the various concepts in the course of the interview (rather than the words merely appearing anywhere in the document). The size of a node is proportional to the total number of references to each concept in the 54 transcripts.

Looking at Fig. 1, we can see that there are a range of entities deployed for the purpose of diagnosis. These include parts of the body affected (nose, throat, eyes); physiological processes (coughing, eating, sneezing, vomiting, and fever); behavioral processes (being bedridden); and to a lesser extent psychological processes (feeling down). Note that most (but not all) of the symptoms are common to both conditions. Lay people naturally weave these entities into their accounts in idiosyncratic ways, but this diagram contains all of the elements that our respondents required to distinguish between a cold and the flu – in short, all that is required to make a differential diagnosis.

Essentially, the diagnosis of a cold focuses on symptoms in the head and colds are associated almost entirely with the head (Headache, however, is viewed primarily as a symptom of flu – as is evident from the detail in Fig. 1). So when respondents were asked to distinguish between colds and flu they would say such things as: 'Well I think colds is (*sic*) just in the head and runny nose and stuffy nose...' (Respondent (R): 44), or refer simply to "a head cold" (R:16). Unsurprisingly, and as is also evident in Fig. 1, the nose (and sneezing) is particularly prominent in the symptom pattern for cold, though associated sites such as the sinus, the throat and the eyes also figure in the diagnostic frame. This is in marked contrast to flu which is invariably viewed as a whole body illness – characterized by whole 'bodyache' (Fig.1). Interestingly, a number of respondents also referred (usually in a dismissive manner) to a third category of illness 'the sniffles' – which seemed to relate to very mild forms of rhinorrhea and associated nasal symptoms. The following data extracts illustrate some of the key ways in which lay people differentiate colds from flu.

(R:24) "Well, flu, you get all your aches and pains. You feel lethargic, that type of thing, but with a cold, it's usually a head cold and plenty of coughs, sneezes and such like that you don't always get with the flu. I feel the flu is more in the whole of the body..."

(R:30) "Always the question is, I mean my daughters about 44 but I said, um, is your body aching all over? Yes, or no? 'Yes'. You've got flu then. If it's not, you've got a heavy cold and that's it."

(R:23) "Well, I think with flu you're aching all over aren't you, you go, you get hot and then you get cold and you're aching all over whereas if it's a cold you're sneezing. You have a sort of a heady cold. I think it's a big difference isn't there?"

(R:7) "Well. Well the influenza usually affects your stomach. It usually affects aching all over the body. And, you usually have a higher temperature. You feel a lot worse with flu, obviously".

As is suggested by R23 above, flu is strongly associated with fever. In addition, it is predominantly associated with myalgia, and exclusively related to being bedridden or to an inability to undertake routine and normal duties. It is sometimes associated with vomiting and co-related stomach pain (R:7). Above all, to have flu is to be 'really ill' (R:46); flu is 'more of an illness than a cough or a cold', (R:17). And, 'when you've got the flu, you're really ill. When you've got a cold you can manage you know' (R:35). Indeed, it is possible to 'shake off a cold' (R:48), but not the flu; flu 'knocks you for six' (R:10).

"Well, a cold you can really master" (R:25), but the flu, 'puts you right off your feet' (R:23). It is often the severity of the discomfort that enables a person to diagnose the one from the other. So, 'flu is woof, bang wallop, out, you're gone' (R:31). In short the flu necessitates withdrawal from normal and routine social intercourse.

Respondents also made clear that, on occasion, colds can develop into flu – which is why the behavioural features can be so crucial in diagnosing one from the other. And perhaps it is this unique capacity of flu to remove an individual from everyday affairs that warrants the invariable use of the definite article in discussions of the one (*the* flu) – as compared to the more probable use of the indefinite article (*a* cold) in discussions concerning the other. In any event, the possibility of a cold metamorphosing into flu serves to highlight the dynamic, 'wait-and-see' and emergent aspects of lay diagnosis with respects to both URTI's and L(ower)RTI's such as pneumonia.

In sum, then, flu is not 'just in the head', but rather affects the entire human frame. As such, and as well as having corporeal symptoms – in the head, stomach, or muscles – flu affects one's routine activities and especially the capacity to function in daily affairs. Flu in that sense is more 'serious'. We return to examine some of the implications of the analysis in the discussion section of the paper. For now we turn to an exploration of causation.

#### Semantics of causation

Fig. 2 is based on the talk that our respondents made in response to the question, "how do you think people catch flu?" As we have already stated, semi-structured interviews of the kind used for this study are often characterized as akin to 'a conversation with a purpose' (Kahn & Cannell, 1957, p. 97); as such they are designed to generate data rather than just to collect data. In our case and even though our focus was on the causes of flu, our respondents spoke extensively about the causes of both cold and flu and even of pneumonia (see extracts below). Their responses led to the identification of a wide range of factors associated with the onset of the two key conditions; we can see virtually all of these referenced in Fig. 2. Therein are mentioned items such as 'bugs' (and 'germs') as well as viruses; but the most commonly referred to causes invoked 'the air' and 'atmosphere'. The interview data also pointed toward means of transmission as 'cause' – so coughs and sneezes and mixing in crowds figure in the causal mix. Most interesting perhaps is that lay people make a nascent distinction between facilitating factors (such as bugs and viruses) and inhibiting factors (such as being resistant, immune, or healthy), so that in the presence of the latter, the former are seen to have very little effect.

In general, it is not easy to unravel the web of talk about causation that occurs in the interview data. Causal agents, inhibiting agents and means of transmission are very often conflated by the respondents – as will be evident in the quotes that follow. In addition, a large proportion of our respondents pointed to the 'flu jab' as a cause of flu. We have not included inoculation as a causal agent in Fig. 2 because it was rejection (or acceptance) of a flu jab that formed the focal point of the interviews – and therefore given undue attention.

(R:32) "How do you catch it [the flu]? Well, I take it its through ingesting and inhaling bugs from the atmosphere. Not from sort of contact or touching things. Sort of airborne bugs. Is that right?"

Indeed 'the air' (and atmosphere) in particular were spoken of both as a cause of infection in its own right and as the key means of transmission between one person and another. Thus;

(R:3) "I suppose it's [the cause of flu] in the air. I think I get more diseases going to the surgery than if I stayed home. Sometimes the waiting room is packed and you've got little kids coughing

and spluttering and people sneezing, and air conditioning I think is a killer by and large I think air conditioning in lots of these offices. I know in the last years of when I was working, we had air conditioning in offices and I had more coughs and colds more during that period than I ever had”.

(R:46) “I think you catch flu from other people. You know in enclosed environments in air conditioning which in my opinion is the biggest cause of transferring diseases is air conditioning. Worse thing that was ever invented that was. I think so, you know. It happens on aircraft exactly the same you know.”

While, the following respondent connects the air to flu’s ‘own little germs’:

(R:17) “I think it’s [the flu] in the air with people who’ve got it. I don’t really know. I know the old saying goes, coughs and sneezes spread diseases, but whether it’s the flu or not or whether that’s just colds or coughs. I don’t think you catch it off someone else, I think you do it all by yourself. Quite clever. I don’t really know. I think it probably does come with the environment if you’re working in an office and everybody’s snuffly and ...I think possibly flu can be more dangerous than people think. It’s not just a cold plus. It has it’s own little germs”.

As previously stated, being, cold, wet, or damp can also be viewed as a direct cause of flu.

Interviewer: “OK, good. How do you think you catch the flu?”

R:39 “Ah. The 65 dollar question. Well, I would catch it if I was out in the rain and I got soaked through. Then I would get the flu. I mean my neighbour up here was soaked through and he got pneumonia and he died. He was younger than me: well, 70. And he stayed in his wet clothes and that’s fatal. Got pneumonia and died, but like I said, if I get wet, especially if I get my head wet, then I can get a nasty head cold and it could develop into flu later.”

Despite the presence of bugs and germs, viruses, the air and wetness or dampness, ‘catching’ the flu is not a matter of simple exposure to causative agents. For within each person there is a measure of immunity or resistance or healthiness that comes into play and is capable of counteracting the effects of external agents. For example being ‘hardened’ (R:14) to germs and harsh weather can prevent a person getting colds and flu. Being ‘healthy’ (R:27) can itself negate the effects of any causative agents, and healthiness is often linked to aspects of ‘good’ nutrition and diet (R:35, R:16), and not smoking cigarettes. These mitigating and inhibiting factors can either mollify the effects of infection or prevent a person ‘catching’ the flu entirely. Thus, (R:45) argued that it was almost impossible for him to catch flu or cold “Cos I got all this resistance”. Interestingly respondents often used possessive pronouns in their discussion of immunity and resistance (‘my immunity’, and ‘my resistance’) – and tended to view them as personal assets (or capital) that might be compromised by mixing with crowds (see R:5 below).

(R:45) “Because I’m fairly healthy. As a matter of fact, I nearly said to you now, no, I don’t want [the flu jab] now because I had shingles two years ago and I think I’m protected against the plague even. I have the full range of antibodies having recovered from shingles.”

(R:54) “Because you and I can do exactly the same thing and be in exactly the same place, and you can have flu and I won’t. Your immune system you know plays a tremendous part in all this isn’t it, so I think you know, if you’re immune to it then you’ll sail through it”.

Equally, having a weak immune system (R:22) can sharpen the risk of contracting cold and flu and might therefore spur one on to

take preventive measures such as accepting a flu jab. There are some, of course, who believe that it is the flu ‘jab’ that can cause the flu and other illnesses. The three extracts below illustrate the general idea, and we cite them not so much for what might be called their lay ‘epidemiology’ (Davison, Davey-Smith & Frankel; 1991), but to illustrate the operation of what might be called a lay surveillance system – a system that is more often than not based on information derived from intimate knowledge of ‘small worlds’.

(R:4) “Well, now it’s coincidental you know that [my brother] died after the jab, but another friend of mine, about 8 years ago, the same happened to her. She had the jab and about six months later, she died, so I know they’re both coincidental, but to me there’s a pattern”.

(R:33) “I told him. I was awful poorly last week. I had that bloody flu injection. And next to me in the butchers... was a husband and wife, my age group, near enough. And she said oh, we’re not having it any more either. Yes, she said, we had a terrible time last year ... there’s a lot of people complaining”.

(R:5) “I’m nearly 87. I’ve had flu four times in my life. And I think I’ve developed a sort of immunity. And I don’t want to spoil that immunity. And that is why I don’t have an injection.

Int: Right. So you think that because you’ve had flu four times, you probably won’t have it again?

R: Well, it’s a good record, isn’t it and I’ll be 87 in July. Plus, I’ve got two other reasons why. I know somebody that’s had GBS from it. Int: GBS?

(R:5) Guillain-Barré Syndrome. You’re paralyzed. He was paralyzed from there down.

Int: Really!

(R:5) Yes, and I’ve got a friend, up Grange Road, here, who has flu every 21 days for 9 years because of a flu jab. Yes. She has flu symptoms every 21 days. She’s one, the doctors have told her. She’s one in I don’t know how many million. So that’s another reason.”

What we can see in Fig. 2, then, is not so much an ‘explanatory model’ for either cold or flu, but the ingredients out of which a variety of explanations can be built. Naturally, specific individuals weave these common elements into their own web of causation in distinctive ways. Thus R:5 (above), for example, wove ‘resistance’; ‘immunity’ and good health as well as the flu jab into his explanatory model; while R:4 placed emphasis on viruses, coughs and sneezes and ‘resistance’ in addition to the inoculation. Indeed, people who refused inoculation proved highly likely to assert that the ‘flu jab’ caused the flu (which is partly why they avoided it). In the following section we highlight and discuss some of the implications of these observations.

### Discussion: the semantics of common illness

Lay or ‘folk’ understandings of cold and flu have constituted the topic of investigation for a number of studies – especially cross-cultural studies. However, the attention of such studies has normally been on the symptomatology of either cold or flu, rather than on the ways in which lay people differentially diagnose cold from flu (e.g. Baer, Weller, Pachter et al, 1999; Baer, Weller, de Alba Garcia, & Salcedo Rocha, 2008). In health service research literature also, there are numerous symptom surveys that concentrate on the reporting of symptoms for ‘the cold’ in particular (e.g. Barrett, Brown, Mundt et al, 2009). Again, none of the latter looks explicitly at the process of lay diagnosis, or the ways in which lay people integrate observations of individual symptoms of cold into diagnostic procedures. In this paper, however, we have intentionally focused on describing the ways in which older lay people – as non-medical professionals – assign clusters of symptoms to one of the

two common disease categories (The views of younger people and of parents of young children may be different).

### Symptoms

It is relatively clear that while lay and professional knowledge of colds and flu intersect at various points, they diverge significantly when assessed as a whole. For even where there is apparent agreement on symptoms – and most of the symptoms mentioned by our sample also appear in the biomedical literature – it is evident that lay people assess such symptoms in a different frame from that used by clinicians.

We know from cross-cultural studies that the symptoms for cold appear to be similar in many different linguistic and social cultures (Baer, Weller, Pachter et al, 1999) and most, if not all, social groups seem to draw a distinction between cold and flu as separate illnesses. However, there are important differences to note. For example, members of the sample reported on here associated 'fever' with cold as well as with flu, and a number of people associated vomiting with flu (though not with cold). Other populations – such as Latin American populations – do not seemingly associate gastric symptoms with respiratory disease. More importantly, perhaps, it seems that the ways in which members of our sample integrated the symptom pattern into an understanding of cold and flu is quite different from that which appears in professional medical discourse. In particular, lay people place a heavy emphasis on behavioural correlates as distinguishing features of flu – being bedridden and therefore unable to function normally is exclusively associated with flu and constitutes a defining feature of flu. There is no consistent reference to causative agents here as a means of demarcating cold from flu. Furthermore it is clear that flu is interpreted as a whole body illness characterized by an aching body (rather than just aching muscles) while colds are mainly confined to the head – head cold. It is not merely that in cases of flu people suffer with aching muscles (and of course they do), but that they, as *homo totus*, are ill. In medical anthropology the concept of a whole body illness is far from unknown. However, such illnesses are usually spoken of in the context of culture-bound syndromes and disorders with psychiatric symptoms. They are also reported on almost exclusively in studies of people living in countries outside of the advanced industrial world – see, for example, Oths (1999) study of 'debilidad'. Yet from the talk of informants in our study it seems plausible to suggest that, among this group of older white English speaking people at least, 'the flu' is essentially regarded as a whole body illness in which psychological symptoms (feeling low or down) play a very minor role (None of the respondents associated feeling low or feeling down with colds).

In the discussion section of their 1999 paper, Baer, Weller, Pachter et al, argued that in English speaking populations in the USA there was common reference to a 'folk flu' that differed in its symptomatology from the biomedical version; the key difference being an emphasis in folk flu on gastrointestinal symptoms, especially vomiting. The concept of 'folk flu' was a particular focus for McCombie (1987), who placed a heavy emphasis on references to vomiting and diarrhea as symptoms of folk flu, and argued that such beliefs hampered the investigation of outbreaks of food-borne diseases. It is clear from our data that an association between flu and vomiting exists among some of our informants. In addition we have noted that it appears as a symptom of 'swine flu' in both UK and US health information sites.

### Causes

Our respondents pointed to a wide range of causative agents – especially in their discussions concerning flu, but also in their talk

about colds. Extraneous causes of the flu can involve viruses, bugs and germs; the environment in general and 'stuffy' air in particular; being wet and wearing damp clothes; the flu jab; and coughs and sneezes of other people. However, any systematic understanding of the role of these factors has to take into account a series of countervailing factors such as a person's robustness, immunity, resilience and healthiness (attributes that, in turn, are often related to a regime involving 'good' nutrition and diet).

Colds and flu are 'caught', and the predominant notion of causation is one involving an infectious agent – usually referred to as a 'bug' or a 'germ', a 'virus' or merely 'it' – transmitted via coughs and sneezes through the air and 'atmosphere'. It's, "a germ that's floating around in the air" (R.17); it's 'airborne' (R.19); "you breath it in" (R.7), it's "a spray" (R.54); "germs in the atmosphere, that go through people" (R.35). There is no apparent recognition of transmission of infection via contact with infected surfaces (see, for example, the extract from R:32 in the previous section) – consequently hand washing does not figure at all in the armoury of preventive measures. More significantly, for a large proportion of people, 'bugs' and germs are believed to be capable of producing little more than the 'sniffles' in the presence of individual (bodily) 'resistance' or 'immunity'; a resistance that can be built up over a lifetime – rather like financial capital – through conscious self-care and a 'good' diet.

There is, of course a parallel and alternative theory of causation that emphasizes factors such as getting wet, keeping warm and staying dry. In this frame, wearing damp clothes, getting wet feet, or simply getting chilled or cold, can in itself cause flu (and lead into pneumonia). Thus, people catch flu by "getting wet, damp and neglecting themselves" (R:23); wearing "light clothes" (R:4); "staying damp too long" (R:15), while "a wind chill can kill as good as anything" (R: 51). These notions of catching cold and flu' from getting wet have been observed in UK populations previously (Helman, 1978). Baer, Weller, & de Alba Garcia (2008), noted their existence across all their lay (and some of their Spanish speaking professional) populations, and refer to it as the hot-cold classification system. Helman (1978) examined it in the frame of a 'hot-cold', 'wet-dry' matrix. Interestingly, according to our informants, the potential for the hot-cold causation mechanism to bring about illness is often neutralized by a healthy constitution and is readily over-powered by the natural resilience of immune and resistant individuals.

Finally it is useful to note that lay people as well as professionals can call upon a nascent surveillance system. In the case of the former group it is a surveillance system reliant on anecdotal evidence and anchored in knowledge of small worlds – worlds composed of near neighbours, friends and close relatives. One implication of living in small worlds is that one (or two) reports of an adverse reaction to medication or vaccination can carry enormous weight in deciding, for example, whether to accept or reject the offer of immunization.

### Conclusions

The status of 'layperson' or 'expert' is dynamic and situated a one. To be an expert is to be positioned as an expert – via, say, an expert patient programme (EEP) for chronic disorders, or by virtue of holding professional 'license'. According to Rogers et al. (2009), the expert patient is one who can, among many other things, recognise, monitor and respond to symptoms in terms of an effective programme of self-management, and they note how the EEP as described in UK policy documents extends to encompass '70–80 per cent of patients'. In that context it is clear that our informants are expert – especially in the management of colds and flu. Yet the ways in which the lay people in our study integrate their recognition and monitoring into an explanatory model suggests a different kind of comprehension from that contained in



professional text-book discussions of such infections. In the case of flu, as we have seen, there is more emphasis on it as a whole body illness than there would be in professional discourse, and there is much more emphasis on 'the air' and the 'atmosphere' as a causative factor than one might find in professional epidemiological discussions of the flu. In this paper, we have explored such points of emphasis and pointed to such contrasts using relatively novel methods of data analysis and display.

Most interesting perhaps is the fact that lay people seem to assess information about disease and illness in the context of small worlds of family, friends and neighbours. We have pointed to that context by reference only to lay discussions concerning inoculation, wherein it certainly seems to be the case that, using Popperian logic, a sighting of one sick but vaccinated 'swan' can be sufficient to reject the hypothesis that all vaccinated swans are healthy (c.f. Popper, 1959, p. 27) – or that all vaccines are benign for all people. Such reliance on small 'N' and anecdotal evidence about associations between specific causes and particular effects is apparent in relation to the public understanding of many medical debates (Moore & Stilgoe, 2009). In some circumstances it can prompt new lines of research and investigation about the causes of illness (Brown, 1990). Under other circumstances it can hamper efforts to eradicate disease or establish 'herd' immunity (Petts & Niemeyer, 2004). How lay knowledge is acquired, structured and deployed is seemingly central to public health efforts whichever direction we approach it from. One of our aims has been to demonstrate how a study of lay diagnosis and lay epidemiology can play a part in such a project.

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