# Detecting and handling disagreement in multi-party health coaching

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We describe an empirical study of disagreement in multi-party healthcare coaching. We analyse a patient interview dataset for dissent, including both highly explicit examples using well-established conflict keywords and actions, and more subtle dissent in terms of language and gestures. We use our analysis to address questions such as: "What types of conflict occur in this context?", and "Can we identify different types of disagreement and corresponding resolution strategies?"

KEYWORDS: conflict, dialogue, disagreement, multi-party healthcare coaching

## 1. INTRODUCTION

Disagreement is common in health coaching, especially in contexts where the aim is to bring about behaviour change. For instance, a patient may disagree with a proposed course of action because they are reluctant to change their behaviour. Furthermore, if the health coaching is also multi-party, where more than one practitioner is in consultation with the patient, disagreement can then occur not just between the patient and the practitioners, but also between the practitioners themselves. In some cases, this is due to a lack of knowledge by one coach of the domain of another rather than outright contradiction of the other coach's statements (e.g. a GP questioning a proposal made by a

nutritionist), but in others it may be a genuine disagreement (e.g. a nutritionist and physical activity coach clashing over the best way to lose weight).

Examining real patient consultations presents a significant challenge from both an ethical and a practical point of view. We therefore constructed a data set from simulated sessions involving real healthcare professionals in consultation with a patient played by an actor, playing to a realistic persona.

In this paper we examine different ways in which disagreement is expressed in multi-party health coaching. Using data collected from sample coaching sessions, we highlight specific examples of both verbal and non-verbal disagreement from the patient to the medical practitioners; the medical practitioners to the patient; and between the practitioners themselves. We find that disagreement is communicated in a variety of different ways, from the highly explicit, using well-established conflict keywords and actions, to ways that are subtler in terms of language and gestures. We start to answer our two research questions: *"In what contexts does disagreement occur and how is it expressed in those contexts?"*, and *"Can we identify resolution strategies for different types of disagreement?".*

## 2. METHODOLOGY

This paper forms part of a larger study into conflict in healthcare. We used an approach based on grounded theory (Strauss and Juliet, 1994) to conduct a fine-grained study, in order to answer our research questions. This is a data-driven method to systematically build integrated sets of concepts in a topic where little is known. Researchers keep an open mind in order to build a theory which is purely grounded in data rather than influenced by prior work. As is the standard in grounded theory, once we had gathered our data, we followed four stages to analyse it:

1. **Open coding:** Use the raw data to suggest code definitions (anchors that help to identify key points in the data).
2. **Axial coding:** Development of concepts by combining codes into collections of similar content.
3. **Selective coding:** Grouping the concepts into categories – put the data back together by making connections across codes, categories, and concepts.
4. **Theory building:** Compare the central phenomenon across several dimensions, and formulate the major themes which have emerged.

Here codes, concepts and categories are different levels of abstraction and are the building blocks for a grounded theory. Grounded theory is a highly iterative process: in this paper we describe preliminary findings on a small subset of the data (examples 1-3 below). Further work will include iterating through the stages multiple times on the entire dataset. Features of our approach include:
a focus on empirical data from which our work derives
a focus on multi-disciplinary healthcare teams
an open exploration of conflict on healthcare, demonstrated with illustrative examples.

## 3. CONFLICT IN HEALTHCARE SETTINGS

Research on conflict is multidisciplinary, including argumentation, philosophy, rhetoric, anthropology, sociology, psychology, and linguistics.

Theories of conflict and disagreement in argumentation focus on the structural properties of arguments or disputes. For instance, Pollock characterises two types of disagreement as rebutting defeaters that deny a conclusion P, and undercutting defeaters that attack the reason for believing P, but not P itself (Pollock, 1995). He argues that these two types can describe the full complexity of defeasible reasoning.

Scholars in related fields such as sociolinguistics and pragmatics have investigated situated, cultural, and social meanings of conflict. Kakavá reviews contextual elements of disagreement, such as how conflict is initiated and how it develops, how it is organised sequentially, and its status and use in social interaction (Kakavá, 2001). In particular, she surveys work on (1) the structural properties of conflict; (2) the communicative strategies of conducting conflict; (3) conflict negotiation and resolution; and (4) the meanings of conflict.

There is much work on both intra-team and patient-team conflict in healthcare settings. Here, sources and costs of conflict are often considered to be established, for instance costs including burnout, higher absenteeism, higher turnover (Almost *et al*., 2016), hostility, emotionality and distraction from actual task accomplishment (Greer *et al*., 2012). Given the costs, the current focus of much work is now on researching conflict resolutions and interventions in order to minimize it. While conflict is widely seen as a negative force, impeding healthy collaborations, some authors point out positive roles it can play, such as enhancing team members' understanding and performance of a given task (*ibid.*).

## 4. THE PATIENT CONSULTATION CORPUS

Understanding how healthcare professionals and patients interact is challenging, both ethically and practically. Observing real consultations risks changing the dynamics and outcomes of those consultations through the presence of a recording device – for instance, a patient may be less forthcoming about a medical problem if they know they are being recorded, even if they have been given assurances of privacy. Furthermore, it is unusual to find two or more healthcare professionals in a single consultation. To address these problems, we employed the use of healthcare simulation to develop the **patient consultation corpus**, which we will now briefly describe in the remainder of this section.

Simulation within medical practice is a common process in used in medical training, underpinned by a number of educational theories (Gaba, 2004). In such an approach, the patient is portrayed by an actor playing to a specified persona and associated medical history, and medical professionals do as they would if the actor were a real patient. Similar role-playing techniques have been successfully used as a data collection tool in other sensitive contexts such as dispute mediation (Janier & Reed, 2016) in which attempting to record real consultations raises similar ethical and practical questions to the medical domain.

Key to successful healthcare simulation is careful design of the patient personas. It is important to ensure that the actors portray patients that are realistic, both in terms of their overall personality and the medical conditions they are experiencing. Using an iterative process that followed several cycles (including analysis by a medical practitioner) we developed four personas, which are summarised in Table 1. Note that while a gender is specified for the persona, this was not fixed: through only tweaking minor details, each persona was adaptable to be played by an actor of any gender.

| **No** | **Gender** | **Age** | **Personality** |
|---|---|---|---|
| 1 | Male | 57 | Know-it-all |
| 2 | Female | 63 | Anxious |
| 3 | Female | 50 | Unengaged |
| 4 | Male | 67 | Benchmark |

Table 1: Patient personas

The benchmark patient was regarded as being an engaged and consciences patient so as to provide a baseline comparator for the other personality types.

The Patient Consultation Corpus consists of nine sessions in total, using three different actors and five different healthcare

professionals in varying combinations. The different healthcare professionals are: a general practitioner (GP); a diabetes specialist; a podiatrist; a dietician; and a motivational interviewer (MI). Motivational interviewing is a patient-centred counselling approach, that is designed to help clients explore and resolve ambivalence.

## 5. EXAMPLES OF DISAGREEMENT

Here, we provide three examples of disagreement identified through an initial observation of the patient interview corpus while it was being constructed. In some examples, non-verbal cues are important to the style and type of disagreement; where relevant, we highlight these in square brackets (e.g. *[voice pitch raises]*).

### *5.1 Intra-team disagreement*

The first example of disagreement we identify is between two healthcare professionals:

> ***Dietician:*** *Cravings can be pretty tricky to manage, but the good thing is they do pass. And, actually, if you're having that at the same time every day, what you're developing there is a habit, of then every time you go and have a coffee, you're like mm, I could really do with my chocolate bar. And don't get me wrong, habits are pretty easy to develop, but actually to break them is a really, really tricky thing. But, within time, that craving will pass, which is a bit reassuring.*
>
> ***General Practitioner:*** *So, are you suggesting, and I don't want to put words in your mouth, but the chocolate bar, do you just cut them out? Because that seems a bit harsh! [raises eyebrows; slight laugh]*
>
> ***Dietician:*** *It does seem a little bit harsh, I suppose, and that's where we could have a discussion about actually what would be a realistic target for you.*

**Nature of the disagreement:** In this example, the general practitioner (GP) disagrees with the dietician as to whether or not the patient should stop eating chocolate entirely.

**How is the disagreement expressed?** After explaining to the patient about cravings and how to break them, the general practitioner (GP) interjects, asking if that means to cut out chocolate completely because

it "…seems a bit harsh". This was said in a light-hearted way with an element of laughter and raised eyebrows, emphasising that the GP is not outright contradicting the dietician, but instead is genuinely questioning the (believed) suggestion that the patient should completely cut chocolate out of their diet. Use of the word "seems" also demonstrates that the disagreement arises from intuition rather than knowledge (i.e. he did not say "…that **is** harsh").

**Resolution strategy:** The resolution strategy for this disagreement was seeded in the expression. The element of laughter from the GP along with the use of the word "seems" emphasised that the disagreement was casual, almost friendly. Furthermore, it was framed as being from intuition rather than knowledge, leaving an easy route for the dietician to respond.

**Was the resolution successful?** The dietician's response – "*It does seem a little bit harsh, I suppose*" – shows that the disagreement was immediately resolved. The dietician took on board what the GP said and used it as a way of seeding a further discussion about exactly what the patient should do to achieve a reduction in their consumption of unhealthy snacks.

*5.2 Embedded disagreement*

Our second example of disagreement is between a patient with a "know-it-all" persona, and two healthcare professionals – a dietician, and a motivational interviewer. The patient is determined not to eat carbohydrates (sometimes referred to as "carbs"), even if this helps control their blood-sugar levels. They also do not believe that there is a link between carbohydrates and sugar thanks to their own, online research.

> ***Dietician:*** *No. So, actually about a third of our diet, we recommend coming from starchy carbohydrate, so that's things like your bread and your pasta and your rice. You know, the types of carbohydrates that you've just actually mentioned.*
>
> ***Patient:*** *Well, I think we'll just have to agree to disagree on that one, because there's absolutely no way that I'm going to start taking breads and pastas and things into my diet, no.*
>
> *…*

***Motivational Interviewer (MI):*** *Okay, so you've kind of researched this, felt that this works for you. I guess Barbara's question was projecting forward, around about how might it be to continue on this long term? And what's your thoughts about that, and how you might see things, if you are experiencing that diet long term?*

***Patient:*** *I don't know how else you could possibly change it, apart from, you've said about carbs, which I'm obviously not willing to do, so I mean, is there another way around it, if you think that eventually I'm not going to be able to follow it, which I think is very critical of you, but?*

*…*

***MI****: Okay, so you don't see any relation between your low carb diet and your blood sugars dipping?*

***Patient:*** *No, no, because Google tells me that diabetes is due to sugar intake, and I'm not taking sugar, so…*

***MI:*** *Okay. So, I get that you have researched. Can I just ask, in your work, if you research a piece for your work, what do you search through?*

***Patient:*** *Well, I use the internet, but I also use libraries, there's different firms who have got past cases that you can look at, and you can look at manuals that you've already, I work for a toy manufacturing company, so there's different manuals that you can look at, to just get guidance from. There's lots of different things you can compare them.*

*…*

***Motivational Interviewer (MI):*** *How does that compare to your research about something as complex as diabetes, with a general search engine?*

***Patient:*** *Well, I mean, Google, you put in a question, you get information from all over the world, that's like the easiest way to get all the information in one place and there's lots of different sources you can look at, to make sure the facts are consistent.*

***MI:*** *So I could do your job just by putting a search term to Google?*

***Patient**: Oh no, you need years of experience, you need to train properly as a lawyer, learn all that, you need to do the work-shadowing and the placements, that's a completely different thing.*

***MI:** So, and I guess what I'm wondering is, as you draw that comparison in your mind, about the research you have done and the methods you've done to research diabetes to enhance your understanding of, what is effecting your wellbeing, it's not something you would do for your work base, because you wouldn't trust to that level of search and research.*

***[Period of silence]***

***Patient:** Well, I haven't thought about it like that, it's something I'd have to reflect on.*

*…*

***MI:** And I just wonder whether it might be useful to have a thought about that, and think whether that might be a conversation worth having, where we can have that open discussion, and you can understand where Barbara, as a dietician, is coming from.*

***Patient:** Well, I'm certainly open to listening.*

*…*

***Dietician:** So, the glycaemic index is a measurement really, it goes from zero to 100. The highest food you'll get for a glycaemic index is pure sugar. Because that raises your blood sugar the quickest. Yeah? So, anything lower in the glycaemic index, will raise your blood sugar much slower, it'll keep you feeling fuller for longer, and those are the types of carbohydrates that we really should be focusing more on, and as a population we could all do with including more low GI foods in our diet.*

***Patient:** Aha.*

***Dietician**: So, types of low GI foods are things like wholemeal granary breads, wholemeal pasta, wholemeal rice, beans and pulses as well.*

***Patient:*** *Now, that's something I would try. I'm really not keen on the bread and the pasta and the rice, but beans and pulses, I could incorporate that into a vegetable based meal.*

**Nature of the disagreement:** This example contains two instances of disagreement: an overall disagreement about whether or not the patient should eat more carbohydrates, and a second, embedded disagreement about taking advice.

The overall disagreement came about because the dietician recommended to the patient that they eat carbohydrates as part of a balanced diet; however, the patient believes that all carbohydrates leave them feeling bloated and as such they are not prepared to take on board the advice.

While attempting to resolve this overall disagreement, the motivational interviewer discovered that the patient does their own research using Google, and is prepared to believe that advice over what they are told by healthcare professionals.

**How is the disagreement expressed?** This is an example of very explicit disagreement: on several occasions the patient outright refuses to accept they should eat more carbohydrates. The embedded disagreement was also highly explicit, with the statement that "*Google tells me that diabetes is due to sugar intake"* when asked if they see the connection between low blood sugar and not eating carbohydrates. Furthermore, they used the expression "agree to disagree" in an attempt to stymie further discussion around the subject because their view was so deeply entrenched.

**Resolution strategy**: With the patient unmoving on the subject of eating carbohydrates, the motivational interviewer first tries to link their "low-carb" diet to their blood sugars dropping; this however deepens the disagreement because it reveals that the patient has done their own research via Google, and is believing that over what they are being told.

The motivational interviewer decides to therefore adopt a different approach: he steers away from the general conflict to something, seemingly, unrelated – asking the patient how they go about their job. He finishes this ostensible diversion by putting the patient's view back at them – that is someone could do their job just by using Google (in the same way the patient believes they can do the medical professionals' jobs).

By disengaging from the disagreement, the motivational interviewer encouraged the patient into reflecting on their stance. Using the patient's own job as a comparison to demonstrate by they should

listen allowed the motivational interviewer led them to reflect on their position. This in turn allowed the dietician to rejoin the discussion, providing new information that allowed the overall disagreement to be resolved.

*5.3 Addressing frustration head-on*

Our final example of disagreement stems from a patient feeling frustrated at the amount of advice she has been receiving. Having previously been advised to follow a certain diet, she has now been told she needs to take more care of her feet. This led to the following exchange:

> ***Patient:*** *Well, I mean, I'm trying to follow a diet. You know, the doctor's given me some sheets and things so I'm trying to do that but...*
>
> ***Podiatrist:*** *I know, it's difficult.*
>
> ***Patient:*** *...it's hard and it's...when you're out on the road all day, I mean, I am taking my lunch and things but, you know, you stop for petrol, you pop into the garage, it's easy to think, oh, I'll just pick up a quick snack...*
>
> ***Podiatrist:*** *Yes. Yes.*
>
> ***Patient:*** *...and what you think is healthy, you know, it's got these, sort of, oh, I can have something with nuts in it and then you look at the calories or the whatever, the carbohydrate I'm supposed to look at, aren't I...*
>
> ***Podiatrist:*** *Yes. Yes.*
>
> ***Patient:*** *...and if...you know, and you're like, oh, great, it's really high. Well, I've got it now, I'm going to eat it anyway.*
>
> ***General Practitioner (GP):*** *Can I...just, Linda, can I ask, you don't look very happy with what [the podiatrist] is saying. You look a bit pee'd off, actually. Is that fair to say?*
>
> ***Patient:*** *Well, yes, I just feel like there's...I feel like you've taken everything away. You know, like I'm dieting. I'm supposed to be not drinking. I'm supposed to be cutting out smoking and here*

*you are now telling me that I'm going to have something else to do.*

***GP:*** *Yes.*

***Patient:*** *It's like, oh my god, this just overtakes your life.*

***GP:*** *Yes.*

**Nature of the disagreement:** This disagreement stemmed from the patient's frustration at being given advice regarding how to take care of their feet. Having previously been given a lot of previous medical advice, this prompted the patient to express significant frustration at everything they have been told to do.

**How is the disagreement expressed?** While the disagreement itself is not made explicit, the patient's vocal expression of their frustration clearly demonstrates a reluctance to follow the advice being given.

**Resolution strategy:** The overall strategy adopted here was to first give the patient space to express their frustration, before then allowing them to vocalise the precise root cause of their issue.

Initially, the podiatrist gave the patient space: interjecting only occasionally to say "yes, yes". This however could not continue indefinitely, so the GP intervened and explicitly asked the patient if they were "p'eed off". This provided an opening for the patient to vocalise their general problem, that is the feeling of being overwhelmed and that adhering to medical advice "overtakes [their] life".

**Was the resolution successful?** Partly; while the GP's intervention prompted the patient to express their overall frustration more clearly and succinctly, it did not address the overall issue of requiring the patient to take more care of their feet. Nevertheless, it was still important to identify the patient's general complaint of being overwhelmed.

## 6. PRELIMINARY FINDINGS

In order to build a substantive theory of conflict in healthcare settings, we are following the stages of grounded theory as described above. We describe preliminary findings on the illustrative examples described above, which were selected as being interesting examples of conflict in healthcare.

**Open coding:** In the first stage, we identified and coded code definitions of interest via open coding. In example 1, for instance, we highlighted the use of humour, qualifiers ("seems", "a bit'") and gestures (raised eyebrows, smiling) in expressing the conflict, which all helped to keep the setting friendly and non-confrontational. Example 2 showed examples of conflict both as goal (how best to manage low blood sugar) and process (what is the best way to learn about diabetes management). Example 3 showed the resolution strategy of gentle listening and agreeing, with both practitioners using the strategy to sooth the patient's frustration.

**Axial coding:** In the second stage, we identified interrelationships between our codes and formed concepts by combining codes, to describe repeated patterns of interactions and conflict solving strategies in the conversation. Here, for instance, Example 1 showed the method of retreat as a resolution strategy (an open code) -- seen here via the concept of unequal power dynamics (senior male and junior female). We also see the concept of language, currently with the single qualifiers code. We also see how conflict can be used to identify a lack of understanding or knowledge, and if handled in a productive way, can play a role as trigger for negotiation and deliberation.

**Selective coding/Theory building:** In the third and fourth stages, we grouped concepts into categories, making connections across codes, categories, and concepts. The following main categories emerged: *conflict typ*e, *conflict expression*, *resolution* and *value*.

We show a visual representation of how these categories relate to each other and to different kinds of conflict in Figure 1.

The three examples of disagreement we have provided were examined primarily based on initial observation while the sessions were being recorded. While this gives us an overall view of the manifestation and eventual resolution of disagreement in a healthcare context, we do not assume that it provides a full picture.

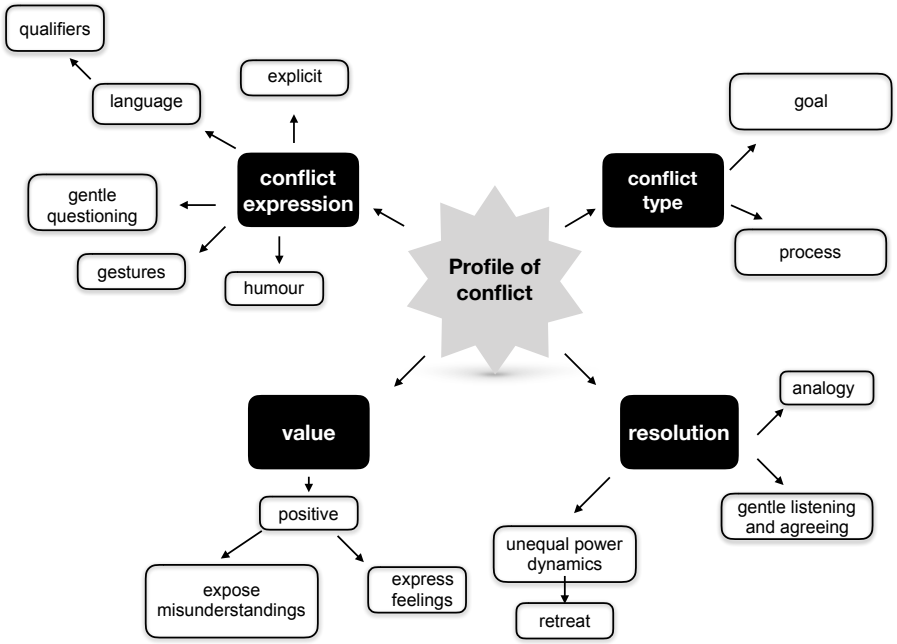


Figure 1 – Preliminary analysis of our three illustrative examples

While this work is still in preliminary stages, the analysis above shows how we might begin to answer our research questions: *"In what contexts does disagreement occur and how is it expressed in those contexts?"*, and *"Can we identify resolution strategies for different types of disagreement?".* The contexts so far in our data show that it arises both as a disagreement over a particular goal, or how that can best be satisfied, as well as questions over what the best way to do something. It is expressed explicitly as well as in more subtle ways, with qualified language. Gestures and humour are also important here. In our examples the resolution strategies all avoided direct confrontation, and involved use of analogies (which guides the conversation away from the conflict) and retreating.

Our pilot study also suggests further research questions, such as *"Is there a mirroring of disagreement type (explicit vs. subtle) and the strategy for effective resolution?"*; *"What positive outcomes arise from expressing disagreement?", "Are there any negative outcomes from expressing disagreement?", and "How is silence used to express or resolve conflict?".* The effect of power dynamics also merits further investigation.

## 7. CONCLUSION

Understanding disagreement in a medical domain is important if such disagreements are to be successfully and effectively resolved. In this paper, we presented three examples of such disagreement taken from a corpus of mock patient consultations.

Our first example showed a subtle disagreement between two medical professionals: a general practitioner (GP) questioned a dietician over cutting chocolate out of a diet. This disagreement was borne out of intuition rather than knowledge, demonstrated by the tone of surprise and element of humour the GP injected into his question. The dietician subsequently agreed that cutting chocolate out completely "seems…harsh". Resolving this disagreement was seeded by the disagreement itself: by expressing it in a casual way, the GP left it open for the dietician to reaffirm her view without any consequences.

The second example consists of an overall disagreement, about whether or not the patient should eat carbohydrates, and a second, embedded disagreement about taking on board advice. This disagreement was largely borne out of the patient's "know-it-all" personality and as such took significant time and effort to resolve. The resolution of the embedded disagreement was led by the motivational interviewer, who used the patient's job to encourage them to reflect on their viewpoint. This helped lead into the dietician resolving the overall conflict by providing the patient with new knowledge that allowed them to better understand types of carbohydrate that are good for them.

We have presented a pilot study into disagreement in healthcare: reporting our work on collecting data of both intra-team and patient-team disagreements, and our initial coding for thematic analysis to develop main categories and concepts. We now plan to conduct a full coding in which all data is classified according to these categories and concepts, and then develop and evaluate our theory.

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