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# **VALUES AND STANCES TOWARDS EXPERT KNOWLEDGE**

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ACADEMIC DISSERTATION

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# ABSTRACT

Laypeople's stances towards expert knowledge and the relationships of personal values to such stances are little studied and remain less than clear. The purpose of this dissertation was to shed more light on these stances and their relationships to personal values, and thereby to contribute to a greater understanding of them. More specifically, this study focusses on the readiness of laypeople to question experts' views, their non-adherence to doctors' instructions, and their preferences to seek health advice or treatment from either medical experts (i.e. doctors) or from practitioners of complementary and alternative medicine (CAM) as well as the associations of personal values with each of these.

This study used population-based samples from a range of European countries. One of the three sub-studies used survey data collected in Finland for the specific purposes of this study and the other two sub-studies used open-access data from the European Social Survey. The data was mostly quantitative and was analysed using statistical methods, such as logistic regression analysis.

The first of the three sub-studies examined the ten values specified in Schwartz's (1992) theory of basic human values as well as the values of rational truth and non-rational truth proposed by Wach and Hammer (2003b). The results showed that the values of rational truth and power were positively associated with the readiness to question experts' views (RQEV), whereas the values of security, conformity and tradition were negatively associated with RQEV. Moreover, the analysis of laypeople's reasons for not disagreeing with experts indicated that these reasons were related to individual factors (personal characteristics, unwillingness to disagree and trust in experts), situational factors (importance of the issue and practical realities), social risks and views on experts.

The results of the second sub-study indicated that endorsing openness-to-change values (vs. conservation values) was positively associated with non-adherence to doctors' instructions. In the third sub-study, endorsing conservation values (vs. openness-to-change values) was found to be positively associated with preferring doctors' consultations and negatively associated with preferring other practitioners and with the use of CAM treatments. It was also found that valuing self-transcendence (vs. self-enhancement) was positively associated with CAM use. Furthermore, a context-specific factor, namely country-level personal freedom, was found to be negatively associated with the preference to consult doctors, and positively associated with preferring other practitioners and the use of CAM.

This study demonstrates that taking into account motivational constructs, such as personal values, contributes to an understanding of how laypeople relate to expert knowledge.

# TIIVISTELMÄ

Maallikoiden tavoista suhtautua asiantuntijätietoon ja arvojen yhteyksistä näihin suhtautumistapoihin on toistaiseksi vain vähän tutkimustietoa. Tämä väitöstutkimus tarkastelee asiantuntijätietoon suhtautumista kolmesta näkökulmasta. Ensimmäinen liittyy valmiuteen kyseenalaistaa asiantuntijoiden näkemyksiä, toinen lääkäreiden antamien ohjeiden noudattamiseen ja kolmas halukkuuteen konsultoida ensisijaisesti joko lääkäreitä tai täydentävän ja vaihtoehtoisen lääketieteen harjoittajia terveysneuvojen tai hoidon saamiseksi. Tutkimuksen tavoitteena on lisätä ymmärrystä erilaisista suhtautumistavoista ja arvojen yhteydestä niihin.

Tutkimuksessa käytettiin väestöotoksiin pohjautuvia kyselyaineistoja Suomesta ja yli kymmenestä muusta Euroopan maasta. Aineisto oli pääasiassa määrällistä, ja sen analysoimiseen käytettiin tilastollisia menetelmiä, kuten logistista regressioanalyysia.

Ensimmäisessä tutkimuksen kolmesta osatutkimuksesta tarkasteltiin Schwartzin (1992) arvoteorian kymmentä arvoa sekä kahta teorian ulkopuolista, rationaaliseen ja ei-rationaaliseen totuuteen liittyvää arvoa. Tulokset osoittivat, että rationaaliseen totuuteen ja valtaan liittyvät arvot olivat positiivisessa yhteydessä valmiuteen kyseenalaistaa asiantuntijoiden näkemyksiä, kun taas säilyttämisarvojen (turvallisuus, yhdenmukaisuus ja perinteet) yhteydet tähän valmiuteen olivat negatiivisia. Lisäksi analysoitiin ihmisten raportoimia syitä siihen, miksi he eivät olleet esittäneet asiantuntijalle eriävää näkemystään tai olleet asiantuntijan kanssa eri mieltä. Näiden syiden havaittiin liittyvän yksilöllisiin ja tilannetekijöihin, sosiaalisiin riskeihin ja näkemyksiin asiantuntijoista.

Toisessa osatutkimuksessa tarkasteltiin sekä suhtautumista lääkäreiden ohjeiden noudattamiseen että ohjeiden mukaan toimimista (reseptin noudattaminen). Tutkimuksessa havaittiin, että muutosvalmiusarvot olivat yhteydessä vähäisempään ohjeiden noudattamiseen. Kolmannessa osatutkimuksessa puolestaan havaittiin, että säilyttämisarvot olivat yhteydessä yhtäältä taipumukseen konsultoida lääkäreitä ja toisaalta vähäisempään vaihtoehtoisten toimijoiden konsultointiin ja vaihtoehtoisten hoitojen käyttämiseen. Itsensä ylittämisen arvostaminen taas oli positiivisessa yhteydessä vaihtoehtoisten hoitojen käyttämiseen. Lisäksi todettiin, että myös maittain vaihtelevalla henkilökohtaisen vapauden tasolla oli merkitystä: Mitä vapaampia ihmiset olivat, sitä enemmän he olivat taipuvaisia konsultoimaan vaihtoehtoisia toimijoita ja käyttämään vaihtoehtoisia hoitoja. Vähäisempi vapaus taas oli yhteydessä taipuvaisuuteen konsultoida lääkäreitä.

Kaiken kaikkiaan tämä tutkimus osoitti, että ihmisiä motivoivien tekijöiden, kuten arvojen, huomioiminen voi auttaa ymmärtämään erilaisia tapoja suhtautua asiantuntijätietoon.

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Helsinki, September 2016  
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# LIST OF ORIGINAL PUBLICATIONS

This thesis is based on the following publications:

- I Ahola, S. (2016). Why (not) disagree? Human values and the readiness to question experts' views. *Public Understanding of Science*. Advance online publication March 17, 2016. doi: 10.1177/0963662516637818
- II Ahola, S. (2015). Human values and non-adherence to doctors' instructions across Europe. *Journal of Applied Social Psychology*, 45, 214–225. doi: 10.1111/jasp.12289
- III Ahola, S. (2016). Are personal values associated with preferences in seeking health advice or treatment in Europe? Manuscript submitted for publication.

The publications are referred to in the text by their roman numerals.

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# ABBREVIATIONS

CAM	Complementary and alternative medicine
CI	Confidence interval
CLOP	Cross-level operator analysis
ESS	European Social Survey
OR	Odds ratio
PUS	Public understanding of science
PVQ	Portrait Values Questionnaire
RQEV	Readiness to question experts' views



# 1 INTRODUCTION

The majority of people encounter experts<sup>1</sup> at some point in their life. Even though people may not personally meet or interact with experts on a daily basis, most of them nevertheless come across experts' views in some form, for example when experts give recommendations or comment on some current topic in the media. For instance, analyses of news material indicate that researchers and other experts are frequently used as sources in newspapers and newscasts (Albaek, Christiansen, & Togeby, 2003; Niemi & Pitkänen, 2016).

Laypeople depend on experts in numerous ways, particularly in modern societies characterised by a high degree of division of cognitive labour and specialisation (Bromme & Thomm, 2016; Scholz, 2009). Health and medicine serve as examples of domains in which it is usually not possible for laypeople to have all the relevant knowledge, and therefore it may be rational for them to rely on relevant experts or authorities in order to make judgements about issues in these domains (Cummings, 2014a).

A medical doctor is a typical example of an expert whose views and decisions directly affect laypeople's lives, even though expert opinion may influence people's lives indirectly, too (e.g., in the form of national or international nutrition recommendations). In many situations, it is important to listen to experts' views and follow their advice, since their views are usually more likely to be correct than non-experts' views (Weinstein, 1993).

Despite this, experts sometimes make mistakes (Weinstein, 1993) and their views may be influenced by interests or biases (Bornstein & Emler, 2001; Goldman, 2001). In most cases, it may be irrational to "defer to someone's opinion *absolutely whatever* that opinion might be" (Elga, 2007, p. 483). Therefore, it is important that laypeople evaluate experts' views (Kutrovátz, 2010) and be prepared to question them where warranted.

In cases in which people need expert advice, they must identify the relevant experts to consult (Cummings, 2014a). Laypeople seem to be able to judge which fields of expertise are relevant for specific scientific topics

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<sup>1</sup> An epistemic, cognitive or intellectual expert in a particular domain "is someone who possesses an extensive fund of knowledge (true belief) and a set of skills or methods for apt and successful deployment of this knowledge to new questions in the domain" (Goldman, 2001, p. 92). Therefore, epistemic expertise differs from performative expertise in that "epistemic expertise is the capacity to provide strong justifications for a range of propositions in a domain, while performative expertise is the capacity to perform a skill well" (Weinstein, 1993, p. 57). This dissertation adopts a wide understanding of the term expert, and considers also authorities (or other people in higher positions), such as teachers and superiors. It is worth noting that the concepts of expert and authority are closely related although not identical (Pirttilä-Backman, 1993).

(Bromme & Thomm, 2016), and to differentiate between conditions in which experts' views concerning complex public health issues are more or less valid (Cummings, 2014a). However, it may be challenging for them to decide which expert to ask or which expert to believe in everyday issues that have personal relevance (see Bromme & Goldman, 2014). Moreover, laypeople sometimes choose to consult others instead of conventional or authorised experts. For instance, when facing health problems, people may decide to seek advice or treatment from practitioners of complementary and alternative medicine (CAM) instead of relying solely on conventional medical experts. Indeed, the use of CAM treatments has increased in popularity even though there is only limited scientific evidence for their effectiveness (Pedersen & Baarts, 2010)<sup>2</sup>.

The relationships between personal values—what is important for people in their lives (Bardi & Schwartz, 2003)—and stances towards expert knowledge have been rarely examined (for related studies, see Devos, Spini, & Schwartz, 2002; Morselli, Spini, & Devos, 2012; Passini, 2015). However, since values by their definition “guide selection or evaluation of behavior and events” (Schwartz & Bilsky, 1987, p. 551), more generally serve as guiding principles in people's lives (Schwartz, 1992), and have been also found to be empirically associated with different attitudes and behaviours (Bardi & Schwartz, 2003; Boer & Fischer, 2013; Miles, 2015), it is likely that they also play a role in people's stances towards expert knowledge.

The relationships between personal values and stances towards expert knowledge have to date been rarely studied and therefore this study contributes to filling this gap. In this context particularly, there is a lack of research that would include a comprehensive set of values. The current thesis consists of three studies each of which examines the proposition that considering motivational constructs, such as values, may provide new insights into and can help in understanding different aspects of laypeople's stances towards expert knowledge. All three studies adopt Schwartz's (1992) theory of basic human values and analyse the associations of values with a particular aspect of relating to expert knowledge: readiness to question experts' views, non-adherence to experts' instructions, and preferences in seeking advice from experts.

More specifically, Study I examines the associations of personal values with the readiness to question experts' views (RQEV) in knowledge-related matters. It considers not only the ten values specified in Schwartz's theory, but incorporates also two truth-related values proposed by Wach and Hammer (2003a, 2003b), namely rational truth and non-rational truth, which have not been previously studied in relation to RQEV or related constructs. Study I also analyses people's reasons for not having disagreed with experts. Study II examines the relationship between values and non-

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<sup>2</sup> However, this naturally also depends on how the effects are measured and what is considered as evidence of effectiveness (Staud, 2011), as well as the type of CAM treatment.

adherence to doctors' instructions. To the best of the author's knowledge, this relationship has not been previously examined using a comprehensive set of values<sup>3</sup> (for related studies, see Gauchet, Tarquinio, & Fischer, 2007; Zhang, Dindoff, Arnold, Lane, & Swartzman, 2015). Study III investigates whether values play a role in people's preferences in seeking health advice from doctors or CAM practitioners as well as use of CAM. Even though different beliefs and personality traits have been found to be related to preferences in seeking health advice from medical doctors or CAM practitioners, values as such have been examined only in one study (Saher & Lindeman, 2005), which analysed beliefs about the efficacy of CAM but did not measure actual use of CAM.

The present study uses data collected from nationally representative samples from Finland (Study I) and a range of other European countries (collected by the European Social Survey; Studies II and III). Using data from a range of countries is advantageous, because it provides the opportunity to gain a more extended and robust view of the associations of values with other relevant constructs. It also allowed for examining whether the context of specific countries—in this case citizens' rights and freedom to make their own choices—play a role in individuals' preferences in seeking health advice (Study III), thus making a novel contribution to the existing literature.

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<sup>3</sup> See Karimi and Clark (2016) for a review of research on the role of values in heart failure patients' self-care decisions, including adherence to self-care recommendations. Karimi and Clark found that values were not often explicitly mentioned in these studies, but they seemed to play an integral role in this context.

## 2 PERSONAL VALUES

Summarising the recurring features in literature on values (e.g., Rokeach, 1973), Schwartz and Bilsky (1987, p. 551) defined the concept of human values as follows: “values are (a) concepts or beliefs, (b) about desirable end states or behaviors, (c) that transcend specific situations, (d) guide selection or evaluation of behavior and events, and (e) are ordered by relative importance.” To put it more briefly, values are desirable transsituational goals that vary in importance, and serve as guiding principles in people’s lives (Schwartz, 1992, 1994). Values have been studied using various approaches having somewhat different emphases (for reviews on value construct, see Hitlin & Piliavin, 2004; Rohan, 2000). Schwartz’s (1992) theory of basic human values and its refined version (Schwartz et al., 2012) emphasise the universal aspects of the content and structure of individual values, whereas Schwartz’s (2006a) theory of cultural value orientations focuses on cultural values and cross-cultural comparison, as does Hofstede’s (1980, 2001) theory. Inglehart’s (1977) modernisation theory and its revised version (e.g., Inglehart & Welzel, 2010) focus on cultural value change and cross-cultural differences. Other theories focus on the functions of values (Gouveia, Milfont, & Guerra, 2014: functional theory of human values) and morality and moral values (e.g., Haidt & Graham, 2007: moral foundations theory).

What differentiates individual values from some other closely related concepts? Values, as compared to attitudes, are more abstract and durable (Hitlin & Piliavin, 2004; Schwartz, 1992). As regards traits and values, they are both durable; however, values are motivational goals and refer to what is important for people, whereas traits are descriptions of peoples’ dispositions—what people are like (Parks-Leduc, Feldman, & Bardi, 2015; Roccas, Sagiv, Schwartz, & Knafo, 2002). Norms are related to external pressure—what people think they ought to do—in specific situations, whereas values are transsituational and refer to ideals (Bardi & Schwartz, 2003; Hitlin & Piliavin, 2004). Norms may hinder people from acting according to their values or ideals in situations in which normative pressures are high (Bardi & Schwartz, 2003). This applies particularly to those people who give high priority to conformism values (Lönnqvist, Walkowitz, Wichardt, Lindeman, & Verkasalo, 2009). Also, values are a way for articulating needs (Hitlin & Piliavin, 2004); they are cognitive representations of the needs and requirements of human existence—they concern biological needs of individuals, demands of coordinated social interaction, and demands for group welfare and survival (Schwartz, 1992; Schwartz & Bilsky, 1987).

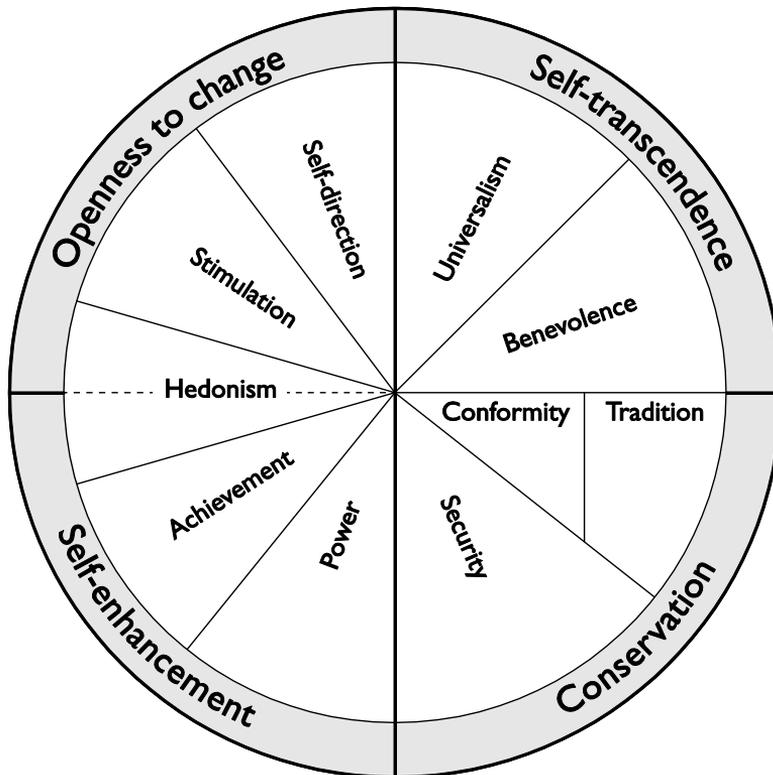
## 2.1 THEORY OF BASIC HUMAN VALUES

In his theory of basic human values, Schwartz (1992) specified ten values that he derived from the aforementioned universal requirements of individuals and groups. Schwartz's theory covers a comprehensive set of near universal values (recognised in most of the cultures and understood in the same way across cultures). It also specifies the interrelations of values as arranged to a motivational continuum, which is built on cross-culturally stable compatibilities and conflicts among values. As regards the content of values, Schwartz (1992) proposed ten basic values, each of which is defined and differentiated from other values by the motivational goal it expresses. *Benevolence* involves protecting the welfare of close others; *universalism* involves understanding, tolerating and protecting the welfare of all people and nature; *self-direction* refers to thinking and acting independently; *stimulation* concerns excitement, novelty and challenge; *hedonism* involves pleasure and satisfying sensuous needs; *achievement* involves the demonstration of one's own competence in terms of social standards, thereby gaining personal success; *power* involves social status and controlling other people and resources; *security* concerns safety, harmony and stability; *conformity* refers to self-restraint from actions that may violate social norms and upset or harm others; and *tradition* considers respect and commitment to the customs and ideas provided by culture or religion.

Values are arranged in a circular continuum (see Figure 1) according to the similarities and differences of their motivational goals (Schwartz, 1992, 1994; Schwartz et al., 2012). Compatible values that are easy to pursue at the same time are located close to each other, whereas conflicting values are located on opposite sides of the value circle. These relationships produce a two-dimensional structure: The first dimension, *openness to change–conservation*, contrasts values emphasising independence and change, readiness for new ideas, actions, and experiences (i.e., self-direction and stimulation) with values emphasising self-restriction, order, preservation of the status quo and avoiding change (i.e., security, conformity and tradition). The second dimension, *self-transcendence–self-enhancement*, contrasts values that motivate people to promote others' welfare (i.e., universalism and benevolence) with values that motivate people to pursue their own interests (i.e., power and achievement). Schwartz (1994) considered hedonism as sharing elements of both openness to change and self-enhancement. Schwartz (2012) also posited that since values form a motivational continuum, partitioning values into ten is an arbitrary choice, and therefore it is equally reasonable for researchers to use more broadly or narrowly defined values. Recently, Schwartz et al. (2012) proposed dividing the continuum into 19 values.

Moreover, since values form an integrated structure, the associations between values and other variables should follow a specific pattern. Therefore, the theory can be used to generate integrated hypotheses: if a

specific variable is associated positively with a particular value, it should be associated positively also with adjacent values and negatively with values on the opposite side of the value circle. The remaining relationships should decrease moving around the value structure in either direction from the highest (i.e., strongest positive) association towards the lowest (i.e., strongest negative) association.



**Figure 1** Theoretical value structure, adapted from Schwartz (1992).

There is much support for both the content and structure of Schwartz's (1992) theory of basic human values (Schwartz, 2012; Schwartz et al., 2001). The analyses of data from wide-ranging samples (including data from representative national samples and specific groups) from 82 countries support the idea that values are arranged into a motivational continuum (Schwartz, 2012). However, some evidence suggests that the data does not match the theoretical value structure equally well in all samples (Davidov, 2008; Steinmetz, Isidor, & Baeuerle, 2012), and that such a lack of fit is found especially in samples from socioeconomically less developed countries (Strack & Dobewall, 2012). Recent studies have found support for different central assumptions of the theory, including the relative importance of

different values for an individual (Bilsky et al., 2015), and the arrangement of values according to Schwartz's value circle within individuals (Borg, Bardi, & Schwartz, 2015). Further, values are relatively stable, but when intra-individual value change occurs, it seems to follow the theoretical structure in that an increase in importance of one value is accompanied by increases in importance of adjacent values and decreases in importance of conflicting values (Bardi, Lee, Hofmann-Towfigh, & Soutar, 2009). Novel research further suggests that children's and adolescents' value structures are similar to those of adults and follow Schwartz's model (Döring, Daniel, & Knafo-Noam, 2016).

## 2.2 TRUTH-RELATED VALUES: RATIONAL AND NON-RATIONAL TRUTH

While the focus in Schwartz's model (Schwartz, 1992, Schwartz et al., 2012) is on the universal aspects (content and structure) of values, less is known about values that may be motivationally mixed and/or non-universal. However, some studies have considered values other than those in Schwartz's model, for example health (Aavik & Dobewall, 2016), honour (Helkama et al., 2013), work values (Myrsky & Helkama, 2001), education (Portman, 2014) and truth (Wach & Hammer, 2003a, 2003b). The present study includes two truth-related values proposed by Wach and Hammer (2003a, 2003b, pp. 123–146), namely rational truth and non-rational truth. Wach and Hammer argue that these values represent two opposing sides of truth: *rational truth* concerns theoretical, logical and predictable truth<sup>4</sup>, whereas *non-rational truth* involves belief in magic, intuitiveness, fatalism and the denial of rationality. According to Wach and Hammer (2003b, pp. 137–138), rational truth corresponds to Weber's (1919/1970) ideas about intellectualist rationalization created by science, whereas non-rational truth parallels with that which gives meaning to the world.

As regards the location of the truth values in Schwartz's value structure, Wach and Hammer (2003b) hypothesised that rational truth would be located between self-direction and universalism. Indeed, their results from six European countries indicated that rational truth always emerged near self-direction—as a distinct region, as a subregion of self-direction or intermixed with self-direction—leading them to conclude that rational truth could be a subtype of self-direction. Furthermore, in line with their hypothesis, Wach and Hammer observed that universalism values were also adjacent to rational truth, although at the same time, were often intermixed with benevolence. Regarding non-rational truth, Wach and Hammer (2003b) hypothesised that it would be located between power and security. They

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<sup>4</sup> See Niiniluoto (1990) for a related discussion of epistemic values (knowledge, truth, truthlikeness, information) in the context of science.

tested this only in one country (France) and found that non-rational truth emerged closest to security, positioned in a region between security and power. Study I of the present dissertation examines the location of truth values in Schwartz's (1992) value structure in Finland and whether it corresponds to that observed by Wach and Hammer (2003b) in other European countries.

### 3 STANCES TOWARDS EXPERT KNOWLEDGE

An (epistemic) expert can be defined as “a person who is capable of providing strong justifications for a range of claims in a domain” (Weinstein, 1993, p. 71) or someone who not only has extensive knowledge in some domain, but who is also able to generate new knowledge in response to new questions in that domain (Goldman, 2001). For instance, researchers, when acting as experts, often need to answer or comment on new questions they have not chosen themselves (Nowotny, 2003; see also Albaek et al., 2003). The term authority is closely related to the term expert, even though these concepts are not identical. For example, Pirttilä-Backman (1993, p. 22) noted that “the term *expert* would always be translated into Finnish as *asiantuntija* and *authority* as either *auktoriteetti* or *asiantuntija*”.

According to Kelman and Hamilton (1989, pp. 54–55), authority refers to a role relationship<sup>5</sup> involving the holder of an authority position and the subordinate, which entitles the former to make demands on the latter, whereas the latter has the duty to obey. This relationship is not based merely on power, but on the perceived legitimacy, that is, a subordinate’s acceptance of the authority’s right to give orders (Kelman & Hamilton, 1989, pp. 55–56). It is also useful to differentiate between *bureaucratic* and *professional* authority (Kelman & Hamilton, 1989, pp. 128–129). While the legitimacy of the former’s authority is derived from their position in the hierarchy, that of the latter’s is based on their knowledge and skills. Professional authorities (e.g., medical doctors) can make requests, but do not have the right to demand their client (e.g., a patient) to obey. Therefore, according to Kelman and Hamilton (1989, pp. 128–129), the relationship between a professional and a client is based on preference rather than obligation, that is, a client’s choice of whether or not to follow a professional’s recommendation is based on that client’s considerations of such issues as whether doing so is beneficial to her or him. However, there are also similarities between these two types of authorities. For example, bureaucratic authority often requires certain professional skills and professional authority is often accompanied by a high hierarchical position (Kelman & Hamilton, 1989, pp. 128–129).

Stevanovic and Peräkylä (2012) differentiated between the *epistemic* and the *deontic* dimensions of authority, where the former concerns knowledge and the latter concerns rights and obligations. They (Stevanovic & Peräkylä, 2012, p. 298) stated that “epistemic authority is about *knowing* how the world ‘is’; deontic authority is about *determining* how the world ‘ought to

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<sup>5</sup> It is also worth noting that the word authority sometimes refers to the person or institution that has authority, whereas other times it refers to the normative power of the person or institution (Zagzebski, 2012, p. 103).

be”. Lindström and Weatherall (2015, p. 51) described these two dimensions of authority in the context of medicine as follows: “In the deontic domain the doctors’ stance—their right and obligation to recommend courses of treatment—is grounded in their epistemic authority as experts in medicine. However, the ultimate deontic authority resides with patients as they have the irrevocable right to refuse a treatment.”

This dissertation views the concept of expert widely to include both experts and authorities, such as teachers and superiors (for a review on the concepts of expert and authority, see Pirttilä-Backman, 1993; for a discussion on the concept of epistemic authority, see Zagzebski, 2012). The authority positions of teachers and superiors can be considered as containing elements of both bureaucratic and professional or epistemic authority. First, both positions are based on a legitimate role relationship in which the person holding the upper position is entitled to make demands that the subordinate (student or employee) should follow. Second, both positions require certain knowledge (particularly the position of a teacher) and skills.

In this study, following Scholz (2009), the term layperson is used to refer generally to non-expert relative to a particular domain. Non-expert and novice are terms that are often used interchangeably with the term layperson, although finer distinctions could also be made, for example by differentiating between an *ignoramus*—a non-expert in specific domain without a future prospect of becoming an expert in that domain—and a *novice*—currently a non-expert in a domain, but with a prospect of becoming an expert in that domain at some point in the future (Scholz, 2009).

Stances towards experts as well as the relationship between laypeople and experts have been addressed in various domains and contexts such as philosophy, personal epistemology, public understanding of science (PUS), and health care and medicine. Further, upward dissent or expressing one’s views to others in higher positions has been studied in the organisational domain, and in the context of education.

### **3.1 RELATIONSHIP BETWEEN LAYPEOPLE AND EXPERTS**

The relationship between scientific and technological experts and the public (or laypeople) has been discussed in the context of the field of PUS, and mainly using two contrasting approaches. First, the *deficit model* sees the relationship between scientific experts and laypeople as a hierarchical one-way communication process in which the experts’ task is to educate the illiterate or ignorant laypeople about scientific facts (Miller, 2001; Sturgis & Allum, 2004). It assumes that laypeople’s possible fears or doubts about scientific innovations or scientific experts’ advice result from not understanding the scientific reasoning behind them (Hansen, Holm, Frewer, Robinson, & Sandøe, 2003; Sturgis & Allum, 2004). In contrast, the

*contextual approach* takes into account the contexts in which people encounter scientific experts' knowledge claims and contexts in which people use knowledge (Wynne, 1991; Yearley, 2000). People may make judgements about the trustworthiness of scientific claims based on their previous knowledge and experience of the issue and of the institution providing the claims (Wynne, 1991; Yearley, 2000). Further, people may be motivated to gain scientific understanding of issues that are relevant to them, interpret scientific knowledge in relation to other forms of knowledge and, also, consult sources other than scientific ones for advice (Wynne, 1991).

However, people may lack sufficient motivation to make such efforts, but may also rely on heuristics or shortcuts such as *deference to scientific authority* (Brossard & Nisbet, 2007). Deference has been studied in contexts of scientific and technological controversies, for example biotechnology (Brossard & Nisbet, 2007), and it refers to “an individual’s likelihood to believe, or at least accept, information from scientific sources” (Binder, Hillback, & Brossard, 2016, p. 835).

From a philosophical perspective, some of the possible sources or origins of knowledge include perception, introspection, memory, reason, and testimony (Steup, 2015). Generally, much of what people accept as knowledge is testimonial—it is based on other people’s knowledge (Kutrovátz, 2010). Therefore, learning from other people is a crucial part of producing and spreading knowledge (Chinn, Buckland, & Samarapungavan, 2011). This is especially true in domains in which laypeople need to rely on experts, because they themselves lack the relevant background knowledge and understanding needed to evaluate the merits of knowledge claims (Bromme, Thomm, & Wolf, 2015; Hendriks, Kienhues, & Bromme, 2015). In cases in which laypeople are unable to assess the veracity of a knowledge claim directly (i.e., an assessment based on first-hand evaluations, including personal experience and knowledge, or thinking critically about the properties of the claim), they may need to rely on an indirect or second-hand evaluation, and transform the question “what is true” into “whom to believe” (Bromme et al., 2015; Hendriks et al., 2015). Medical knowledge serves as an example of a domain in which the role of sources is important, because laypeople rarely have enough knowledge of their own to really understand most medical topics (Kienhues & Bromme, 2012).

When deciding which expert to rely on, laypeople need to consider experts’ epistemic trustworthiness (Hendriks et al., 2015; see also Cummings, 2014a, 2014b). Building on earlier theorisation and empirical research, Hendriks et al. (2015) proposed that epistemic trustworthiness consists of three dimensions: judgements of an expert’s expertise (competence or ability); an expert’s integrity (honesty, objectivity, and adherence to scientific standards); and an expert’s benevolence (good intentions). Hendriks et al. (2015) suggest that whether epistemic trustworthiness leads to actual epistemic trust is an empirical question. They propose that “actual epistemic trust would be indicated for example if a

layperson would actually follow the advice of an expert or if she would turn to the expert for further information” (Hendriks et al., 2015, p. 17). The present study examines such cases of laypeople’s epistemic trust: following the advice of doctors, and turning to health-care experts (or other health practitioners) for advice or treatment.

Approaching laypeople’s stances towards expert knowledge from a different perspective, qualitative and quantitative studies have addressed laypeople’s explanations for disagreement between experts concerning specific scientific topics, including medicine, food additives, and climate change (Bromme et al., 2015; Kajanne & Pirttilä-Backman, 1999; Thomm, Hentschke, & Bromme, 2015), and forecasts in different domains (Dieckmann et al., 2015). Laypeople’s explanations for expert disagreement were found to be related to the general difficulty in obtaining scientific knowledge, including the features of the research process and the phenomenon being studied; experts’ potential material and immaterial interests; and experts’ characteristics and background (Bromme et al., 2015; Kajanne & Pirttilä-Backman, 1999).

### **3.2 UPWARD DISSENT: READINESS TO QUESTION EXPERTS’ AND AUTHORITIES’ VIEWS**

Studies have addressed people’s general willingness to argue or argumentativeness, which Infante and Rancer (1982) conceptualised as a trait comprising the interaction between the tendency to approach and to avoid arguments. For instance, Nussbaum and Bendixen (2003) found that the need for cognition and assertiveness were associated with a tendency to approach arguments, whereas particular epistemological beliefs (i.e., certain and simple knowledge), low levels of assertiveness and high levels of warmth were associated with avoiding arguments. Schommer-Aikins and Easter (2009) found that individuals who defined argument as constructive communication were more willing to argue than those people who defined argument as verbal aggression.

In the field of argumentation studies, Paglieri and Castelfranchi (2010) suggested that the strategic dimension of arguing should be taken into account when discussing an individual’s willingness to argue, and proposed that this dimension include the individual’s consideration of the benefits, costs and dangers of arguing. They stated that among the possible benefits are the goals that the individual is trying to achieve by arguing, be they dialogical (e.g., to persuade the other party of one’s claim) or extra-dialogical (e.g., to gain something by having persuaded the other party). Further, they noted that engaging in argumentation has a potentially negative side: costs may include, for instance, social exposure and the time invested. Moreover, it may involve such dangers as not resolving but instead deepening the disagreement. These ideas somewhat resemble those of Infante and Rancer

(1982, p. 46), who stressed the importance of taking into account the individual's situational "perceptions of the probability and importance of success and failure in a particular argumentative situation".

In the organisational domain, *employee voice* and *silence* refer to whether employees intentionally express or withhold their work-related ideas, suggestions, opinions, concerns and information about possible changes or improvements in work organisations (Morrison, 2014; Van Dyne, Ang, & Botero, 2003). Respectively, upward voice refers to expressing such work-related ideas and suggestions to a supervisor or someone else in a higher organisational position (for a review, see Morrison, 2014). Upward dissent (Kassing, 1997) is a specific form of upward employee voice that has been addressed in fewer studies and it is of particular interest for the present dissertation.

According to Kassing (1997), organisational dissent generally concerns employees' expression of disagreements and contradictory opinions. One of its forms, *upward dissent* (or articulated dissent), refers to expressing such dissent to management or supervisors (Kassing, 1997). In Kassing's (1997) conceptualisation, dissent begins with a triggering event (i.e., experiencing dissent), after which an employee may decide to express their dissent to an upward (or to some other) audience. The types and focus of dissent-triggering events can vary and include topics related to employee treatment, organisational change, decision making, inefficiency of work practices and processes, work role and responsibilities, resources, unethical practices, performance evaluation, and preventing harm (Kassing & Armstrong, 2002). Dissent-triggering issues may be focussed on self, on others or concern the whole organisation (Kassing & Armstrong, 2002). The decision of whether or not to express dissent is made in light of different individual, relational and organisational factors that affect an employee's perceptions of whether their dissent will be perceived as adversarial or constructive and whether it involves a risk of evoking retaliation (Kassing, 1997). *Individual factors* concern the characteristics of the employees, such as their predispositions or traits, affiliation with the organisation and organisational position; *relational factors* involve the types and quality of relationships people have within organisations; and *organisational factors* refer to employees' perceptions of whether the organisational climate generally supports or impedes expressions of dissent (for reviews of empirical studies concerning these factors, see Kassing, 1997, 2008).

Milliken, Morrison, and Hewlin (2003) proposed a model of employee silence that shares many elements with Kassing's (1997) model. Milliken et al.'s (2003) model includes not only personal, organisational, and relationship characteristics that affect an employee's decision to remain silent (instead of speaking up), but also considerations of potential negative outcomes and whether speaking up will make any difference (or is futile). They view the first three factors as "exogenous to the decision process but as having an effect on how an employee will view the potential outcomes

associated with raising a concern” (Milliken et al., 2003, p. 1468). In their interview study among employees, Milliken et al. (2003) found that various fears and worries were central to employees’ decisions for not expressing their concerns at work to those above them. These anticipated negative outcomes involved such fears and concerns as being labelled or viewed negatively, damaging relationships with others, retaliation or punishment, or negatively impacting others. In her review on employee voice and silence, Morrison (2014) noted that the importance of employees’ safety and efficacy considerations in deciding whether to speak up or not is a recurring theme among studies on voice and silence. Indeed, upward dissent is more likely to be expressed when employees think that it is safe (not risky) and has an effect (is not futile). However, Morrison (2014) pointed out that silence especially may not always involve such calculations of costs and benefits, but may stem from more automatic or non-conscious processes. Further, she proposed that antecedents of employee voice and silence may be clustered into two more general groups—motivators and inhibitors.

Applying Kassing’s (1997) model of organisational dissent to the context of education, Goodboy (2011, p. 423) proposed that instructional dissent “occurs when students express their disagreements or complaints about class-related issues”. In their study of university students’ reasons for not complaining to their professor about an incident about which they were dissatisfied, Bolkan and Goodboy (2013) found that the majority of reasons concerned a lack of efficacy (i.e., thinking that complaining would not change or fix anything), which they considered as an organisational factor. They grouped the other reasons under the categories of personal factors (thinking that complaining is not worth the effort, seeing the problem as their own fault, embarrassed to mention it, did not know how to complain), relational factors (unapproachable teachers, feeling that complaining is inappropriate, preferring to manage their instructors’ impressions of them) and organisational factors (a fear of retaliation).

Focussing particularly on knowledge-related disagreements, Pirttilä-Backman and Keso (1998; Keso, 2002) studied Finnish university students’ reasons for not having disagreed with their teachers or other experts in knowledge-related matters. One group of these reasons concerned *knowledge or knowing* (i.e. feelings of ignorance, trust in the teacher’s expertise, or thinking that teachers provide only opinions, not knowledge), whereas another group of reasons concerned *a person, situation or stance* (i.e. considering debate as uninteresting or unimportant, seldom meeting teachers or experts, or considering the university atmosphere or “mass lectures” as lacking adequate support for expressing own views). Laypeople’s reasons for not disagreeing with experts or for not expressing disagreement with them are examined in Study I of the present dissertation.

Study I also addresses the relationship between personal values and laypeople’s readiness to question experts’ views (RQEV). Numerous studies have addressed the relationship of values with other variables and have

found personal values to be associated with a range of attitudes (Boer & Fischer, 2013), behavioural intentions, and behaviours (Bardi & Schwartz, 2003; Miles, 2015; Roccas & Sagiv, 2010). Even though values have been rarely included in studies examining stances towards expert knowledge, there is some evidence pointing to their relevance in such contexts. Regarding RQEV, values have been found to be associated with such related variables as trust in institutions (Devos et al., 2002; Morselli et al., 2012) and authoritarian submission (Passini, 2015). In these studies, values were conceptualised and measured using Schwartz's theory and measurement instruments. A common finding of these studies is that openness-to-change values tend to be negatively associated with trust in institutions (Devos et al., 2002; Morselli et al., 2012) and with submission to authority (i.e. passive obedience to authority; Passini, 2015), whereas conservation values tend to be positively associated. Therefore, individuals who prioritise openness to change may be more prepared to question experts' views, whereas those who value conservation may be less prepared to do so. On the basis of the motivational goals of values, rational truth appears to be particularly compatible with RQEV because of its focus on finding the truth, and likewise, self-direction and stimulation are compatible with RQEV since they are based on the motivation to pursue independence, new ideas and change. In contrast, security, conformity and tradition are less compatible with questioning experts' views because they emphasise the preservation of the status quo, self-restriction, and order.

Study I of the present dissertation examines these assumptions using population-based survey data from Finland. Therefore, it is important to consider some particularities of the Finnish context. As regards cultural values, Finland is characterised by an emphasis on intellectual autonomy, egalitarianism, harmony, and by low hierarchy and embeddedness (Schwartz, 2006a) as well as a low power distance (Hofstede, 2001). On the other hand, Finland is characterised by a relatively widespread trust in institutions and public authorities (European Commission, 2015). Therefore, these characteristics of the Finnish context could both enhance and hinder RQEV.

### **3.3 PATIENT NON-ADHERENCE TO DOCTORS' INSTRUCTIONS**

As noted above, this dissertation addresses two examples of epistemic trust in experts proposed by Hendriks et al. (2015), namely that a layperson follows an expert's advice or turns to the expert for further information. Both of these examples are studied in the context of health—following a medical expert's advice and turning to a medical expert or another health practitioner for advice or treatment. The first of these, patient adherence, is defined as “the extent to which patients follow the instructions they are given for

prescribed treatments” (Haynes, Ackloo, Sahota, McDonald, & Yao, 2008, p. 2), whereas non-adherence “describes the failure of a patient to follow recommended health behaviours and treatment advice given by the clinician” (DiMatteo, Haskard-Zolnierrek, & Martin, 2012, p. 74). Vrijens et al. (2012) describe adherence as a process having three components—initiation, implementation, and discontinuation. Accordingly, they note that non-adherence can emerge at any of these stages: patients may not start the prescribed treatment at all or start it late, their actual dosing may not correspond to the prescribed dosing regimen, and they may end the treatment too early. Finally, persistence refers to the length of time between initiation and discontinuation (starting and ending) of the prescribed treatment (Vrijens et al., 2012).

Compliance is a term that has been often used interchangeably with adherence, but these terms have different connotations. The term adherence is considered as less judgemental, as having fewer connotations of patient submission and passive obedience, and as better able to capture the idea of cooperation in the patient-doctor relationship (Lerner, Gulick, & Dubler, 1998; Vermeire, Hearnshaw, Van Royen, & Denekens, 2001; Vrijens et al., 2012; World Health Organization, 2003). Therefore, the term adherence is used in this dissertation. It is, however, worth noting that the term adherence has been criticised on the same grounds as compliance: as exaggerating the doctor’s control (Lerner et al., 1998; Steiner & Earnest, 2000); as failing to see the patient’s behaviour as being their own legitimate choice (Lerner, 1997); as suggesting that the patient needs to follow the prescription exactly as directed to gain benefit (Steiner & Earnest, 2000); and as potentially stigmatising patients who fail to do so (Lerner et al., 1998; Osterberg & Blaschke, 2005).

Undeniably, non-adherence may be rational in some situations and lead to better outcomes for the patient—for example in cases of errors of diagnosis or treatment (DiMatteo, 2004; see also Donovan & Blake, 1992). This notwithstanding, non-adherence is considered as a major health problem because it makes treatment less effective, which in turn contributes to increased morbidity, mortality, and health care costs, therefore affecting both quality of life and health economics (Hugtenburg, Timmers, Elders, Vervloet, & van Dijk, 2013; Osterberg & Blaschke, 2005; World Health Organization, 2003). In contrast, higher rates of adherence can lead to an improved health status of patients and yield economic benefits, for example by reduced use of medical resources (Krueger, Berger, & Felkey, 2005; World Health Organization, 2003).

As regards the rates of non-adherence, a meta-analysis of patient adherence across 569 studies found that on average 24.8% of all patients were non-adherent (DiMatteo, 2004). However, non-adherence rates vary depending on the diseases, treatment regimens (e.g., medication vs non-medication), and methods of measuring adherence (objective vs subjective measures, e.g., pill count vs self-report) (DiMatteo, 2004). For example, non-

adherence rates tend to be higher for chronic than acute conditions (Osterberg & Blaschke, 2005).

Empirical studies have identified hundreds of factors that may be associated with adherence (Kardas, Lewek, & Matyjaszczyk, 2013; Vermeire et al., 2001). However, comparing and synthesising the results of different studies is complicated due to the variation in definitions and methods of measuring adherence across the studies (Krueger et al., 2005; Vermeire et al., 2001) or due to a lack of a clear definition of adherence (Kardas et al., 2013). In their systematic review of 51 systematic reviews, Kardas et al. (2013) grouped determinants of adherence into five categories. They found that of the *socio-economic factors* they analysed, family and social support were positively associated with adherence, whereas lack of such support, as well as the social stigma of a disease were negatively associated. Moreover, economic factors such as costs, other financial constraints, and low socio-economic status contributed to non-adherence (though socio-economic status was unrelated in some reviews). Many different *healthcare system factors* were associated with non-adherence, including poor access to health care (though unrelated in some reviews), poor information about drug administration, poor relationship and communication between healthcare provider and patient, and poor follow-up. In addition to certain diagnoses, other *condition-related factors* were also associated with adherence. For example, absence of symptoms and clinical improvement were negatively associated with adherence, whereas disease severity was positively associated (or unrelated in some reviews). Furthermore, treatments that are less patient-friendly yielded lower adherence rates. Examples of such *therapy-related factors* are frequent dosing, presence of adverse effects, drug effectiveness, longer duration of the treatment, and drug type. Finally, the relationships between many *patient-related factors* and adherence were inconsistent across reviews, particularly as regards such demographic factors as age, gender, educational level, marital status, and ethnicity. Different health beliefs as well as knowledge of disease and treatment were also associated with adherence, as were different psychological factors (e.g., self-efficacy). Further, forgetfulness, as well as drug or alcohol dependence were associated with non-adherence as were psychiatric conditions, although the effects of comorbidities and patient history were generally inconsistent.

According to Vermeire et al. (2001, p. 340), adherence research should focus “on the reasons and motivations for the medication-taking behaviour”. Whether values feature among such motivations has been rarely addressed in studies on patient adherence. Some studies, however, have examined the role of personal values or important life goals in the context of adherence. Two previous studies used value scales devised particularly for those studies but they both mention Schwartz’s value theory as one of the sources they used for building their value scales. Gauchet et al. (2007) asked HIV patients to rate the importance of different values to them. They found that valuing other people (tolerance, respectfulness, and understanding toward others) was

associated with greater adherence as was also valuing “God and children” (starting a family, seeing the children grow up, believing in a god). They argue that these values may be related to social support that is known to be associated with adherence (e.g., Kardas et al., 2013). Further, they observed that valuing success (having a good job, being competitive and wealth) and sexuality (continuing to have sex, pleasure, love) were not associated with adherence.

Zhang et al. (2015) examined the associations of life goals with adherence among heart failure patients. Both health related and non-health related goals were considered, namely, heart failure symptom relief, physical wellbeing, social relationships, autonomy, and hedonism. The results indicated that the rated importance of different life goals was not associated with adherence. However, the extent to which the respondents considered life goals as compatible with self-care recommendations was associated with adherence in one of the three studied regimens. More specifically, considering important life goals as compatible with physical activity was associated with better adherence to exercise recommendations, whereas compatibility of life goals with dietary and weighing recommendations was not associated with adherence to these respective regimens (i.e., dietary restriction and daily weighing). In their review of the role of values in self-care decision-making among heart-failure patients, Karimi and Clark (2016) noted that sometimes patients felt that by following self-care recommendations they were unable to act according to an important value.

On the basis of the above, it appears that personal values are a potentially important, but thus far largely neglected, factor associated with non-adherence. For an individual, adherence or non-adherence might be a way of pursuing particular values. The opposition between openness-to-change and conservation values seem particularly relevant in the context of adherence. Individuals for whom openness-to-change values are important may be less likely to adhere to doctors’ instructions because non-adherence can be a way for them to pursue individual thought and action and provide excitement and challenge. By contrast, people who value conservation are motivated by self-restriction, order, and stability—goals that may be more compatible with adherence. Study II examines these propositions.

### **3.4 SEEKING HEALTH ADVICE OR TREATMENT FROM CONVENTIONAL AND UNCONVENTIONAL PRACTITIONERS**

When individuals experience health symptoms or negative changes in their health, and need health advice or treatment, they may ponder who will best answer their questions. This study considers two such sources of health advice or treatment that people may turn to—experts within conventional medicine (also referred to as Western or biomedicine; Wootton & Sparber,

2001) and practitioners of complementary and alternative medicine (CAM). The World Health Organization (2000) defines CAM as “a broad set of health care practices that are not part of that country's own tradition and are not integrated into the dominant health care system”. CAM treatments may be used in conjunction with conventional medicine (i.e., complementary) or instead of it (i.e., alternative) (Caspi, Koithan, & Criddle, 2004), with the former being more common (Hildreth & Elman, 2007).

Individuals' choices in seeking health advice may depend on a number of factors including not only socio-demographic (e.g., age, gender, education, income) and health-related variables, but also social and psychological variables (e.g., social support, personality, world views and beliefs), as well as sociological factors (e.g., cultural context) (Stratton & McGivern-Snofsky, 2008). CAM users and users of conventional medicine are characterised by somewhat similar attributes and thus it is not easy to differentiate between them on the basis of socio-demographic and health-related factors (Hildreth & Elman, 2007). The common characteristics include such factors as female gender, higher education, and poor health (Hildreth & Elman, 2007), although it should be noted that not all findings were consistent across different studies (Bishop & Lewith, 2010). Further, old age (but also very young age) is associated with more frequent use of conventional medicine (Bishop & Lewith, 2010; Hildreth & Elman, 2007), while CAM users are more likely to be young or middle-aged (Bishop & Lewith, 2010; Ernst, 2000; Frass et al., 2012), although the effects of age are difficult to compare across studies of CAM use that included different age ranges (Bishop & Lewith, 2010).

Regarding (social) psychological factors, studies that have examined the role of values, world views, personality traits or perceptions of the self in the context of conventional or complementary and alternative health care utilisation are the most relevant for the present study. Of these, the relationships of personality traits have been studied the most extensively, particularly openness to experience. Several studies observed a positive association between openness to experience and more frequent or more varied use of CAM treatments and consultations with CAM practitioners (Hildreth & Elman, 2007; Honda & Jacobson, 2005; Sirois & Purc-Stephenson, 2008) and, also, with having used CAM (Thomson, Jones, Browne, & Leslie, 2014a). Further, new and infrequent users of complementary medicine scored higher on openness than conventional medicine users (Sirois & Gick, 2002). However, openness to experience was not consistently associated with use of either CAM or conventional medicine across all studies or when measured differently within a particular sample. For example, openness to experience was not associated with the number of conventional health service visits, did not distinguish CAM users from non-users (Hildreth & Elman, 2007), was not associated with an intention to try CAM before conventional medicine (Thomson et al., 2014b), and was not associated with CAM usage (Furnham, 2007). It should be noted that the

measurement of openness to experience varied across these studies, and that some studies used a single item to measure it. As regards other personality traits, Honda and Jacobson (2005) found a negative association between extraversion and use of a particular type of CAM (mind–body therapy), and Sirois and Purc-Stephenson (2008) found that agreeableness was positively associated with the breadth and frequency of CAM consultations.

To sum up, though not all findings concur, openness to experience tends to be associated with CAM use, and there is some evidence suggesting that those who scored lower in openness may rely more on conventional medicine. Openness-to-experience traits and openness-to-change values are conceptually similar and also empirically associated (Fischer & Boer, 2015; Parks-Leduc et al., 2015). They both involve the pursuit of new and stimulating ideas and actions (Fischer & Boer, 2015).

CAM use was also found to be associated with perceiving oneself as unconventional (i.e., less conforming, traditional, habitual) (McGregor & Peay, 1996) and as being more likely to take risks (Sturm, 2000). Risk taking is somewhat similar to the motivating goals of stimulation (i.e., excitement and challenge in life), which is one of the openness-to-change values, whereas conventionality is similar to tradition and conformity, which are conservation values. Accordingly, individuals who prioritise openness-to-change values may be more likely to use CAM and to prefer consulting CAM practitioners, whereas those valuing conservation may be more likely to prefer turning to conventional practitioners for advice or treatment. Study III tests these propositions.

Personal values, per se, have been rarely considered in the context of preferences in seeking health advice, although the associations of different beliefs and belief systems with CAM use have been studied (for a review, see Bishop, Yardley, & Lewith, 2007). For example, Astin (1998) found that a specific combination of values and world views (including ecological sustainability, interest in the foreign and exotic, interest in women's issues, altruism, self-actualisation, spirituality, social conscience and optimism) was associated with CAM use (having used some form of CAM within the previous year). On the basis of Astin's results Saher and Lindeman (2005) hypothesised and found a positive (albeit small) association between valuing self-transcendence (vs. self-enhancement; measured using a short version of the Schwartz Value Survey) and believing in the efficacy of CAM treatments. Although Saher and Lindeman used Schwartz's (1992) value theory, they included only one of its two main dimensions. Further, they measured CAM beliefs, not CAM use nor preferences in seeking health advice or treatment. Since Saher and Lindeman's results suggest that individuals who endorse self-transcendence (over self-enhancement) may be more likely to use CAM or to prefer CAM practitioners' advice, Study III considers this value dimension, as well.

Studies II and III of the present dissertation use data from the European Social Survey (<http://www.europeansocialsurvey.org/>) to examine the

relationships between values and stances towards expert knowledge in the context of health care. Study II uses data from the ESS round 2 (Jowell and the Central Co-ordinating Team, 2005) and Study III uses data from the ESS rounds 2 and 7 (European Social Survey, 2015). Each of these ESS rounds featured a different rotating module related to health. Neither of these modules have been included in any other ESS rounds.

ESS round 2 included items measuring two aspects of patient non-adherence—non-adherent views and behaviour. Only non-adherent behaviour has been studied previously using the ESS round 2 data. More specifically, Larsen, Stovring, Kragstrup, and Hansen (2009) and Stavropoulou (2011) examined the associations between various sociodemographic variables and non-adherent behaviour, the latter of which was measured by the respondents' self-reports of their behaviour in response to a medical prescription (the extent to which respondents used the medicine as prescribed by a doctor). In addition to demographics, Stavropoulou (2011) included items measuring respondents' general perceptions of the doctor–patient relationship and whether they thought they have generally enough choice regarding choosing their general practitioner (GP). Neither of these studies included personal values, and thus the current study adds to these by including both non-adherent views and behaviour and by examining personal values in the context of patient non-adherence (Study II).

In addition to the two items above, ESS round 2 featured items measuring preferences in seeking health advice or treatment (hypothetical symptom scenarios), and ESS round 7 included items on the use of different forms of CAM. Grosse Frie, Eikemo, and Von Dem Knesebeck (2010) used data from ESS round 2 to study the relationships between education and a preference to consult a doctor across different symptom scenarios but they did not include personal values.

Study III adds to the existing literature by including Schwartz's (1992) two main value dimensions—conservation vs. openness to change and self-transcendence vs. self-enhancement; by examining the associations of these dimensions with CAM use and with preferring to seek health advice or treatment from doctors on one hand and from other practitioners on the other; and by using data from a range of European countries collected at two time-points.

A further main contribution of Study III is that it considers the context of specific countries by including a particular country-level factor. This factor, personal freedom, or opportunity in Porter, Stern and Green's (2015) terms, refers to the extent to which citizens of a particular country have personal rights, ability to make their own choices and reach their potential, have access to advanced education and are not being restricted by prejudices or hostilities (Porter et al., 2015). People living in countries characterised by a higher level of personal freedom may prefer consulting other practitioners and to use CAM treatments for their health more, whereas people living in

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countries with less personal freedom may rely more on conventional medical experts.

## 4 AIMS OF THE STUDY

The main aim of this thesis is to examine the role of personal value priorities in the stances of individuals towards expert knowledge. As the reviewed literature indicates, values have been rarely studied in this context, and therefore this study set out to explore the relationships of values with three different constructs that are taken to reflect stances towards expert knowledge: 1) readiness to question experts' views, 2) non-adherence to doctors' instructions, and 3) a preference for medical experts versus other practitioners for health advice or treatment. In addition to the ten values included in Schwartz's (1992) value theory, this study incorporated two truth-related values—rational truth and non-rational truth—proposed by Wach and Hammer (2003b). On the basis of both the motivational goals of values and the results of previous studies, it was expected that the value dimension contrasting *openness to change* and *conservation* would be particularly relevant regarding stances towards expert knowledge.

Study I examined the location of rational truth and non-rational truth in Schwartz's value structure. On the basis of basis of Wach and Hammer's (2003b) studies it was hypothesised that rational truth would be located closer to self-direction but also adjacent to self-transcendence values, and that non-rational truth would be located closer to security and adjacent to power (Hypothesis 1). The relationships between values and readiness to question experts' views (RQEV) were also examined in Study I. It was hypothesised that self-direction, stimulation and rational truth would be positively associated with RQEV, and conversely, security, conformity and tradition negatively associated with RQEV (Hypothesis 2). Study I further explored people's reasons for not disagreeing or not expressing disagreement with experts and the topics on which they have questioned experts' views.

Study II considered the relationships of values with two types of non-adherence: non-adherent views and non-adherent behaviour in response to doctor's instructions. It was expected that openness-to-change (vs. conservation) values would be positively associated with non-adherent views and behaviour (Hypothesis 3).

Study III examined the associations of values with preferences in seeking health advice. It was hypothesised that endorsing conservation (vs. openness to change) would be positively associated with preferring doctors' advice or treatment; negatively associated with preferring other practitioners; and negatively associated with use of CAM treatments (Hypothesis 4). It was also hypothesised that self-transcendence (vs. self-enhancement) would show secondary (i.e. smaller) and positive associations with the preference to consult other practitioners and with CAM use (Hypothesis 5). Moreover, it was expected that country-level personal freedom would be negatively

*Aims of the study*

associated with preferring doctors' advice and positively associated with preferring other practitioners' advice and with CAM use (Hypothesis 6).

## 5 METHODS

### 5.1 PARTICIPANTS

The current dissertation draws upon data from three different datasets. The first set was collected in 2010 using a postal survey questionnaire sent to 1000 randomly sampled Finnish-speaking Finns who ranged in age from 15 to 65 years (at the time of sampling) and lived in mainland Finland. Of the total of 326 returned questionnaires, six were unusable, and therefore, the final sample size was 320 respondents, of which 60.9% were women and 38.4% men (two responses were missing), having an average age of 45.8 years ( $SD = 14.9$ ) (three responses were missing). This dataset was used in Study I.

The other two datasets were collected by the European Social Survey (ESS) from representative samples of persons aged 15 and older using face-to-face interviews. The data used in this dissertation are from ESS rounds 2 and 7 (ESS Round 2: European Social Survey Round 2 Data, 2004; ESS Round 7: European Social Survey Round 7 Data, 2014), which were collected in 2004/2005 and 2014, respectively. Round 2 comprises 25 European countries and the first edition of round 7 comprises 15 countries. Studies II and III used data from the following 14 countries from ESS round 2: Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Iceland, Luxembourg, Netherlands, Norway, Poland, Sweden and Switzerland. Additionally, Study III used data from 12 countries from ESS round 7 (all of the countries listed above except Iceland and Luxembourg, neither of which participated). Countries were chosen on the basis of the results regarding the measurement (metric) invariance of the 21-item Portrait Values Questionnaire (PVQ), which is used in ESS to measure Schwartz's (1992) ten basic values. These results indicate that it is possible to confidently measure human values and to study the associations between values and other constructs in these countries (Davidov, 2008, 2010; Davidov, Schmidt, & Schwartz, 2008). Response rates ranged from 43.6% (France) to 79.1% (Estonia) in ESS round 2 (European Social Survey, n.d.-a) and from 31.4% (Germany) to 65.8% (Poland) in ESS round 7 (European Social Survey, n.d.-b).

In Studies II and III, following Schwartz's instructions on the ESS Education Net website (<http://essedunet.nsd.uib.no/cms/topics/1/>), respondents who had more than 5 values missing on the PVQ and those who chose the same response option for more than 16 PVQ items were excluded. After excluding such respondents ( $n = 1,605$  for round 2 data;  $n = 587$  for round 7 data) and 14-year-old respondents ( $n = 1$  for round 2 data,  $n = 2$  for round 7 data), the sample size was 24,262 for round 2 and 21,870 for round 7. Similarly, in Study I, respondents who had omitted more than 30% of the

PVQ items ( $n = 3$ ) were excluded from the analyses involving values (cf. Schwartz & Rubel, 2005).

## 5.2 MEASURES

### 5.2.1 VALUES

The Portrait Values Questionnaire (PVQ; Schwartz, 2001; Schwartz et al., 2001) was used to measure the ten basic values of Schwartz's (1992) value theory. Each PVQ item describes a person in two sentences that are compatible with one basic value. Therefore, each of these verbal portraits refers implicitly to the importance of that value. For example, the following item measures conformity: "It is important to him/her always to behave properly. He/she wants to avoid doing anything people would say is wrong". The respondent is asked to evaluate the similarity of the person described in the item to themselves using a Likert-type six-point scale, the endpoints of which are "not like me at all" and "very much like me". The PVQ is gender matched with the respondent in languages that have different third person personal pronouns for males and females. Finnish, for example, has only one third person personal pronoun, and it is not gender specific, therefore only one version of PVQ was needed in the Finnish version of the questionnaire. Studies II and III used the 21-item PVQ that is used in the ESS to measure values. Study I used the Finnish translation of the 40-item PVQ (Koivula & Verkasalo, 2006). To measure rational truth and non-rational truth values, six items developed by Wach and Hammer (2003b, pp. 141–142) were added to the questionnaire. For example, one of the items measuring rational truth is as follows: "He/she thinks that it is always necessary to progress and to deepen one's knowledge. What is true is important to him/her." An exemplary item of non-rational truth is: "This person thinks that the reason does not lead to true knowledge. It is important to him/her to rely on nothing but his/her instinct when making important decisions." Wach and Hammer's (2003b) six items were translated from French to Finnish using a back-translation procedure (however, translations from French to English are the author's).

In Study I, a value score was computed for each of Schwartz's ten values and Wach and Hammer's two values. Cronbach's alphas ( $\alpha$ ) were .76 for benevolence, .82 for universalism, .61 for self-direction, .76 for stimulation, .82 for hedonism, .88 for achievement, .76 for power, .65 for security, .68 for conformity, .47 for tradition, .71 for rational truth and .53 for non-rational truth.

In Study II, four higher order values were created by computing a mean score for each ten values separately, and then averaging the values belonging to each higher order value (hedonism was included in self-enhancement) (Feather, 1995). Cronbach's alphas for the pooled data from 14 countries

were .63 for openness to change, .73 for conservation, .70 for self-enhancement, and .69 for self-transcendence. Within countries, Cronbach's alphas ranged from .59 to .70 for openness to change; from .66 to .74 for conservation; from .66 to .81 for self-enhancement; and from .64 to .72 for self-transcendence.

Studies II and III also used value dimension variables. In Study II, *openness to change* (vs. *conservation*) was computed by subtracting the mean of conservation from the mean of openness to change, and *self-enhancement* (vs. *self-transcendence*) was computed by subtracting the mean of self-transcendence from the mean of self-enhancement (for studies using this procedure, see Feather, 1995; Vauclair et al., 2015). Study III used the weights devised by Verkasalo, Lönnqvist, Lipsanen and Helkama (2009) to compute two value dimensions—*conservation* and *self-transcendence*. Verkasalo et al. used data from ESS rounds 1 and 2 to calculate their weights, and concluded that the two-dimensional factor structure they obtained was extremely robust across these rounds. They reported a Cronbach's alpha of .62 for the conservation dimension and of .54 for the self-enhancement dimension. Each value dimension variable reflects the relative importance that the respondent places on the values on one pole of the dimension as compared to values on the opposing pole of that same dimension. For instance, a high score on *conservation* indicates that the respondent values conservation relatively more than openness to change.

Schwartz (1992) recommended controlling for the mean importance of values for an individual, which has become a common procedure in value research (Bardi, Buchanan, Goodwin, Slabu, & Robinson, 2014). In Studies I and II, value scores were centred around each respondent's personal mean of all value items by subtracting the personal mean from the mean of items indexing a particular value (Schwartz, 2007). Such controlling for the mean importance of values is advisable, because it takes into account differences in the scale use between individuals, turns the value scores into value priorities and thus allows for assessing the relative importance instead of absolute importance of values for an individual, and produces more accurate and meaningful associations between values and other variables (Borg et al., 2015; Parks-Leduc et al., 2015; Schwartz, 1992). Such centring was not necessary in Study III, because Verkasalo et al.'s (2009) dimensions include a control of response tendency.

### **5.2.2 READINESS TO QUESTION EXPERTS' VIEWS**

As regards readiness to question experts' views, the respondents were provided with the following instruction adapted from Pirttilä-Backman and Keso (1998) and Keso (2002):

*Recall a situation in which you disagreed with an expert (such as doctor, teacher, manager, subordinate) about some specific piece of information or knowledge-related matter. In case more than one situation comes to your mind, choose the one that has been the most important to you personally. Write briefly what it was about into the box below: From which field was the expert? What was the topic of your disagreement? How did the episode proceed? After that, respond to the questions below<sup>6</sup>. If you have never disagreed with an expert or never expressed a differing opinion, explain why in the box below.*

One third of a page was provided for a written response, and the length of the responses in handwritten Finnish ranged from one word to slightly exceeding the space provided. Overall 251 respondents provided a response, while 69 did not.

RQEV was inferred from these written accounts as follows. An initial categorisation and a coding manual of the relevant categories for the RQEV were formed based on a careful reading of accounts. In turn, the categorisation and the coding manual were piloted by the author and another researcher, who then discussed all the disagreements in coding, which led to some modifications in the coding manual and categorisation. The final categorisation of the RQEV consisted of seven categories. The intercoder reliability of the categorisation scheme was assessed by an independent coding of 17.5% of the 251 accounts, which resulted in a Cohen's kappa of .89.

These seven categories were further combined into three categories. The first category, *clear RQEV* ( $n = 162$ , coded as 1) comprised two types of accounts: those in which the respondent reported a particular disagreement incident with one or more experts ( $n = 145$ ); and those in which the respondent expressed a critical stance towards experts or wrote that he or she has disagreed with them ( $n = 17$ ). Likewise, the second category, *emerging or no RQEV* ( $n = 61$ , coded as 0), involved two types of accounts: those in which the respondent showed only some emerging criticism towards experts or expressed (sometimes indirectly) having had opinions of their own ( $n = 25$ ); and those in which the respondent indicated not having disagreed or not having expressed disagreement with experts (it was sometimes impossible to clearly differentiate between these) or showed no critical stance towards them ( $n = 36$ ). The third category, *responses that cannot be interpreted* ( $n = 28$ , coded as missing), involved three types of accounts: those that reported a disagreement but in which the opposing side was not mentioned, or in which it was unclear what roles were taken by the respondent and the opposing side ( $n = 15$ ); accounts in which the respondent wrote that he or she could not recall any particular incident, could not say, or stated that he or she would skip the question or had no time to respond ( $n =$

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<sup>6</sup> These questions were related to different aspects of the reported disagreement incident.

12); and one reported a disagreement in which the respondent played the role of an expert.

Furthermore, the author perused all 251 accounts to identify accounts giving reasons for not disagreeing with experts or for not expressing disagreement with them. Both the accounts involving general comments ( $n = 58$ ) and the accounts including specific comments (relating to a particular disagreement with a particular expert,  $n = 5$ ) were included (total  $n = 63$ ). It was possible to place different parts of individual accounts into different categories in the categorisation system that was formed after several iterative rounds of categorisation. Finally, accounts in which the respondents reported a disagreement incident with an expert or with several experts ( $n = 145$ ) were analysed to identify the topics of these disagreements. Each account was coded to only one main topic category.

### **5.2.3 NON-ADHERENCE TO DOCTORS' INSTRUCTIONS**

Non-adherence was measured using two self-reported single items available in the ESS round 2. The first item was related to views about non-adherence to doctors' instructions. The respondent was asked to report her or his agreement with the statement "It is best to follow doctors' orders" using a five-point Likert scale. This variable was non-normally distributed, with a skewness of  $-0.95$  ( $SE = 0.02$ ) and a kurtosis of  $1.57$  ( $SE = 0.04$ ), and was therefore recoded into a binary variable: those responding "agree" or "agree strongly" were considered as adherent (coded as 0) and those responding "neither agree nor disagree", "disagree" or "disagree strongly" were regarded as non-adherent (coded as 1).

The second item was related to adherent vs. non-adherent behaviour and was measured by asking the respondent to "think back to the last time a doctor prescribed you a medicine you had not had before. Which statement on the card comes closest to what you did with this prescription?" Following Stavropoulou's (2011) procedure, respondents were categorised as adherent (coded as 0) or as non-adherent (coded as 1): Those who chose the statement "I used the medicine exactly as prescribed" were regarded as adherent, whereas those who chose one of the following three statements were considered as non-adherent: "I didn't collect the medicine from the pharmacy", "I collected the medicine but didn't use any of it", or "I used some or all of the medicine but not exactly as prescribed". Other responses (respondent was unable to remember the last occasion, had never had a prescription from a doctor, or provided another answer) were coded as missing.

### **5.2.4 PREFERENCES IN SEEKING HEALTH ADVICE OR TREATMENT**

Preferences in seeking health advice or treatment were measured using the following items available in ESS rounds 2 and 7. In ESS round 2, the

respondents were asked who (nobody, friends or family, pharmacist/chemist/drug store, doctor, nurse, internet/web, medical helpline, other practitioner) they would go to first for advice or treatment in four symptom scenarios (very sore throat, serious headache, serious sleeping problems and serious backache). An exemplary item is: “Suppose you had a very sore throat. Who, if anyone, would you go to first for advice or treatment?” For the purposes of the present study, two count variables were constructed. The first, *preferring doctors’ advice*, indicates in how many of these four symptom scenarios (0–4) a respondent would turn to a doctor. Similarly, the second, *preferring other practitioners’ advice*, indicates the number of scenarios in which a respondent would turn to another practitioner. In ESS round 7, CAM use was measured by asking the respondents to indicate which of the listed 12 treatments they had used for their own health in the last 12 months: acupuncture, acupressure, Chinese medicine, chiropractics, osteopathy, homeopathy, herbal treatment, hypnotherapy, massage therapy, physiotherapy, reflexology, spiritual healing. For this study, a count variable was constructed to measure *CAM use*, that is, the number of treatments (0–12) a respondent reported having used.

### 5.2.5 CONTROL VARIABLES

In all three studies the effects of age, gender, and education were adjusted for. Age was used both as a continuous (Studies I and III) and as a categorical variable (Study II: ages: 15–39, 40–64, and 65–97). Education was also used both as a continuous (years of full time education; Studies II and III) and as a categorical variable (two groups: lower level, i.e. basic or upper secondary; and higher level, i.e. tertiary education; Study I).

Study II further included marital status (married vs. not married), subjective general health (bad, very bad or fair health vs. good or very good health), and choice regarding GP (enough choice, vs. not enough choice). It also included the following two items in order to measure views about the doctor–patient relationship: “GPs treat their patients as their equals” and “Before doctors decide on a treatment, they discuss it with their patient.” Responses to those items reflected how often the respondent thought those apply to doctors in general, and were recoded into binary variables (those who thought that these statements usually apply to doctors vs. those who took the opposite view).

Moreover, in Study II, country dummy variables were used to adjust for the possible country-specific effects in the 14 countries (for a similar procedure, see, e.g., Bünger, 2010). Thirteen country dummies were entered into the logistic regression analyses of the pooled data from 14 countries, each of which had a value of either 0 or 1 (Austria was the country of reference).

Study III also included a measure of subjective general health (1 = very bad; 5 = very good)). In addition, it included a country-level variable indicating the level of personal autonomy, freedom and ability to progress in the country. This variable, *opportunity*, is one of the three dimensions comprising a recently developed indicator, the Social Progress Index, and comprises the following four components: personal rights; personal freedom and choice; tolerance and inclusion; and access to advanced education (Porter et al., 2015; for a methodological report, see Stern, Wares, & Orzell, 2015).

### 5.3 STATISTICAL ANALYSES

Study I used ordinal multidimensional scaling (MDS, PROXSCAL) to analyse the value structure and the location of rational truth and non-rational truth values in that structure. Bivariate relationships were analysed using Pearson's correlations. Studies I and II used logistic regression analyses to further examine the associations of values with RQEV and with non-adherence, and Study III used Poisson regression analyses (see, e.g., Coxe, West, & Aiken, 2009) to examine the associations between values and preferences in seeking health advice.

Since personal values are interrelated both theoretically and empirically, entering all of them simultaneously into a regression model is likely to create multicollinearity problems (Sagiv, Sverdlik, & Schwarz, 2011). This was the case also in all datasets used in the present study, as evidenced by large Variance Inflation Factor (VIF) values, which exceeded the general threshold of 10 (Hair, Black, Babin, Anderson, & Tatham, 2006, p. 230). To avoid multicollinearity problems in the regression analyses used in Study I, a separate analysis was conducted for each value. Studies II and III used value dimension variables that were not correlated too highly with each other to cause multicollinearity problems.

Study III used cross-level operator (CLOP) analysis (James & Williams, 2000) to cross levels from the group (country, in this case) to the individual, because the sample size of countries was too low to be able to use conventional multilevel modelling (MLM). In CLOP analysis, the group score is assigned to all individuals in that group, and thus the country score of personal freedom, i.e. *opportunity* (from Porter et al., 2015), was assigned to each individual from that country. The regression coefficients obtained using CLOP are very similar to those obtained using MLM (Klein et al., 2000). However, the CLOP approach differs from MLM in that it does not partition variance into within- and between-unit components, but uses both contextual-level and individual-level independent variables to explain total variance at the individual level. MLM, by contrast, uses contextual variables to explain between-unit variance (Klein et al., 2000). Because of this, the effect sizes of the contextual variable obtained using CLOP analysis are much smaller than those obtained using MLM.

## *Methods*

In Studies II and III the data was weighted using the weights present in the ESS data (see Ganninger, n.d.). The design weight adjusts for the slightly different chances of selection in each country and it was used in the within-country analyses. The population size weight adjusts for differences in the population size between countries. These two weights were used in combination (that is, they were multiplied together) in analyses using pooled data from more than one country. All statistical analyses were conducted using either Statistical package PASW Statistics or IBM SPSS Statistics.

## 6 RESULTS

### 6.1 THE LOCATION OF TRUTH VALUES IN SCHWARTZ'S VALUE STRUCTURE

Multidimensional scaling was used to study the value structure in Study I, with the main focus being on the location of rational and non-rational truth values. Figure 2 presents the two-dimensional solution of the 46 PVQ value items. The lines were drawn onto the figure to partition the space into separate value regions. On the basis of the obtained stress-1 value of 0.13, the two-dimensional solution is adequate for depicting the relationships among the 46 value items (Sturrock & Rocha, 2000).

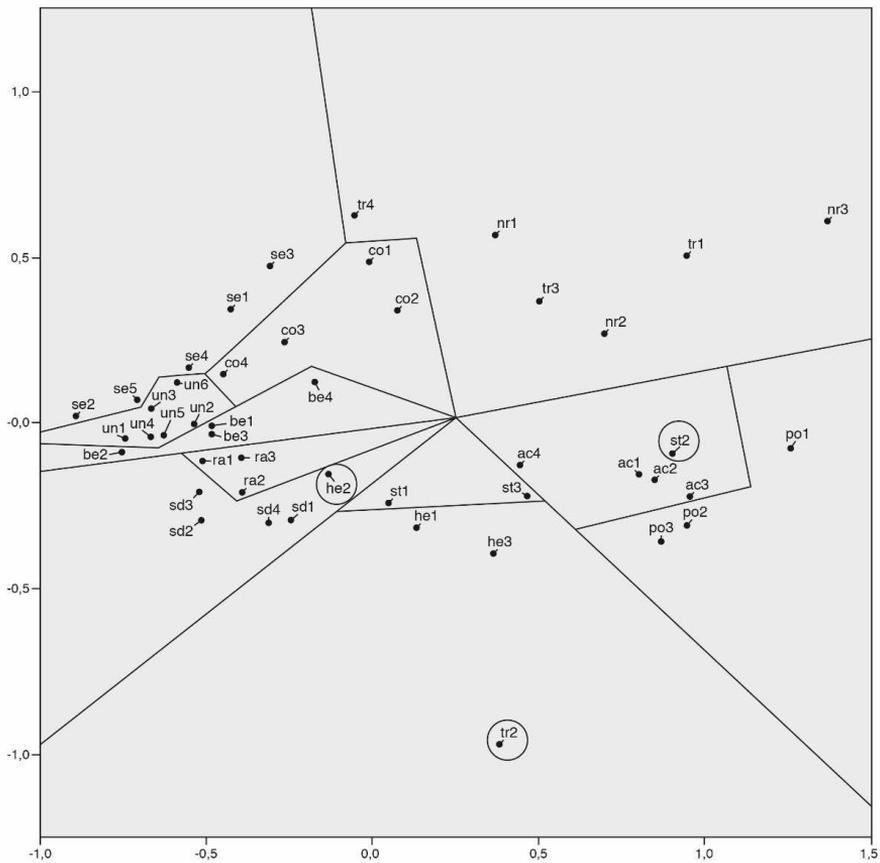
Regarding the location of the truth-related values in the value structure, Figure 2 shows that rational truth formed a distinct subregion within the region of self-direction, and that benevolence was adjacent to it. Non-rational truth did not form a distinct region. Instead, non-rational truth items were intermixed with tradition items in a wide region between other conservation values and self-enhancement values. Rational and non-rational truth emerged opposite to each other in the value structure.

The obtained two-dimensional solution mainly corresponded with Schwartz's (1992) theoretical value structure. All values, except tradition, emerged as a distinct region. There were some slight deviations from the theoretical value structure. First, some values emerged behind another value rather than side by side. Schwartz's theory predicts such a split only for tradition (peripheral) and conformity (central), however, this did not appear in the present data. Instead, power emerged behind achievement, hedonism emerged behind stimulation and universalism emerged partly behind benevolence. Each of these two values that form the pairs is adjacent to the other in the theoretical structure. In addition, security emerged behind both conformity and universalism. Security and conformity are adjacent in theoretical structure, however security and universalism are not.

Second, as regards the order of values, the adjacent values of universalism and benevolence emerged in reversed order compared to the theoretical value structure, as did tradition and security. Similar reversals have been observed also in other studies (de Boer, Hoogland, & Boersema, 2007; Koivula & Verkasalo, 2006; Schwartz et al., 2001; 2012). Bilsky, Janik, and Schwartz (2011) argued that such splits and reversals of the order of two values are probably of minor importance when they concern adjacent values. The third type of deviation concerned single items, of which only three items were mislocated, emerging in a region of another value. Two of these (one hedonism item and one stimulation item) were not very far away from their hypothesised regions and, thus, these deviations are probably of minor

importance (Bilsky et al., 2011). One tradition item (importance of religion) was more clearly mislocated.

The MDS analysis reported in Study I was conducted using the absolute, i.e., non-centred value items, as Schwartz (2007) recommended. An additional analysis was conducted using centred scores, and the obtained solution was identical to that reported in Study I (cf. Bilsky et al., 2015).



**Figure 2** Ordinal multidimensional scaling (MDS, PROXSCAL) of 46 PVQ items (n = 296). be = benevolence, un = universalism, sd = self-direction, st = stimulation, he = hedonism, ac = achievement, po = power, se = security, co = conformity, tr = tradition, ra = rational truth, nr = non-rational truth. A circle around an item indicates mislocation. (Source: Study I: Ahola, 2016)

## 6.2 VALUES AND THE READINESS TO QUESTION EXPERTS' VIEWS

The associations of values with the readiness to question experts' views (RQEV) were analysed using Pearson's correlations and logistic regression analyses (Study I). Regarding zero-order correlations (Table 1), power ( $p = .043$ ) and rational truth ( $p = .003$ ) were positively associated with RQEV, whereas tradition ( $p = .009$ ) was negatively associated. Furthermore, the associations of security ( $p = .078$ ) and conformity ( $p = .067$ ) were negative, though only marginally significant. Being more educated was also associated with RQEV ( $p = .031$ ), and the association of age ( $p = .074$ ) was marginally positive.

A separate logistic regression analysis was conducted for each value, and each of the analyses was adjusted for the effects of demographic variables (Table 2). Power and rational truth were statistically significantly and positively associated with RQEV, whereas security, conformity and tradition were significantly and negatively associated. Moreover, the association of stimulation was marginally positive.

**Table 1.** Descriptive Statistics and Pearson's Correlation Coefficients for Values and Demographic Variables with RQEV (Source: Study I: Ahola, 2016)

	Age	Sex	Education	RQEV	M/%	SD
Benevolence	.03	.20 **	.02	-.01	0.65	0.72
Universalism	.38 ***	.09	.10	.08	0.84	0.70
Self-direction	.07	-.04	.14 *	.10	0.60	0.68
Stimulation	-.23 ***	-.05	-.04	.10	-0.52	0.99
Hedonism	-.32 ***	.05	-.17 *	-.08	0.01	1.03
Achievement	-.42 ***	-.16 *	.01	.04	-0.79	1.11
Power	-.32 ***	-.11	.04	.14 *	-1.16	1.05
Security	.30 ***	.03	-.01	-.12	0.60	0.73
Tradition	.11	-.10	-.17 *	-.18 **	-0.81	0.83
Conformity	.17 *	.00	.05	-.13	0.06	0.83
Rational truth	.19 **	.03	.18 **	.20 **	0.63	0.75
Non-rational truth	.10	.13	-.15 *	-.10	-1.25	0.87
Age	—	.05	.16 *	.12	44.4	15.1
Sex <sup>a</sup>		—	.25 ***	.08	62.9 <sup>d</sup>	
Education <sup>b</sup>			—	.15 *	56.8 <sup>e</sup>	
RQEV <sup>c</sup>				—	72.8 <sup>f</sup>	

Note. RQEV = the readiness to question experts' views.  $n = 213$  (valid cases after listwise deletion of missing values).

<sup>a</sup>0 = man, 1 = woman. <sup>b</sup>0 = lower level: basic or upper secondary, 1 = higher level: tertiary education.

<sup>c</sup>0 = emerging or no RQEV, 1 = clear RQEV. <sup>d</sup>% women. <sup>e</sup>% higher level education. <sup>f</sup>% clear RQEV.

\*\*\* $p < .001$ . \*\* $p < .01$ . \* $p < .05$ .

**Table 2.** Logistic Regression Analyses<sup>a</sup> for Values and RQEV<sup>b</sup> (Source: Study I: Ahola, 2016)

	<i>b</i> (SE)	<i>p</i>	OR [95 % CI]	Nagelkerke <i>R</i> <sup>2c</sup>
Benevolence	-0.06 (0.23)	.778	0.94 [0.60-1.46]	.047
Universalism	0.10 (0.24)	.675	1.11 [0.69-1.78]	.048
Self-direction	0.29 (0.23)	.212	1.34 [0.85-2.12]	.057
Stimulation	0.33 (0.17)	.054	1.40 [0.99-1.96]	.072
Hedonism	-0.09 (0.16)	.595	0.92 [0.66-1.26]	.048
Achievement	0.26 (0.16)	.115	1.29 [0.94-1.78]	.063
Power	0.48 (0.17)	.006	1.61 [1.15-2.27]	.098
Security	-0.58 (0.25)	.019	0.56 [0.34-0.91]	.086
Conformity	-0.47 (0.21)	.024	0.62 [0.42-0.94]	.082
Tradition	-0.50 (0.20)	.013	0.61 [0.41-0.90]	.088
Rational truth	0.52 (0.22)	.017	1.68 [1.10-2.58]	.085
Non-rational truth	-0.30 (0.19)	.117	0.74 [0.51-1.08]	.063

Note. RQEV = the readiness to question experts' views; OR = odds ratio; CI = confidence interval.

<sup>a</sup>Separate analysis for each value, *n* = 213–214. Analyses are adjusted for age, sex, and education.

<sup>b</sup>RQEV is the dependent variable. <sup>c</sup>A pseudo-measure of *R*<sup>2</sup> including control variables and one value variable (Nagelkerke *R*<sup>2</sup> for control variables only ranged from .046 to .047).

### 6.3 REASONS FOR NOT DISAGREEING WITH EXPERTS

Analysis of the respondents' reasons for not disagreeing with experts or not expressing disagreement revealed four main categories. The first was related to individual factors, the second involved situational factors, the third concerned social risks and the fourth was related to views about experts. All but ten (out of 63) accounts had components falling into these categories.

Largest of the categories, the *individual factors* category, involved different types of descriptions of the self: *personal characteristics*, *unwillingness to disagree and trust in experts*. Reasons related to personal characteristics ranged from descriptions of the respondent's personal traits and typical actions to not caring about others' views (e.g., "I have not disagreed with an expert, because I am an agreeable and trusting person"). Some reasons were also related to not having particular characteristics or properties, such as the respondent's lack of knowledge or inability to justify their views. Other reasons concerned the respondent's unwillingness to disagree, argue or dispute. Some respondents stated that they were unwilling or could not be bothered to dispute a matter, considered disagreement futile, or generally sought to avoid conflict (e.g., "I am uninterested in orally debating matters, because I don't believe that expressing a difference in opinion like this leads to a better solution"). Moreover, some reasons were related to trust in experts or professionals, in their knowledge or skills, or the

belief that experts know better (e.g., “I have trusted experts’ professional skills and have not questioned them”).

The *situational factors* category had two subcategories: *importance of the issue* and *practical realities*. Regarding *importance of the issue*, some respondents explained that they express dissenting views only if the issue is important enough, or that they do not express their views if the issue or the difference of opinion is small or unimportant (e.g., “I have had a different opinion, but in those situations I haven’t felt the matter was important enough to mention. They have not been very significant topics or matters.”). Regarding *practical realities*, some respondents stated that they seldom met experts (e.g., “I live in a very small rural village, so I have little to do with experts”).

The first of the two small categories, the *social risks* category, involved such reasons as an unwillingness to hurt the expert’s feelings or stand out. This category is reflected in the first part of the second sentence in the following example: “I have often disagreed with experts, but have just not expressed my opinion on the matter. I always think I want to avoid hurting the opponent or don’t want my opinion to lead to a heated discussion. That is why I have seen it better to keep quiet.” The second small category, *experts will not change their view*, included arguments that experts stubbornly adhere to their own views or would reject a differing view (e.g., “They will not change their view, even though they are experts; their view is the only correct one”).

## 6.4 TOPICS OF DISAGREEMENT

The topics on which respondents questioned experts’ views or disagreed with them were varied and ranged from personal issues (concerning the respondent, another person, a group or a community) to more general facts or knowledge claims.

Most of the reported disagreements were with doctors and other social or health care professionals ( $n = 53$ ). These disagreements were mostly about personal health issues and concerned diagnosis (is there something wrong; what is wrong,  $n = 17$ ), treatment of a condition (is a treatment needed; what kind of treatment is needed,  $n = 23$ ), or inadequate examination ( $n = 4$ ). Sometimes an account included more than one of these aspects, for example a disagreement could be both about the diagnosis and the need for a treatment. Further, some disagreements were about general medical questions ( $n = 5$ ) and the rest ( $n = 4$ ) did not fit into these categories. Disagreements with managers or other superiors in a workplace were also frequently reported ( $n = 38$ ). They often concerned employment issues (salary, hiring, firing or vacations,  $n = 14$ ) or changes at the workplace ( $n = 6$ ). Various other topics were also mentioned (e.g., practices, bad treatment,  $n = 18$ ). Many respondents reported a disagreement incident with teachers,

principals, lecturers, researchers or professors ( $n = 33$ ). These were often about knowledge claims or their justification ( $n = 8$ ), the correct answer or solution to an assignment or a problem ( $n = 5$ ) or grading ( $n = 4$ ). Various other topics also received mentions (e.g., rules, requirements, teaching materials,  $n = 16$ ). Disagreements with other experts ( $n = 21$ ) were less frequently mentioned.

## 6.5 VALUES AND NON-ADHERENCE TO DOCTORS' INSTRUCTIONS

Study II examined the associations of values with non-adherence to doctors' instructions. Correlation analyses indicated that openness to change correlated positively with both non-adherent views ( $r = .13$ ,  $p < .001$ ) and non-adherent behaviour ( $r = .09$ ,  $p < .001$ ) in the pooled data from 14 countries and that conservation correlated negatively with these two types of non-adherence (non-adherent views:  $r = -.14$ ,  $p < .001$ ; non-adherent behaviour:  $r = -.08$ ,  $p < .001$ ). Openness to change correlated positively and significantly with non-adherent views in 12 countries (coefficients ranged from .02 to .22 across countries) and with non-adherent behaviour in 12 countries (coefficients from .03 to .13). Conservation correlated significantly negatively with non-adherent views in 12 countries (coefficients from -.23 to -.03) and with non-adherent behaviour in 12 countries (coefficients from -.13 to -.03). Self-enhancement correlated positively with non-adherent views ( $r = .07$ ,  $p < .001$ ) and behaviour ( $r = .04$ ,  $p < .001$ ) in the pooled data, whereas the correlations of self-transcendence were near zero (non-adherent views:  $r = -.01$ ,  $p = .205$ ; non-adherent behaviour:  $r = -.02$ ,  $p = .025$ ). Self-enhancement correlated positively and significantly with non-adherent views in six countries (coefficients from -.01 to .12) and with non-adherent behaviour in five (coefficients from -.01 to .09). The correlation of self-transcendence with non-adherent views was significantly positive in one country and negative in one (coefficients from -.12 to .08) and significantly negative with non-adherent behaviour in two countries (coefficients from -.11 to .04).

Overall, the sizes of the associations were larger and more consistent for conservation and openness-to-change values than for self-enhancement and self-transcendence values. The correlation between non-adherent views and behaviour was positive and significant in the pooled data ( $r = .15$ ,  $p < .001$ ) and in all countries except Iceland, in which it was positive but non-significant (coefficients from  $r = .08$  to  $r = .23$ ).

**Table 3.** Multivariate Logistic Regression Analysis for Associations between Values and Non-adherent Views and Behaviour in Pooled Data from 14 European Countries (Source: Study II: Ahola, 2015)

Predictor	Model 1: Non-adherent views		Model 2: Non-adherent behaviour	
	Block 1 OR [95% CI]	Block 2 OR [95% CI]	Block 1 OR [95% CI]	Block 2 OR [95% CI]
Age 65-97 years (ref.)				
15-39 years	1.97 [1.65-2.34] ***	1.51 [1.26-1.81] ***	1.65 [1.43-1.89] ***	1.46 [1.27-1.68] ***
40-64 years	1.98 [1.68-2.34] ***	1.66 [1.41-1.97] ***	1.40 [1.23-1.59] ***	1.29 [1.13-1.47] ***
Gender <sup>a</sup>	1.45 [1.32-1.59] ***	1.52 [1.38-1.68] ***	0.97 [0.90-1.05]	0.99 [0.91-1.08]
Education (years)	1.04 [1.02-1.05] ***	1.02 [1.00-1.03] *	1.01 [1.00-1.02]	1.00 [0.99-1.01]
Marital status <sup>b</sup>	1.05 [0.95-1.16]	0.90 [0.81-1.00] *	1.37 [1.25-1.49] ***	1.28 [1.18-1.40] ***
Subjective general health <sup>c</sup>	1.20 [1.07-1.33] **	1.12 [1.01-1.25] *	1.09 [1.00-1.20]	1.06 [0.97-1.17]
Choice regarding GP <sup>d</sup>	1.58 [1.40-1.78] ***	1.53 [1.36-1.72] ***	1.47 [1.32-1.64] ***	1.45 [1.30-1.62] ***
Doctors treat patients as equals <sup>e</sup>	1.69 [1.52-1.88] ***	1.67 [1.50-1.85] ***	1.37 [1.26-1.50] ***	1.36 [1.25-1.49] ***
Doctors discuss treatment <sup>e</sup>	1.57 [1.41-1.75] ***	1.58 [1.42-1.76] ***	1.33 [1.22-1.46] ***	1.33 [1.22-1.46] ***
Openness-to-change orientation		1.38 [1.33-1.44] ***		1.15 [1.11-1.20] ***
Self-enhancement orientation		0.96 [0.91-1.01]		0.97 [0.93-1.02]
Pseudo-R <sup>2</sup> (Nagelkerke)	.179	.201	.048	.053

Note. Analyses are adjusted for country dummies. The results are based on weighted data but the following *N*s are shown unweighted: for Model 1, *n* = 21,600; for Model 2, *n* = 20,036.

CI = confidence interval; GP = general practitioner; OR = odds ratio.

<sup>a</sup>0 = male, 1 = female. <sup>b</sup>0 = not married, 1 = married. <sup>c</sup>0 = bad/fair, 1 = good health. <sup>d</sup>0 = not enough, 1 = enough, 1 = not enough choice. <sup>e</sup>0 = yes, 1 = no.

\*\*\**p* < .001. \*\**p* < .01. \**p* < .05.

Logistic regression analyses were conducted to test the robustness of the associations between values and non-adherence and to test whether values have independent effects after adjusting for the effects of control variables. First, country dummy variables and control variables were entered into the model (Block 1, Table 3), and second, value orientation variables openness to change (vs. conservation), and self-enhancement (vs. self-transcendence) were added (Block 2, Table 3). Table 3 shows the odds ratios and their associated 95% confidence intervals for these variables (except country dummy variables) in the pooled data. Openness-to-change value orientation was positively and significantly associated with both non-adherent views and non-adherent behaviour, whereas the associations of self-enhancement orientation were not significant. Corresponding analyses were conducted in each country adjusting for the effects of control variables. Openness-to-change orientation was positively and significantly associated with non-adherent views in 11 countries and with non-adherent behaviour in seven. Self-enhancement orientation was significantly negatively associated with non-adherent views in one country (Switzerland). As regards non-adherent behaviour, self-enhancement was significantly positively associated in one country (Belgium) and significantly negatively in one (Norway). Therefore, in conclusion, openness-to-change (vs. conservation) value dimension was more consistently associated with non-adherence than was self-enhancement (vs. self-transcendence) value dimension.

## **6.6 VALUES AND PREFERENCES IN SEEKING HEALTH ADVICE OR TREATMENT**

The relationships between values and preferences in seeking health advice or treatment were examined in Study III. First, Pearson's correlation analyses were conducted in pooled datasets. Conservation correlated positively with preferring doctors' advice ( $r = .15, p < .001$ ) and negatively with preferring other practitioners' advice ( $r = -.11, p < .001$ ) in ESS round 2. Self-transcendence correlated positively with preferring doctors' advice ( $r = .08, p < .001$ ) and with preferring other practitioners' advice ( $r = .02, p = .001$ ), though the latter correlation was near zero. Conservation correlated negatively ( $r = -.14, p < .001$ ) and self-transcendence correlated positively with CAM use ( $r = .11, p < .001$ ) in ESS round 7.

As regards country-specific associations in ESS round 2 data from 14 countries, conservation correlated positively and significantly with preferring doctors' advice in 13 countries (coefficients ranged from .05 to .26 across countries) and negatively and significantly with preferring other practitioners' advice in 8 (coefficients from -.14 to -.04). Self-transcendence correlated positively and significantly with preferring doctors' advice in 11 countries (coefficients from -.05 to .19) and with preferring other practitioners' advice in 3 (coefficients from -.02 to .08). Regarding ESS

round 7 data from 12 countries, conservation correlated negatively and significantly with CAM use in all countries (coefficients from  $-.13$  to  $-.05$ ) and self-transcendence correlated positively and significantly in 8 (coefficients from  $-.002$  to  $.12$ ). Moreover, the associations of conservation with preferences in seeking health advice were consistent in 8 countries, meaning that in these countries it correlated significantly positively with preferring doctors' advice and significantly negatively with preferring other practitioners' advice and with CAM use.

Table 4 shows the results of the Poisson regression analyses in the pooled datasets from ESS rounds 2 and 7. Both value dimensions were significantly positively associated with *preferring doctors' advice* in Model 1a. After adjusting for the individual-level and country-level control variables in Models 1b and 1c, the association of self-transcendence became non-significant, whereas that of conservation remained statistically significant. Age was the strongest predictor of all variables entered in Model 1c, with older people being more likely to prefer doctors' advice. Moreover, respondents who assessed their health as being better and those living in countries that allow for higher levels of personal freedom (i.e., opportunity) were less likely to prefer doctors' advice; the same applied to females and more-educated people.

Regarding the outcome *preferring other practitioners' advice*, conservation was negatively and self-transcendence positively associated with it in Model 2a, whereas only the association of conservation remained statistically significant after adjusting for the effects of control variables in Models 2b and 2c. Gender was the strongest predictor of preferring other practitioners' advice with females being more likely than males to prefer other practitioners' advice. Conservation was the second strongest predictor, and was negatively associated with preferring other practitioners' advice, whereas country-level personal freedom (opportunity) and individual-level education were positively associated with such preference.

As regards *CAM use*, conservation was significantly negatively and self-transcendence significantly positively associated with it both initially (Model 3a) and after adjusting for the effects of control variables (Models 3b and 3c). Gender was the strongest predictor in Model 3c, followed by subjective health, conservation, and education. Female gender and education were positively associated with CAM use, whereas the associations of subjective health and conservation were negative. Finally, country-level personal freedom (opportunity) and age were also positively and significantly associated with CAM use.

**Table 4** Poisson Regression Models in Pooled Data from ESS Round 2 (N = 21,810) and Round 7 (N = 20,903) (Source: Study III: Ahola, 2016)

Variable	Prefer doctors' advice (R2)			Prefer other practitioners' advice (R2)			CAM use (R7)		
	Model 1a	Model 1b	Model 1c	Model 2a	Model 2b	Model 2c	Model 3a	Model 3b	Model 3c
Conservation	.10 ***	.04 ***	.03 ***	-.48 ***	-.44 ***	-.41 ***	-.20 ***	-.20 ***	-.19 ***
Self-transcendence	.04 ***	.01	.01	.12 ***	.04	.07	.18 ***	.11 ***	.11 ***
Age		.11 ***	.12 ***		.11 *	.07		.04 ***	.03 *
Gender		-.03 **	-.03 **		.75 ***	.73 ***		.35 ***	.35 ***
Education (years)		-.02 **	-.01 *		.30 ***	.29 ***		.20 ***	.19 ***
Subjective health		-.05 ***	-.05 ***		.08	.07		-.20 ***	-.20 ***
Personal freedom (country-level)			-.05 ***			.32 ***			.11 ***
Pseudo-R <sup>2</sup>	.081	.128	.130	.106	.163	.174	.077	.126	.144

Note. The results are based on weighted data. The figures are semi-standardised regression coefficients.

R2 = ESS round 2; R7 = ESS round 7.

\*\*\* p < .001. \*\* p < .01. \* p < .05.

## 7 DISCUSSION

Generally speaking, the aim of this thesis was to examine the role of personal values in laypeople's stances towards expert knowledge. The role of values in this context has to date been rarely studied, even though some research (Bardi & Schwartz, 2003; Boer & Fischer, 2013; Miles, 2015; Roccas & Sagiv, 2010) have demonstrated that values play a role in a wide range of attitudes, behavioural intentions and behaviours. This thesis contributes to filling this gap in the literature by examining the associations of values with stances towards expert knowledge from three different perspectives: 1) readiness to question experts' views, 2) non-adherence to doctors' instructions, and 3) preference for consulting medical experts or for consulting other practitioners for health advice or treatment.

Schwartz's (1992) value theory was used as the overall theoretical framework, although two values not originally part of Schwartz's model were also considered, namely rational truth and non-rational truth (Wach & Hammer, 2003a, 2003b). This dissertation views the concept of *expert* widely: not restricted to scientific experts but including other authorities, such as teachers and superiors in a workplace. Using survey data from Finland and from a range of other European countries, this study found that, first, values play a role in laypeople's readiness to question experts' views; second, that values are related to patient non-adherence; and third, that values are associated with laypeople's preferences in seeking health advice or treatment from medical experts or from practitioners of complementary and alternative medicine.

This study expected and found that the value dimension of openness to change (readiness for new ideas, actions, and experiences) versus conservation (self-restriction, order, and avoiding change) (see Schwartz, 1992; Schwartz et al., 2012) would be particularly relevant to laypeople's stances towards expert knowledge. More specifically, the results indicated that people endorsing conservation (vs. openness-to-change) values were less prepared to question experts' views, more likely to adhere to doctors' instructions, and more likely to prefer consulting conventional health care experts (i.e. medical doctors) for health advice or treatment. They were also less likely to prefer consulting other practitioners, and less likely to have used CAM (complementary and alternative medicine) treatments. Although it was assumed that the value dimension contrasting self-transcendence and self-enhancement would be less important in the context of the present study, it was nevertheless included in all three studies in order to cover all values of Schwartz's (1992) theory. Indeed, it was found that self-transcendence (vs. self-enhancement) was associated with CAM use. It was also found, unexpectedly, that power—which is a self-enhancement value—was related to readiness to question experts' views (RQEV). The inclusion of the two truth-

related values (Wach & Hammer, 2003a, 2003b) in addition to the ten values of Schwartz's (1992) theory also yielded interesting new insights. To the best of the author's knowledge, this is the first time that rational truth and non-rational truth values have been studied in Finland using a population-based sample. Therefore, this study added to the literature by analysing the location of these truth-related values in the value structure as well as their relationships with RQEV. It was found that people endorsing rational truth were more prepared to question experts' views, which is a novel finding. Moreover, this study contributed to the literature regarding reasons for avoiding upward dissent by analysing laypeople's reasons for not disagreeing with experts. These reasons were found to concern individual factors, situational factors, social risks and views about experts. The findings of the three studies comprising this dissertation are discussed in more detail below, followed by a discussion of methodological considerations and future directions.

## **7.1 VALUES OF RATIONAL AND NON-RATIONAL TRUTH**

Study I examined the location of Wach and Hammer's (2003b) two truth-related values in Schwartz's (1992) value structure and found that rational truth emerged as a distinct subregion within the region of self-direction, whereas the items measuring non-rational truth did not form a distinct region but were intermixed with the items measuring tradition. The hypothesis that rational truth would be located closest to self-direction was supported. This finding is also consistent with Wach and Hammer's (2003b) proposition that rational truth would be a subtype of self-direction. It was also expected that self-transcendence values would be adjacent to rational truth. Indeed, rational truth emerged between self-direction and benevolence, the latter of which is a self-transcendence value. However, it should be noted that benevolence and universalism emerged in reversed order as compared to their locations in Schwartz's theoretical model. The hypothesis that non-rational truth would be located closest to security with power adjacent to it was only partially supported. Non-rational truth was intermixed with tradition, which in turn was located between the other conservation values (security and conformity) and the self-enhancement values (power and achievement). These two truth-related values seem worth exploring also in future studies, particularly when the focus of interest is on knowledge-related topics. Future studies could also examine the role of rational and non-rational truth values in the context of health, for instance whether they are related to individuals' preference of conventional medicine versus CAM.

## 7.2 VALUES AND STANCES TOWARDS EXPERT KNOWLEDGE

Study I addressed the relationships between individuals' values and RQEV among randomly sampled Finns. As expected, endorsing rational truth values was positively associated and valuing security, conformity and tradition were negatively associated with RQEV. The associations of stimulation and self-direction with RQEV were positive as expected, though statistically non-significant. These findings are in line with those of previous studies—especially if rational truth is considered as a subtype of self-direction as Wach and Hammer (2003b) proposed, and therefore as a part of openness-to-change values—namely that valuing conservation was positively and openness to change was negatively associated with authoritarian submission (i.e. passive obedience to authority; Passini, 2015) and trust in institutions (Morselli et al., 2012). These findings are also consistent with the positive association between the personality trait of openness to experience and upward dissent (Ötken & Cenkci, 2015). It is particularly interesting to note that rational truth values were more relevant in the context of RQEV than the other openness-to-change values. This is understandable because the focus of rational truth values is on finding the truth and individuals endorsing this value can pursue it by questioning experts in knowledge-related issues. Moreover, power was found to be positively associated with RQEV, although this was not hypothesised. This association is nevertheless theoretically meaningful, because questioning experts' views may be a way of gaining control or dominance over experts. Consistent with this, Nussbaum and Bendixen (2003) found that assertiveness—tendency to dominate—was positively related to approaching arguments and negatively related to avoiding arguments. However, in other studies, power was positively, albeit weakly, correlated with trust in institutions (Devos et al., 2002) and authoritarian submission (Passini, 2015). Therefore, it would be worthwhile for future studies to further examine the role of power values in the context of RQEV and more generally in laypeople's relationships with experts and authorities. It would be interesting to analyse the role of power values in different contexts, including interpersonal arguments or disagreements with experts as well as general stances towards experts and authorities. Nevertheless, the results of Study I indicate that two different types of motivations underlie readiness to question experts' views: pursuit of knowledge and pursuit of power.

Studies II and III, using data from a range of European countries, examined the role of values in two different contexts of health care—adherence to medical experts' instructions (Study II), and seeking health advice or treatment from conventional medical experts or other health practitioners (Study III). Study II found that the openness-to-change (vs. conservation) value dimension was associated with non-adherent views and non-adherent behaviour. In line with what was hypothesised, people

endorsing openness to change over conservation were less likely to think that it is best to follow doctors' orders and were less likely to have followed doctors' medical prescriptions. The associations of openness-to-change (vs. conservation) value dimension remained statistically significant even after adjusting for the effects of countries, demographic variables, and views about the doctor–patient relationship.

Study III found that the conservation (vs. openness-to-change) value dimension played a role in preferences in seeking health advice. More specifically, as expected, endorsing conservation was positively associated with preferring medical doctors' advice or treatment in cases of different symptoms, and negatively associated with preferring other practitioners and the use of CAM treatments. Similar kinds of results have been obtained in previous studies, namely that the openness-to-experience personality trait was associated with the breadth and frequency of CAM use and with having used CAM (Hildreth & Elman, 2007; Honda & Jacobson, 2005; Sirois & Purc-Stephenson, 2008; Thomson et al., 2014a), and that new and infrequent users of CAM scored higher on openness to experience than users of conventional medicine (Sirois & Gick, 2002). However, openness to experience and preferences in seeking health advice were not always found to be associated (Furnham, 2007; Hildreth & Elman, 2007; Thomson et al., 2014b). Furthermore, as hypothesised, Study III found that valuing self-transcendence (vs. self-enhancement) was positively associated with CAM use, but contrary to expectations, it was not statistically significantly associated with the preference to consult other practitioners. This is consistent with Saher and Lindeman's (2005) finding that self-transcendence (vs. self-enhancement) value dimension was only weakly associated with believing in the efficacy of CAM.

Study III further considered whether country-level personal freedom plays a role in people's preferences in seeking health advice. As expected, living in countries characterised by a higher level of personal freedom was negatively associated with preferring to consult conventional doctors, and positively associated with preferring other practitioners and CAM use.

Taken together, these results indicate that people valuing openness to change tend to be more critical towards experts' views and less likely to follow medical experts' instructions. The opposite was the case for those valuing conservation; they were also found to be more likely to rely on conventional medical experts and less likely to consult complementary or alternative health practitioners. Therefore, openness-to-change (vs. conservation) values seem to motivate people to not take conventional forms of expertise for granted, but instead to challenge conventional experts and also rely on alternative sources for advice.

### 7.3 REASONS FOR NOT DISAGREEING WITH EXPERTS

An examination of laypeople's reasons for not disagreeing with experts (Study I) indicated that some of these reasons were related to their own personal characteristics, traits or typical actions. Consistent with this, previous studies and theoretical models on upward dissent have identified employees' individual characteristics as one of the considerations in their decisions of whether or not to express upward dissent (e.g., Kassing, 1997, 2008; Milliken et al., 2003).

Some respondents also reported trust in experts or professionals as a reason for not disagreeing with experts, a finding identified previously only in a sample of university students in Finland, who were asked about their reasons for not having disagreed with teachers or other experts in knowledge-related matters (Keso, 2002; Pirttilä-Backman & Keso, 1998). Relatedly, in a correlational study, Hall et al. (2002) found that trust in physicians was associated with not having had a past disagreement or dispute with the physician. On the other hand, Payne (2014) found that trust in supervisor correlated positively with upward dissent. Moreover, an experimental study that manipulated the level of trust in a supervisor found that "participants in the high and low trust-in-supervisor conditions were more likely to engage in explicitly moralised dissent than participants in the baseline-control condition—those who reported comparatively moderate trust-in-supervisor" (Zanin, Bisel, & Adame, 2016, p. 159) in response to a hypothetical unethical request by the supervisor. On the basis of these contradictory findings, it seems likely that trust operates differently in different situations or contexts and also depends on the focus and target of trust. It appears that higher levels of trust in experts' knowledge and skills may not evoke the need or willingness to question experts in knowledge-related matters. This may particularly apply to the relationship between laypeople and epistemic experts. In contrast, employees may be more willing to express their differing views in the workplace when they trust the supervisor, in the sense that their dissent will be received in a constructive manner and that it will not result in retribution (Zanin et al., 2016). This may be typical to a relationship that is based more on authority than expertise. Therefore, it would be fruitful to examine how different aspects of trust relate to RQEV. Future studies could also examine whether trust-related reasons are specific to cases in which epistemic experts' views have not yet been questioned, or whether trust in experts also play a role in deliberations of whether or not to express a differing view to an expert. In this study, trust in experts was considered as an individual factor, but it is also possible to see it as a relational factor concerning the relationship between laypeople and experts.

Unwillingness to disagree, considering it futile, or seeking to avoid conflict also featured among respondents' reasons for not disagreeing with experts. These themes, particularly the anticipated efficacy or futility of

speaking up, have been identified as a recurring theme in literature on employee voice and silence (Morrison, 2014). Although largely overlooked in their responses, some respondents mentioned social risks and others mentioned thinking that experts would not change their view. Unwillingness to take social risks and to invest effort into something that is considered futile could be viewed as cost-benefit considerations (cf. Paglieri & Castelfranchi, 2010). Anticipation of social risks and other punishment (such as retaliation) is featured both in Kassing's (1997) and Milliken et al.'s (2003) models. Social risks could be also viewed as relational considerations, concerning either how an expression of a disagreement affects the other party or what kinds of consequences it has for the self or for the relationship in the future (cf. Milliken et al., 2003). Therefore, such considerations may be less important for a layperson in cases in which it is likely that she or he will not meet the expert or the authority again as compared to cases in which the relationship is more long-lasting, such as the employee-supervisor-relationship or the student-teacher-relationship (for the latter, see Bolkan & Goodboy, 2016). Future studies could test this possibility.

Some reasons for not disagreeing with experts point to the importance of different aspects of situational factors, namely importance of the issue and practical realities. The latter reason is straightforward: some respondents reported seldom meeting experts, and thus had little reason or possibility to disagree with them. Considerations of the importance of the issue for an individual implies that experts are not readily challenged unless the issue is very important or the difference of opinion is substantial enough. Relatedly, Infante and Rancer (1982) considered an individual's perceived importance of success in a particular argument as a situational factor. Although importance of the issue was considered as a situational factor also in the present study, it is likely that personal values for their part also influence an individual's considerations of the importance of the issue and which issues are important enough to warrant questioning expert's views.

By analysing laypeople's reasons for not disagreeing or not expressing disagreement with experts this study contributed to the relatively sparse literature on individuals' reasons for avoiding upward dissent, particularly in knowledge-related matters.

## 7.4 METHODOLOGICAL CONSIDERATIONS

*Strengths.* Examining the associations of personal values with stances towards expert knowledge from three different perspectives and using data from population-based samples from a range of European countries are the main strengths of this study. In Studies II and III, the countries were chosen from the ESS (European Social Survey) datasets on the basis of the evidence (e.g., Davidov, 2008) concerning cross-cultural measurement equivalence of personal values in these countries. Although this choice allowed for using

data only from a limited number of countries, it enhances the likelihood that the value items are understood similarly in all countries and thus increases the reliability of the findings. It also provided a valuable opportunity to study the associations of values with non-adherence and preferences in seeking health advice across a range of countries.

*Samples.* Compared to previous studies on upward dissent, which were conducted among employees or university students, a strength of Study I is that it used a population-based sample, including people of varied ages and different educational backgrounds. However, the response rate of 32% was relatively low. Regarding the ESS samples used in Studies II and III, response rates ranged from 43.6% to 79.1% in round 2 and from 31.4% to 65.8% in round 7 (European Social Survey, n.d.-a, n.d.-b). Low response rates in some countries may somewhat limit the generalisability of the results to the wider population in those countries.

The focus in all three studies was on laypeople's stances towards expert knowledge, and Studies II and III considered in particular medical expertise. Study II focused on laypeople's non-adherence to medical experts' instructions and Study III concentrated on laypeople's preferences in seeking health advice from medical experts or other health care practitioners. However, it is important to note that not all ESS respondents are laypeople, in fact, the ESS datasets included respondents who are doctors or other health care professionals by occupation. Additional analyses indicated that excluding health professionals and health associate professionals from the analyses will not change the main results or the conclusions of Studies II and III.

*Measures.* Some of the limitations concern the measures that were used in this study. Both personal values and stances towards expert knowledge were assessed using self-reported measures. As regards the self-reported measures of non-adherence (Study II), one possible source of bias is unwillingness to report non-adherence (Larsen et al., 2009; Vermeire et al., 2001), which can be related to social desirability (Wagner & Miller, 2004). The limitations of human memory may also bias the behavioural measure of non-adherence (Wagner & Miller, 2004). Likewise, not remembering one's past behaviour correctly or accurately may also bias the respondents' accounts of disagreement incidents (or lack of them) with experts (Study I) and their responses regarding the use of different CAM treatments during the previous year (Study III). Using the ESS data in Studies II and III was advantageous, because it provided the opportunity to use high-quality data from a range of European countries. However, the drawback is that the variables were not designed for the purposes of the present study, which necessitated some methodological compromises (for considerations on analysing existing datasets, see Yorke, 2011), for example, in Study II, each type of non-adherence was measured using only a single item.

Personal values were measured using two different versions of Schwartz's Portrait Values Questionnaire. Study I used the 40-item PVQ and added six

items measuring values of truth, whereas Studies II and III used the 21-item PVQ that is included in the ESS. Each item in both versions is double-barrelled, i.e. consisting of two sentences. Use of such items could be objected on the basis of the quality of the data possibly being compromised, because respondents might find the two sentences incompatible. However, Schwartz's (2001) empirical analyses have demonstrated that this does not affect the quality of the data. Then again, in a more recent version of the PVQ, designed to measure the refined value theory, Schwartz and his colleagues (Schwartz et al., 2012) used a single-sentence format. Regarding Wach and Hammer's (2003b) items measuring truth-related values used in Study I, Schwartz (2006b) suggested that these items are formulated more like beliefs than values. However, five of the six items refer explicitly to what is important to the person, a notion that is central to the concept of values. Nevertheless, more studies involving these truth-related values would be welcome to further examine their measurement properties.

The reliabilities of some of the 12 value indices used in Study I were relatively low, which may be due to them being measured with only three to six items and that the items cover broad constructs (Caprara, Schwartz, Capanna, Vecchione, & Barbaranelli, 2006). In the 21-item PVQ used in the ESS, each value is measured with only two items (except universalism which is measured with three items), and thus the reliabilities of the ten values tend to be even lower (see, e.g., Verkasalo et al., 2009). Further, the 21-item PVQ yields very high correlations between some of the adjacent values and thus unifying them is advisable (Davidov, 2008). In view of the preceding, higher-order values and value-dimension variables were used in Study II. The latter were computed by subtracting the scores of one pole of the value dimension from those of the other pole of that same dimension (e.g., the score of conservation was subtracted from the score of openness to change). In study III, two value dimension variables were computed using Verkasalo et al.'s (2009) equations. Using these two dimensions allowed for a parsimonious way to describe the relationships of values with non-adherence in Study II and with preferences in seeking health advice in Study III. However, a disadvantage is that the use of value dimensions did not allow for a more nuanced examination of the effects of different values. Verkasalo et al. (2009) noted that it is possible to criticise use of the two value dimensions on the grounds that the dimensions cannot handle nor adequately describe the values of an individual who has high scores on opposing values. For instance, an individual valuing both tradition and self-direction would receive an average score on the conservation dimension (Verkasalo et al., 2009). However, recent results by Borg et al. (2015) indicate that this should not be a major concern, since they found that almost all respondents' values were organised according to the same circular value structure, which suggests that almost everybody experiences the conflicts and compatibilities among values very similarly.

The measure of RQEV was constructed from self-reported written accounts (Study I). This dichotomous measure differentiated between a clear RQEV and emerging or no RQEV. Unfortunately, the written accounts did not allow for distinguishing disagreeing tacitly from explicitly voicing a differing view. Such more nuanced distinctions could have provided interesting insights and possibly also stronger and clearer associations with values. For example, different values may motivate never disagreeing, disagreeing quietly, and explicitly questioning experts' views. Relatedly, a recent study (Ötken & Cenkci, 2015) found that different personality traits were associated with different forms of organisational dissent, namely upward dissent (expressing dissent to managers), displaced dissent (expressing dissent to external audiences), and latent dissent (expressing dissent to co-workers). Thus, examining the role of values in different contexts of disagreement would seem a fruitful avenue for future research.

*The size of the associations.* The sizes of the associations between values and stances towards expert knowledge were generally small. However, the observed associations were theoretically meaningful and the majority of them were also in line with the hypotheses. One possible explanation for the small effects lies in the abstract nature of values: people may not always be able to detect values and to connect them to particular situations (Maio, 2010). Bardi and Schwartz (2003) suggested another explanation, namely that many other factors, such as norms, compete with values. They tested the idea that values would be more strongly associated with behaviour when the situational normative pressures are weaker and found support for it. However, the results of another study by Schwartz and Butenko (2014) failed to support this idea.

Regarding Studies II and III, which examined non-adherence to doctors' instructions and preferences in seeking health advice, inclusion of health-specific value items, such as those recently proposed by Aavik and Dobewall (2016) may have produced stronger associations. As Aavik and Dobewall pointed out, Schwartz's 21-item PVQ-instrument used in the ESS does not include any health items, and Schwartz's other inventories include one health item each. However, it is also important to note that Schwartz conceptualised values as goals that transcend specific situations and that inclusion of context-specific values somewhat contradicts this idea (Aavik & Dobewall, 2016). In any case, it would probably be unrealistic to expect that the associations of values would be very strong considering their abstract nature and the number of other factors that have been shown to be associated with stances towards expert advice in different contexts (e.g., non-adherence, seeking health advice, upward dissent). Nonetheless, it would be fruitful for researchers to include additional values that appear relevant in the particular context of their study, be they context-specific or likely to transcend specific situations. For example, it was useful to include truth-related values in Study I, which examined RQEV in knowledge-related matters.

*Study design.* Two of the studies were cross-national and as mentioned above, the countries that were included in Studies II and III were selected on the basis of the evidence concerning the invariance properties of the Portrait Values Questionnaire. This led to being able to include only a limited number of countries. In Study II, the effects of countries were taken into account by including country dummies as control variables in the logistic regression analyses, whereas in Study III a particular country-level effect was considered, namely, personal freedom. Unfortunately, due to the limited number of countries, it was not possible to use conventional multilevel modelling (such as hierarchical linear modelling). Instead, cross-level operator (CLOP) analysis (James & Williams, 2000) was used to cross levels from the country to the individual. This somewhat limits the findings of Study III related to personal freedom, because in CLOP the standard errors of contextual variables tend to be too small, thus potentially overestimating the statistical significance of the associations and making Type I errors more likely (Klein et al., 2000). Therefore, future studies should further examine the associations of personal freedom with preferences in seeking health advice using data from a larger number of countries, which would allow using conventional multilevel modelling.

All the three datasets used in the present study were cross-sectional, and therefore it was not possible to draw causal conclusions regarding the relationships between values and stances towards expert knowledge. On one hand, it could be argued that since values develop early and remain relatively stable (Döring et al., 2016) and are central to personhood (Hitlin & Piliavin, 2004), the influence of values on stances towards expert knowledge may be stronger. However, on the other hand, the reverse could be true since different authority figures (e.g., parents and teachers) are present in people's lives from childhood. Moreover, Lutz and Keil (2002) found that children already at young age are able to think about expertise and also have an emerging, although limited, understanding of the division of cognitive labour—that different adults have different kinds of expertise. It is also possible that the relationships between values and stances towards expert knowledge are reciprocal. Future studies should use other than cross-sectional designs in order to further clarify these relationships.

## **7.5 FUTURE DIRECTIONS AND CONCLUDING REMARKS**

This dissertation set out to study laypeople's stances towards expert knowledge from three different perspectives. However, the respondents were not explicitly asked about their stances towards expert knowledge or about their epistemic trust in experts. Instead, it was assumed that RQEV, non-adherence to doctors' instructions and preferring medical vs CAM providers for health advice or treatment reflect such stances. It was further assumed

that the latter two reflect laypeople's epistemic trust in medical experts. However, it remains unclear whether the respondents actually considered the epistemic aspect of adherence to medical expert's advice; for instance, whether or not they should place epistemic trust in the doctor prescribing the medicine. Also unanswered is whether their preferences and choices in seeking health advice or treatment included considerations of which health care provider might possess the most valid knowledge. However, it seems likely that epistemic considerations play a role in healthcare utilisation, given the recent research finding by Thomson et al. (2014a, p. 304), namely that "the respondents who agreed (or neither agreed or disagreed) the most important knowledge comes from spiritual experience were over twice as likely to use CAM, compared to those who disagreed". In any case, future studies could further examine the role of such epistemic considerations in people's choices of which health care practitioners to consult and whether to follow their advice and instructions.

Even though the results of the present study indicate that people endorsing openness-to-change values tend to be more prepared to question experts' views and less likely to adhere to medical experts' advice, the actual contents of the experts' views or recommendations and their compatibility with a layperson's values are also likely to play a role. For example, a person for whom conservation values are very important may generally tend to follow expert's advice, but may be less likely to do so if following that advice challenged the status quo. Correspondingly, such an individual may not generally question experts' views, but may be more likely to do so if the issue is very important for her or him or if persuading the expert about one's view helps one to gain stability and safety. There is also some evidence that the compatibility of important life goals with self-care recommendations is associated with better adherence to these recommendations at least in some self-care regimens (Zhang et al., 2015). On the other hand, following doctor's instructions may prevent an individual from pursuing a value that is important for her or him. For instance, dietary restrictions may conflict with pleasure-seeking (see Karimi & Clark, 2016), which is an important motivational goal for people endorsing hedonism values. Therefore, it is also important to differentiate between different types of instructions and the extent to which following those instructions affect a patient's life and her or his abilities to pursue important values. Unfortunately, it was not possible to test such content-related effects in the present study, because many of the reported disagreement incidents did not provide enough information about the content of the opposing views (Study I), and because there was no information on the content of doctors' medical prescriptions or on the perceived effects of those prescriptions on respondents' everyday life (Study II).

Future studies on laypeople's readiness to question experts' views could focus on disagreements with specific experts and take a closer look at the nature of these disagreements. For example, the analysis of the topics of

disagreements in Study I indicated that some of the laypeople's disagreements with experts occurred in medical encounters and were mainly related to differing views about the diagnosis and treatment. A recently introduced taxonomy of medical decisions (Ofstad, Frich, Schei, Frankel, & Gulbrandsen, 2016) could be used to make more fine-tuned distinctions of the content of disagreement between patients and doctors. Patients could be asked, for instance, whether and how often they have disagreed with different types of decisions made by a medical doctor and whether they explicitly questioned those decisions. More extensive patient narratives or recordings of medical consultations could also provide useful data. Indeed, the conversation analysis approach utilises recordings of medical consultations to study medical interactions between a patient and a doctor (e.g., Peräkylä, 2002). For instance, Peräkylä (2002) observed that patients were more likely to produce an extended response (instead of providing only minimal acknowledgement of the diagnosis) to the doctor's diagnosis when the doctor explicated the evidence for the diagnosis compared with cases in which there was no such explication. Patients' extended responses included "straight agreements, symptom descriptions, alternative diagnosis proposals, and actions related to the interpretation of evidence" (Peräkylä, 2002, p. 243).

It would also be interesting to examine whether the way in which disagreements were resolved (if resolved at all) affected the subsequent level of patient adherence to the doctor's instructions. Similarly, Ijäs-Kallio, Ruusuvoori and Peräkylä (2010, p. 519) proposed that "research on the ways of achieving agreement on the diagnosis and the description of the patients' range of accepting vs rejecting responses, together with investigating these with regard to the patients' subsequent use of medicines, would contribute to our knowledge on 'best practices' in terms of health outcomes". Future studies could also address the issue of the content of the disagreement between laypeople and experts by using scenario-based instruments, which would allow for standardising the content of disagreements. Scenario-based instruments have been used to assess such related issues as upward ethical dissent (Zanin et al., 2016), epistemic understanding (Barzilai & Weinstock, 2015), and laypeople's explanations for why scientists come up with differing scientific claims (Thomm et al., 2015).

Patients' understanding of the nature of medical knowledge and knowing is another important topic for future research. Kienhues and Bromme (2012) suggested that such epistemic beliefs about medicine are likely to be among the factors that influence patients' health-related decisions, for instance, whether to follow a doctor's advice. However, research considering epistemic beliefs about medicine is scarce and only a few such studies have been conducted among laypeople (Kienhues & Bromme, 2012; Kienhues, Stadler, & Bromme, 2011), whereas in other studies the participants have been medical or health experts or professionals or novices (students) (e.g., Bientzle, Cress, & Kimmerle, 2014; Roex, Clarebout, Dory, & Degryse, 2009;

Roex, Degryse, & Clarebout, 2011). Future studies could examine whether epistemic beliefs about medicine are actually related to patient adherence and whether such beliefs also guide the selection of sources of health advice. Epistemic thinking may also play a role in people's preparedness to question experts' views, since particular epistemic beliefs (belief in certain and simple knowledge) have been associated with avoiding arguments (Nussbaum & Bendixen, 2003).

The correlates of the avoidance component of argumentativeness are not yet well understood (Nussbaum & Bendixen, 2003). These two components of argumentativeness, approach and avoidance (Infante & Rancer, 1982), were found to be partly associated with different explanatory factors (Nussbaum & Bendixen, 2003). Similarly, regarding values, the avoidance component has been largely overlooked both in theoretical models of values and empirical research (for exceptions, see Aavik & Allik, 2006; Portman, 2014; Van Quaquebeke, Graf, Kerschreiter, Schuh, & van Dick, 2014). Because values are defined as desirable, mainly positive values have been included in previous studies, whereas negative values—i.e. what people seek to avoid—have not been given much attention (Aavik & Allik, 2006). Studies that have considered negative (or counter-ideal) values concluded that negative values are not merely the opposite of positive (or ideal) values although they are related to some extent (Aavik & Allik, 2006; Schuh et al., 2016). Incorporating both positive and negative values in future studies on upward dissent would be another fruitful area of research and could throw light on the reasons for avoiding arguments or unwillingness to express upward dissent. Morrison (2014, p. 185) proposed that “employees will engage in voice only when the motivators or driving forces are stronger than the inhibitors or restraining forces”. Therefore, it could also be useful to analyse the relative strengths of the effects of positive and negative values on individuals' decisions to speak up or remain silent and whether different values motivate each of these.

In the current study, country-level personal freedom was found to be related to preferences in seeking health advice (Study III). Studies could further examine whether personal freedom, or other contextual effects, also play a role in laypeople's preparedness to question experts' views. It can be assumed that people living in countries having a higher level of personal freedom would be more prepared to critically evaluate and to question experts' views if necessary. Power distance (Hofstede, 2001) is another potentially relevant contextual factor in the case of RQEV, since it has been found to be positively associated with employee opinion-withholding (Huang, Van de Vliert, & Van der Vegt, 2005) and negatively associated with employee voice (Botero & Van Dyne, 2009), although in the latter study power distance was not treated as a country-level but as an individual-level variable reflecting the extent to which an individual is comfortable with status differences.

In modern societies, it is very difficult, if not impossible, for individuals to avoid encountering experts' knowledge claims. Therefore, it is important to understand the factors that shape individuals' stances towards expert knowledge. Previous studies have identified various factors that play a role in this context. However, the role of values in this context has been largely overlooked. This study demonstrates that personal values play a role in individuals' stances towards expert knowledge and therefore contributes to filling this gap.

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