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## Trusting the Future in Different Languages

### Exploring Differences in Future-Focused Attitudinal Trust Among Speakers of Languages with Strong and Weak Future Time References

“The acquisition of the first language (L1) [...] implies the socialization and enculturation of the subject’s mind.”<sup>1</sup>

Futureless languages, or those described in the field of linguistics as having a weak Future Time Reference (FTR), allow their speakers to use the present tense when talking about the future while other languages do not. For example, it is grammatically acceptable for speakers of futureless languages to say the equivalent of: “Next week, I work on the project” while speakers of languages with a strong FTR are required to say the equivalent of: “Next week, I will work on the project”. Some researchers hypothesize that this linguistic difference may cause speakers to either view the future as a continuation of the present (weak FTR) or as distant and distinct from the present (strong FTR) and as a result act in different ways.<sup>2</sup> For example, Chen suggests that future time orientation in languages is associated with levels of risk-avoidance behaviours.<sup>3</sup>

This article explores the possibility that a relationship exists between such future time orientation in languages and other future-focused attitudinal variables such as trust. Following initial consideration of the relationship between language, thought and behaviour, an analysis of research into the relationship between future

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<sup>1</sup> Arnd Witte: “The Subjective Blending of Spaces in Intercultural Foreign Language Learning. Theoretical Considerations and Issues of Assessment”. In: Arnd Witte, Theo Harden (eds): *Foreign Language Learning as Intercultural Experience. The Subjective Dimension*. Bern: Peter Lang, 2015, pp. 19–40, here p. 20.

<sup>2</sup> See Kevin Birth: *Objects of Time. How Things Shape Temporality*. New York: Palgrave Macmillan, 2012; Marco Fasan, Giorgio Gotti, Tony Kang, Yi Liu.: “Language FTR and Earnings Management. International Evidence”. In: *SSRN* (April 2016), at <http://dx.doi.org/10.2139/ssrn.2763922> (accessed 21.08.2021).

<sup>3</sup> M. Keith Chen: “The Effect of Language on Economic Behaviour”. In: *American Economic Review* 103/2 (2013), pp. 690–731, at <http://dx.doi.org/10.1257/aer.103.2.690> (accessed 20.08.21).

orientation in language, risk-avoidance behaviour and levels of trust is presented. The article then turns to the results of an empirical study designed to explore the possibility that a relationship may exist between future orientation in languages and levels of trust displayed by the speakers of those languages. Our hope is that this interdisciplinary exploration of a salient feature of language(s) and potentially associated attitudes and behaviours will inform some of the debates around the complex blending of, and relationships between, language(s), identity(ies) and interculturality that are at the heart of this volume.

## Language, Thought and Behaviour

The hypothesis that thought is shaped by language has a long history in philosophy and psychology.<sup>4</sup> The language-cognition proposition gained prominence in the early decades of the twentieth century in particular through the writings of Benjamin Whorf<sup>5</sup> and his student, Edward Sapir.<sup>6</sup> The hypothesis that language influences thought became known as the Sapir-Whorf hypothesis (SWH) and remains a contested and much debated contention in contemporary linguistics.

While many researchers support at least a weak form of the SWH, there are others – most notably Noam Chomsky and Stephen Pinker – who consider the view that language influences thought to be misguided or, in the words of Bloom and Kiel, to be “[...] more seductive than it is instructive”.<sup>7</sup> Chomsky’s work is based primarily on the premise that language and cognition exist in the mind as separate entities, while Pinker argues that humans do not think in a language but rather in an innate ‘mentalese’ which precedes language, and that therefore language and thought remain independent. Indeed, Pinker goes as far as to argue that the speaking of a language as opposed to the speaking of no language, in cases of injury or deprivation or prior to language acquisition of infants, has no influence on thought itself.<sup>8</sup>

Intuitively throughout history, however, a belief in the influence of language on thought has been expressed in society in different ways. For example, after the French Revolution the formal form of address (*Vous* as opposed to *tu*) was briefly banned as it was felt that, by forcing speakers to select either a formal or informal

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<sup>4</sup> See Wilhelm von Humboldt: *Über die Verschiedenheit des menschlichen Sprachbaues und ihren Einfluss auf die geistige Entwicklung des Menschengeschlechts*. Bonn: F. Dümmler, 1836.

<sup>5</sup> Benjamin Whorf: *Language, Thought and Reality*. Cambridge: MIT Press, 1956.

<sup>6</sup> Edward Sapir: *Culture, Language and Personality. Selected Essays by Edward Sapir*. Berkeley: University of California Press, 1985.

<sup>7</sup> Paul Bloom, Frank Kiel: “Thinking through Language”. In: *Mind and Language* 16/4 (2001), pp. 351–367, here p. 365.

<sup>8</sup> Stephen Pinker: *The Language Instinct*. New York: Harper Collins, 1994.

form of address, speakers of the language unavoidably categorized everyone with whom they spoke in terms of their relative social class.<sup>9</sup> The *ty/vy* contrast was abolished following the Russian Revolution for the same reason.<sup>10</sup> Contemporary debates around the use of sexist forms of language follow similar lines of argument.

In order to further investigate claims in this area, researchers have attempted to approach the issue from an experimental or empirical perspective, with mixed results.<sup>11</sup> In a classic example, Whorf compared Hopi speakers' perception of time and space (albeit using English translations) with that of what he termed speakers of Standard Average European (SAE).<sup>12</sup> On the basis of his analysis of the differences in these languages regarding time and space, he concluded that their speakers perceive time differently, with English-speakers displaying a linear Newtonian perspective and Hopi speakers more relativistic principles. However, Whorf's findings are not without critique, with Bloom and Kiel suggesting that his causal reasoning was open to alternative interpretation.<sup>13</sup>

A second series of studies investigated relationships between the vocabulary of colour and perception of colour. Taken as a whole, the findings from these studies suggest that speakers of languages that have more precise terms for a wider range of colours tend to perceive colour in a more differentiated manner. These studies include investigations of the impact of the presence or absence of lexical distinctions between orange and yellow and between lighter blues (*goluboj*) and darker blues (*sinji*). Brown and Lenneberg conclude that speakers of Zuni, which does not distinguish between orange and yellow, experience difficulty in remembering differences between these two colours.<sup>14</sup> Winaver et al.'s results suggest that Russian speakers discriminate more quickly than English speakers between colour squares in different linguistic categories in Russian but the same linguistic categories in English (e.g. both lighter blues and darker blues) than they do between those in the same linguistic category in both Russian and English (e.g. either all lighter blues or all darker blues). They conclude that categories in language impact perceptual tasks relating to colour.<sup>15</sup>

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<sup>9</sup> Jean-Louis Barsous, Peter Lawrence: *Management in France*. London: Cassell Educational, 1990, p. 93.

<sup>10</sup> Bloom, Kiel: "Thinking through Language".

<sup>11</sup> See Barbara Malt, Philip Wolff: *Words and the Mind. How Words Capture Human Experience*. Oxford: Oxford University Press, 2010.

<sup>12</sup> Benjamin Whorf: "The Relation of Habitual Thought and Behavior to Language". In: *ETC. A Review of General Semantics* 1/4 (1944), pp. 197–215, at <https://www.jstor.org/stable/42581315> (accessed 2./08.21).

<sup>13</sup> Bloom, Kiel: "Thinking through Language".

<sup>14</sup> Roger Brown, Eric Lenneberg: "A Study in Language and Cognition". In: *The Journal of Abnormal and Social Psychology* 49/3 (1954), pp. 454–462.

<sup>15</sup> Jonathan Winaver, Nathan Witthoft, Michael Frank, Lisa Wu, Alex Wade, Lera Borodit-

In a third approach, assessments of similarity were reviewed by Lucy and Gaskins in a series of experiments which involved showing subjects an object and two alternative objects, one a different shape but the same material as the original and the other the same shape but a different material.<sup>16</sup> English-speaking participants were more likely to select the object with the same shape as more similar to the original. However, native speakers of Yucatec Maya were more likely to select the object of the same material as more similar. This cognitive difference is reflected in a linguistic difference between the two languages whereby English classifies according to shape/function and Yucatec according to substance/material. However, when Lucy and Gaskins repeated the experiment on seven-year-old children, all of them demonstrated a ‘same-shape bias’.

Further studies have investigated potential relationships between spatial relations and cognition. Spatial relations in different languages tend to be explained in either relative or absolute terms. When asked to recreate the position of objects on a table that had been rotated, the participants in an experiment by Levinson (“Frames of Reference and Molyneux’s Question”) tended to do so by employing an approach aligned with the description of spatial relations used in their mother tongue. For example, speakers of Dutch, which uses relative relations, recreated the scene in relative terms while native speakers of Tzeltal positioned them in absolute terms, i.e., to the north or south of one another, for example.<sup>17</sup> While often critiqued, there has been a growing renewal of interest in the SWH as more complex research approaches highlight paradoxes explained by the SWH.<sup>18</sup> For instance, recent brain imaging studies by Franklin et al. indicate that language affects thinking, with evidence that learning new words results in brain circuit modification.<sup>19</sup>

Thus, there appears to be some evidence for the notion that language influences thought. However, the field remains contested with large-scale comparisons across a range of languages required to help address and clarify the confusion.

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sky: “Russian Blues Reveal Effects of Language on Color Discrimination”. In: *Proceedings of the National Academy of Sciences of the United States of America* 104/19 (2007), pp. 7780–7785.

<sup>16</sup> John Lucy, Suzanne Gaskins: “Grammatical Categories and the Development of Classification Preferences. A Comparative Approach”. In: Melissa Bowerman, Stephen Levinson (eds): *Language Acquisition and Conceptual Development*. Cambridge: Cambridge University Press, 2001, pp. 257–283.

<sup>17</sup> Stephen Levinson: “Frames of Reference and Molyneux’s Question. Crosslinguistic Evidence”. In: Paul Bloom, Merrill F. Garrett, Lynn Nadel, Mary A. Peterson (eds): *Language and Space*. Cambridge MA: MIT Press, 1996, pp. 109–169.

<sup>18</sup> Lera Boroditsky: “How Language Shapes Thought”. In: *Scientific American* (February 2011), pp. 63–65.

<sup>19</sup> Anna Franklin, Vicky G. Drivonikou, Laura Bevis, Ian R.L. Davies, Paul Kay, Terry Regier: “Categorical Perception of Color is Lateralized to the Right Hemisphere in Infants, but to the Left Hemisphere in Adults”. In: *PNAS* 105/9 (2008), pp. 3221–3225.

## Future Time Orientation in Language Influencing Thought and Action

Responding to Bloom and Kiel's call, Chen in "The Effect of Language on Economic Behaviour" investigated whether a relationship exists between future orientation in language and particular behaviours including saving and investing in the future. In order to test this hypothesis, Chen used the distinction in linguistics, developed by the European Science Foundation's Typology of Languages in Europe (Eurotyp) project,<sup>20</sup> between languages with a weak and those with a strong FTR. As observed in the first section of this article, languages with a weak FTR do not require the future tense to be grammatically marked (e.g., German, Mandarin, Finnish) while those with a strong FTR (e.g., English, French, Italian) generally do. Using data from the World Values Survey (WVS),<sup>21</sup> a global survey of world cultures and values conducted in seventy-six countries between 1994 and 2007, Chen tested for an association between weak and strong FTR languages and future-oriented behaviours such as saving, exercising, smoking, condom use, saving for retirement and long-term health. Since a significant majority, though not all, of the languages spoken by those surveyed as part of the WVS are covered by the Eurotyp project, Chen then further extended his classification of languages using additional cross-linguistic analyses.

Chen's results suggest that native speakers of languages with a weak FTR are more likely to save, to use condoms, and to perform well on measures of long-term health, than are native speakers of languages with a strong FTR. In attempting to eliminate the argument that a third factor other than language caused this difference, Chen reviewed the results for matched subgroups in the sample such as those with identical levels of educational attainment, income levels, born and raised in the same country. The data appears to suggest that the effects noted are causal rather than markers of a third common causal factor, such as, for example, a cultural value common to all speakers of languages with a strong FTR.

Chen argues on the basis of these results that, for speakers of strong FTR languages, "[...] being required to speak in a distinct way about future events leads speakers to take fewer future-oriented actions".<sup>22</sup> He similarly argues that weak FTR languages that grammatically associate the future and the present, such as German and Swedish, foster future-oriented behaviour.

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<sup>20</sup> Östen Dahl: "The Grammar of Future Time Reference in European Languages". In: Östen Dahl (ed.), *Tense and Aspect in the Languages of Europe*. Berlin: deGruyter Mouton, 2000, pp. 309–328.

<sup>21</sup> World Values Survey Association: *World Values Survey 1981–2008, Official Aggregate*. Aggregate File Producer: ASEP/JDS, Madrid, at: <http://www.worldvaluessurvey.org> (accessed 03.11.2020).

<sup>22</sup> Chen: "The Effect of Language on Economic Behaviour", p. 391.

The domain of cognitive science provides some helpful insights into how subtle information processing differences might explain the apparent attitudinal and behavioural divergence between weak and strong FTR speakers. Psychologists in domains as varied as education and health have long studied the importance of individuals' ability to conceptualize the future.<sup>23</sup> This capacity referred to in these disciplines as "future time perspective" (FTP), has been found to be an important factor when assessing goal choice and adherence. Individuals who are high in the capacity to conceptualize the future tend to concentrate more agentically on current tasks as they perceive them as strongly connected to their future, while distant goals are less strongly connected.<sup>24</sup> Thus, it appears that those with a strong FTP are able to connect the future intimately to the present using a coherent goal script. Conversely, those with a weak FTP are less likely to connect or value future goals, rather they tend to value present hedonistic or fatalistic goals, as temporally distant goals require personal resource depleting effortful temporal processing that is beyond their comfort zone.<sup>25</sup> It is worth adding that FTP is a capacity that develops over time<sup>26</sup> as a result of socialization<sup>27</sup> which echoes the SWH of cultural influence on cognitive functioning.

There may be a strong conceptual link between the extensive work on FTP and our emergent understanding of FTR. It seems parsimonious to contend that a weak FTR is reflective of a strong FTP, as the future is perceived as part of the present for both, requiring little goal-script-shifting cognitive demands. Strong FTR language speakers face similar demands as those weak FTP individuals facing temporally distal goals. A subtle, yet effort-demanding, psychological shift is required to evoke the new goal script and more determination is required to connect it to present behaviour. Nuttin and Lens in their seminal treatise on FTP agree that this process requires a degree of temporal reintegration to bring the future object into an active continuity in the present.<sup>28</sup> Thus, considering a current or temporally present concept is psychologically less resource demanding than considering a future

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23 Gerald H. Seijts: "The Importance of Future Time Perspective in Theories of Work Motivation". In: *Journal of Psychology* 132 (1998), pp. 154–168.

24 Jerissa de Bilde, Maarten Vansteenkiste, Willy Lens: "Understanding the Association between Future Time Perspective and Self-Regulated Learning through the Lens of Self-Determination Theory". In: *Learning and Instruction* 21/3 (2011), pp. 332–344.

25 Quy Nguyen Huy: "Time, Temporal Capability, and Planned Change". In: *Academy of Management Review* 26/4 (2001), pp. 601–623.

26 Leonard Green, Astrid F. Fry, Joel Myerson: "Discounting of Delayed Rewards. A Life-Span Comparison". In: *Psychological Science* 5 (1994), pp. 33–36.

27 Kenneth B. Stein, Theodore Sarbin, James A. Kulik: "Future Time Perspective. Its Relation to the Socialization Process and the Delinquent Role". In: *Journal of Consulting and Clinical Psychology* 32/3 (1968), pp. 257–264, here p. 257.

28 Joseph Nuttin, Willy Lens: *Future Time Perspective and Motivation. Theory and Research Method*. Leuven, Hillsdale, NJ: Leuven University Press and Erlbaum, 1985.

located target. Reinforcing this, Stanley Klein's recent review of mental and memory processes underpinning future time perspective taking identified that different neural mechanisms combine when being present-focused versus imagining a virtual future. He summarizes by stating that "there are serious metaphysical, epistemological, and experiential differences between past experience and future imaginings".<sup>29</sup>

Building on these arguments, the remainder of this article discusses the possibility that a relationship exists between future time orientation in languages and future-focused attitudinal variables which have associated future expectations such as trust. The next section reviews the concept of trust and how the decision to trust, as future-focused ascription, may be influenced by strong versus weak FTR.

### Future Orientation in Language as a Predictor of Levels of Trust

The willingness and ability to trust is a critical factor in the success of human progress and civilization.<sup>30</sup> From choosing friends, to purchasing health insurance, to voting for a presidential candidate, the decision to trust is at the core of many key life decisions. Studied in many disciplines, there has been convergence on the conceptual representation of trust in recent times with general agreement that the characteristics of trust includes a future-directed expectation founded on estimated likelihood of positive outcomes.

More specifically, the decision to trust is based on an expectation of the future behaviour of the focal individual or agent. Research has indicated that this expectation is formed largely, although not exclusively, by the integration of cues related to the perceived competence, integrity and benevolence of the referent.<sup>31</sup> Thus, one is more likely to trust a physician who is at the top of their speciality, has a warm and empathic bedside manner and whose word is their bond, as against a physician who is warm and empathic but whose training is questionable. While some of these trustworthiness-building cues may emanate from the past behaviour of the referent, this is not necessarily always the case. However, the decision to trust involves a 'leap of faith' or risk on the part of the trustor built on judgments regarding the ability, honesty and benevolence of the agent, which are assumed to be predictive of the future behaviour of that agent.<sup>32</sup> This risk however tends not to be naïve and reck-

<sup>29</sup> Stanley B. Klein: "The Complex Act of Projecting Oneself into the Future". In: *WIREs Cognitive Science* 4 (2013), pp. 63–79, here p. 71.

<sup>30</sup> See Niklas Luhmann: *Trust and power*. Chichester, UK: Wiley, 1979; Francis Fukuyama: *Trust. Human nature and the reconstitution of social order*. New York: Simon and Schuster/Free Press, 1996.

<sup>31</sup> Roger C. Mayer, James H. Davis, F. David Schoorman: "An Integrative Model of Organizational Trust". In: *Academy of Management Review* 20/3 (1995), pp. 709–734.

<sup>32</sup> See Guido Mollering: *Trust. Reason, routine, reflexivity*. Bingley: Emerald Group Publishing, 2006.



less. Rather, it is somewhat calculative in form with an understanding that a breach of trust will damage any on-going relationship and associated mutual reciprocation. So trust, while neither as binding as, nor a substitute for, a formal contract, does assume predictability or stability of future behaviour.<sup>33</sup>

Recent trust research has underlined the critical importance of considering temporal cues when assessing trust decision processes.<sup>34</sup> McEvily differentiates between two types of effortful trust decision-making – heuristic versus probabilistic (controlled): “Heuristic decision making is relatively quick, involves limited information, and is based on preconceived notions about cause-and-effect relationships. These frameworks, or schemas, are akin to the automatic processes that are learned over time and stored in long-term memory”.<sup>35</sup> Probabilistic trust decisions are more resource intensive and require an iterative process of converting past-present cues to a yet-to-occur scenario: in effect, constructing a new mental script. Thus, it seems reasonable to suggest that those with weak FTR regard familiar trust referents in an automatic fashion using existing prototypical information rapidly accessed in the present context. Conversely, speakers of languages with strong FTR are required to switch to (integrate into) a more distal-projected form of thought that requires more controlled information processing, necessitating access to more fine-grained concrete information. This controlled consideration involves more cautious deliberation of cues and may result in more reserved trusting decisions.

Against a backdrop of this research, the following section seeks to provide initial empirical verification of a distinction between weak and strong FTR languages with reference to trust.

### Levels of Trust and Future Time Orientation in Language: An Empirical Exploration

Data from the European Social Survey, or ESS (Round 6, 2014), is used here to further tease out these complex issues.<sup>36</sup> The ESS is a highly regarded comprehensive pan-European survey conducted regularly since 2002 on approximately 50,000 participants and designed to uncover attitudes and behaviours in significant domains. The ESS focuses on several general questions regarding respondents’ perceptions of

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<sup>33</sup> See Karen S. Cook, Russell Hardin, Margaret Levi: *Cooperation without trust?* New York: Russell Sage Foundation, 2005.

<sup>34</sup> Lisa van der Werff, Finian Buckley: “‘Getting to Know You’. A Longitudinal Examination of Trust Cues and Trust Development During Socialization”. In: *Journal of Management* 43/3 (2014), pp. 742–770.

<sup>35</sup> Bill McEvily: “Reorganizing the Boundaries of Trust. From Discrete Alternatives to Hybrid Forms”. In: *Organization Science* 22/5 (2011), pp. 1266–1276, here p. 1272.

<sup>36</sup> European Social Survey 2015, at: <http://www.europeansocialsurvey.org> (accessed 03.11.2020).



**Table 8.1:** ESS Languages by FTR

<b>Future Time reference</b>	<b>Primary Language Recorded in 2014 data by &gt;0.1% of respondents</b>
<b>Strong Future Time Reference</b>	Albanian, Arabic, French, Polish, Portuguese, Bulgarian, Catalan, Greek, Hebrew, Hungarian, Italian, Lithuanian, Czech, English, Russian, Slovenian, Spanish, Turkish, Ukrainian
<b>Weak Future Time Reference</b>	Danish, Dutch, Estonian, Finnish, German, Luxembourgish, Norwegian, Swedish

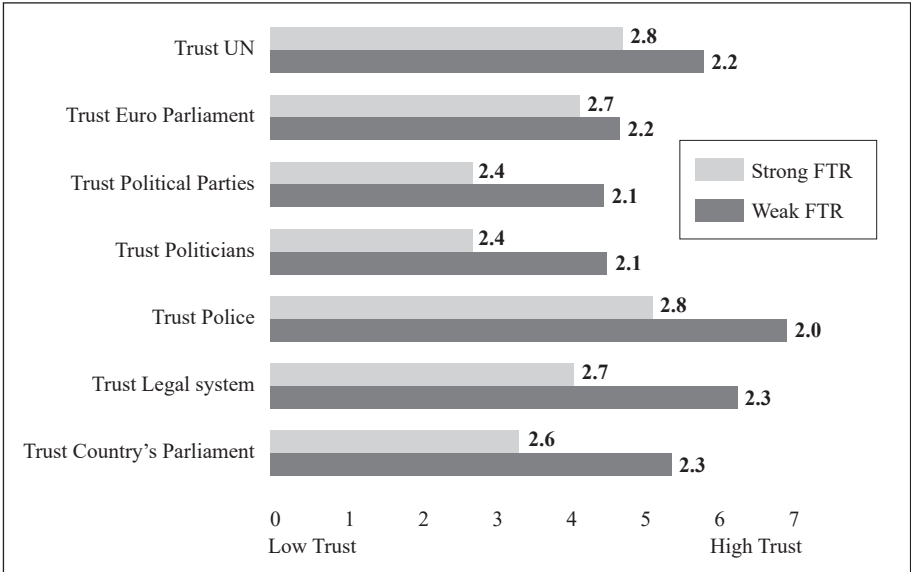
trust. Specifically, it seeks respondents' attributions of trust in (i) their parliament, (ii) their politicians, (iii) their legal system, (iv) their police force, (v) their political parties, (vi) the European parliament and (vii) the United Nations. Answers are given on a 1 to 10 scale where 1 = low levels of trust and 10 = high levels of trust. For items (i) to (vii) above, the question is phrased as follows for each of the institutions: "Using this card, please tell me on a score of 0–10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust. Firstly [...] [country]'s parliament?"

The ESS uses random, probability samples based on full population coverage of those aged fifteen and over in all of its surveys. While, of course, not exempt from the difficulties associated with international comparative survey research, according to De Weerd et al. in a review of the availability and quality of international data sources on active citizenship, "the team involved in ESS is especially geared to producing a survey that is methodologically sound."<sup>37</sup>

In order to investigate whether native speakers of futureless languages may be more likely to display higher levels of trust in institutions, a new variable was created for the purpose of this exploration within the ESS data file. This was done by classifying the languages listed by participants, in response to the question regarding the language spoken most frequently at home,<sup>38</sup> according to whether they had a strong or a weak FTR using the categorization developed by Chen in "The Effect of Language on Economic Behaviour". All languages recorded by more than 0.1% of ESS Round 6 2014 respondents were classified according to the Chen weak-strong FTR taxonomy (see Table 8.1), resulting in nineteen strong FTR languages and eight weak FTR languages. This resulted in a peak respondent pool of 13,704 for the weak FTR languages and 28,395 respondents in the strong FTR grouping.

<sup>37</sup> Marga De Weerd, Mireille Gemmecke, Josine Rigter, Coen van Rij: *Indicators for Monitoring Active Citizenship and Citizenship Education. Research Report for the European Commission*. Brussels: DG/EAC, 2005, p. 65.

<sup>38</sup> 'Language spoken most frequently at home' is the closest variable to 'first language' in the ESS survey. Limitations associated with the approximation of these two variables are considered in the final section of this article.



**Figure 8.1:** Mean Levels of Trust by Strong/Weak FTR of Language

This newly created weak-strong FTR variable was then used to perform Analyses of Variance (ANOVA) at the 99% confidence level on the ESS items relating to trust. As required when using ESS data,<sup>39</sup> the data was weighted using both the population weight and the post-stratification weights contained within the ESS. These ensure that sampling error and non-response bias is reduced (post-stratification weight) and corrected for different population sizes (population weight) when combining data from two or more countries.

To examine whether weak FTR language speakers have significantly higher trust scores than their strong FTR counterparts, an ANOVA was conducted. The data displayed in Figure 8.1 supports the hypothesis that weak FTR language speakers have higher trust scores (represented by the dark bars in Figure 8.1) than their strong FTR counterparts (light bars) for the seven ESS trust items measured, with standard deviations displayed at the apex of the bars.

Specifically the ANOVA revealed statistically significant differences across all trust items as follows:<sup>40</sup> trust in the national parliament  $F(1, 42097) = 6389.41$ ,  $p < .0001$ , trust in the legal system  $F(1, 42097) = 6723.06$ ,  $p < .0001$ , trust in the

<sup>39</sup> European Social Survey: *Weighting European Social Survey Data 2014*, at: [http://www.europeansocialsurvey.org/docs/methodology/ESS\\_weighting\\_data\\_1.pdf](http://www.europeansocialsurvey.org/docs/methodology/ESS_weighting_data_1.pdf) (accessed 03.11.2020).

<sup>40</sup> Minor differences between means in large sample surveys can lead to exaggerated statistical probabilities (i.e. large F scores). The means table displayed in Figure 8.1 indicates that the differences between the two FTR groups are not minor and follow-up Cohen's

police  $F(1, 42097) = 4819.49, p < .0001$ , trust in politicians  $F(1, 42097) = 6165.30, p < .0001$ , trust in political parties  $F(1, 42097) = 6054.06, p < .0001$ , trust in the European parliament  $F(1, 42097) = 487.82, p < .0001$ , trust in United Nations  $F(1, 42097) = 1655.99, p < .0001$ .

Thus, while initial and exploratory, the findings can be interpreted as providing an indication that higher levels of trust exist in the national parliament, the police, the legal system, political parties, politicians and the United Nations among speakers of languages with a weak FTR (i.e., languages that do not require the use of a future tense to describe the future) than among speakers of languages with a strong FTR (i.e., those whose language requires the use of a distinct future tense). They appear to support the SWH that language frames thought and the argument that language and thought do not exist as entirely separate entities in the brain. They also extend earlier SWH research foci beyond differences between perceptions of time, colour, objects and spatial relations between speakers of different languages into broader, more abstract terrain. For example, the findings uncover the possibility of an association between the nature of the mother tongue or language spoken most frequently at home and notions such as perceived predictability and stability.

They also suggest that cognitive-linguistic processes associated with future FTR influence trust attributions. While trust researchers have been cognisant of the existence of cultural difference in trust perceptions for some time,<sup>41</sup> these differences are hypothesized to emanate from deep-rooted cultural conventions and traditions guiding the perception and development of relationships with others, especially those that are regarded as categorically (dis)similar or linked. For example, Huff and Kelly reviewing their seven-country study of trust suggest that higher levels of trust in business relationships in their US sample, in contrast to their Asian sample, is explained by Asian collectivist culture placing high trust in in-groups and low trust in out-groups, thus effecting external business relationships.<sup>42</sup> While it is suggested that cultural differences can account for up to 20% variance in attitude levels,<sup>43</sup> the current study was not focused on cultural difference, rather a factor distinct and separate to culture, i.e., the strength of the future time reference of the language of the respondent. For instance, perhaps the most noted cultural

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d test for effect size, indicates that six trust differences are large ( $d > .8$ ), with trust in UN medium ( $d > .5$ ) and trust in European Parliament small ( $d > .2$ ).

- 41 Masaki Yuki, William W. Maddux, Marilyn B. Brewer, Kosuke Takemura: "Cross-Cultural Differences in Relationship- and Group-Based Trust". In: *Personality and Social Psychology Bulletin* 31 (2005), pp. 48–62.
- 42 Lenard Huff, Lane Kelley: "Levels of Organizational Trust in Individualist versus Collectivist Societies. A Seven-Nation Study". In: *Organization Science* 14/1 (2003), pp. 81–90.
- 43 Martin J. Gannon, Rajnandini Pillai: *Understanding Global Cultures. Metaphorical Journeys Through Seventeen Countries*. Thousand Oaks, CA: Sage, 1994.

taxonomy, Hofstede's four cultural dimensions (individualism versus collectivism, masculinity versus femininity, high power distance versus low power distance, and high uncertainty avoidance versus low uncertainty avoidance) suggests that different country clusters adopt different perspectives on core life issues dependent on their dominant cultural norm.<sup>44</sup> Applying Hofstede's taxonomy, countries such as Germany, Italy and the UK are regarded as high in masculinity, characterized by achievement orientation and competition, while Norway, Slovenia and Lithuania are regarded as high in femininity, characterized by cooperation, modesty and a drive for consensus. When we examine the FTR of the primary languages of these countries, we find the UK, Slovenia, Italy and Lithuania having strong FTR while Norway and Germany have weak FTR. In other words, the FTRs do not cluster neatly across Hofstede's four dimensions, in fact even where some clustering does occur (e.g., in high uncertainty avoidance), between-group differences do not accrue, with eighteen of the nineteen strong FTR language countries in the high group although six of the eight weak FTR country languages are also in this cluster. Additionally, while interesting to review, it should be recalled that this research did not categorize respondents according to nationality as the Hofstede research does, rather respondents were classified in terms of 'language spoken most frequently at home' (e.g., Arabic spoken in a home in Stockholm, Sweden), thus not necessarily a referent for the dominant cultural perspective.

### **Concluding Remarks, Limitations and Directions for Future Research**

This article considers the possibility that the ways in which future actions can be expressed in languages impacts how those who speak those languages perceive the future. Specifically, it has extended the contention that speakers of languages with strong and weak FTR differ in how they process trust attributions. Analysis of data from a multi-country dataset provides some initial indications of a relationship between the language spoken most frequently in the home and levels of trust in the future.

This research is not without its limitations, however. Although the dominant language in home/language spoken most frequently at home was used as the FTR identifier, this does not always equate with the first language of the respondent or indeed the language spoken most frequently outside of the home. In addition, one cannot underestimate the impact that local culture may have on respondent thinking and processing, regardless of FTR. A native speaker of a strong FTR mother tongue such as Italian might be domiciled in a weak FTR milieu (e.g., Norway) for many years and some cross-fertilization of future perspective tendencies may have

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<sup>44</sup> Geert Hofstede: "The Interaction between National and Organizational Value Systems". In: *Journal of Management Studies* 22/4 (1985), pp. 347–357.

occurred, despite Italian remaining the language of the home. Furthermore, efforts to test for the impact of the complete linguistic repertoire of the individuals and not just their self-reported first language was beyond the scope of this research. Thus, there is considerable scope for further research in this arena which would also benefit from the incorporation of more qualitative elements and approaches, given the complexity of the subject.

A further intriguing study would be to assess the trust attributions of respondents from bilingual homes. Researchers might evaluate whether there is a dominance of strong over weak FTR or whether cross-fertilized hybridization takes place. Finally, while the current research considered data from European countries, future researchers might expand the research to include data from non-European samples in order to assess the consistency of any weak versus strong FTR effect globally. They might also find value in attempting to map the potential range of influence of language on thought beyond future oriented concepts such as trust or future planning to current or experienced thought differences, ultimately deepening our understanding of the complex relationship between language and thought.

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