



Ca' Foscari
University
of Venice

Master's Degree programme

in Language Sciences
classe LM-39 - Linguistics

Final Thesis

LANGUAGE AND DECISION MAKING: A CROSS-LINGUISTIC STUDY OF THE FOREIGN LANGUAGE EFFECT IN ITALIAN-ENGLISH BILINGUAL SPEAKERS

Supervisor

Prof. Giulia Bencini

Assistant supervisor

Prof. David John Newbold

Graduand

Giorgia Zanfardin

Matriculation Number 865468

Academic Year

2017 / 2018

TABLE OF CONTENTS

Abstract	iii
INTRODUCTION	1
1. MORAL DECISION MAKING AND ETHICS: A REVIEW	7
1.1. What is ethics?	7
1.2. The doctrine of Right in ancient Greece	10
1.3. Modern ethics and the pursuit of happiness	11
2. THE FOREIGN LANGUAGE EFFECT	15
2.1. Literature review	16
3. FOREIGN LANGUAGE EDUCATION, UTILITARIANISM, AND DEONTOLOGY: INTERSECTIONS	23
3.1. Conway and Gawronski's case study to resolve theoretical ambiguities	29
4. MORAL COMPASS AND FOREIGN LANGUAGE: CASE STUDIES	35
4.1. Study One	36
4.1.1. Method	36
4.1.2. Results	41
4.1.3. Discussion	43
4.2. Study Two	44
4.2.1. Method	44
4.2.2. Results	46
4.2.3. Discussion	47
4.3. General discussion and further research	49
CONCLUSIONS	51

References	53
Appendix A: Materials used in Study One	63
Appendix B: Materials used in Study Two	71
Acknowledgements	73

ABSTRACT

Would you kill one person to save five? Would your answer depend on whether you are asked the question in a native or in a foreign language? A growing body of research suggests that using a foreign language may affect how we perceive and react to the world. As unintuitive as it may seem, using a foreign language does change our choices (Hayakawa, 2017:7).

This study investigated the role of reasoning in a foreign language in moral judgment and decision making. Participants were presented with incongruent dilemmas in a non-native language (English). The dilemmas were modelled on those used in a previous study (Conway and Gawronski, 2013).

The moral dilemmas were designed to pit deontological inclinations against utilitarian inclinations by presenting the outcomes of harmful actions as more beneficial than the harm caused by the action itself.

Participants were Italian University students enrolled in a Modern Languages Program. All participants were highly proficient in English (level B2 or C1 of the CEFR), with age ranging from 19 to 29.

Study one showed greater utilitarian tendencies when the task was performed in Italian; it would appear from this first investigation that the foreign language factor might not be as dominant in decision making as we firstly thought.

Study two, which included an additional set of control dilemmas designed to avoid possible carryover effects, showed a small increase in utilitarian

responses to English dilemmas. This small discrepancy is still evidence that the foreign language effect can occur under certain conditions.

Results are discussed in light of recent studies that report differences between reasoning in one's first versus foreign language.

INTRODUCTION

*Thought, if it be translated truly, cannot be lost in another language;
but the words that convey it to our apprehension - which are the
image and ornament of that thought - may be so ill chosen as to make
it appear in an unhandsome dress, and rob it of its native lustre.*

- Fujimura quoting Dryden, 1975.

Eighteenth-century English eminent poet Dryden, whose late work focused on the role of metaphors in poetry, was a passionate advocate of the power of words. In poetry, as in everyday communication, words are the main tool to gracefully describe a thought. In fact, when attired with delicate meanings and elegant words, thoughts become powerful and concrete expressions of ideas and feelings; most important, they can be shared.

Among others, this is, in fact, one of the magical abilities that we humans have: we can transmit highly complex thoughts to one another using language. Because of this spectacular ability, we humans are able to transmit our ideas across vast reaches of space and time: we can transmit knowledge across minds.

The situation might get complicated since there is not just one language in the world, but around seven thousand languages spoken around the whole world¹ (Ethnologue, 2009), all of which differ from one another in all kinds of ways. Some languages have different sounds, they have different vocabularies, and they also have different structures. That begs the question: does the language we speak shape the way we think?

¹ The most extensive catalogue of the world's languages is that of Ethnologue, published by SIL international, whose detailed classified list as of 2009 included 6.909 distinct languages.

People have been speculating about this question forever. Holy Roman Emperor Charlemagne, whose native language was Vulgar Latin, but because of his political position was fluent in traditional Latin, said: "To have a second language is to have a second soul". A strong statement that language crafts reality. However, on the other hand, Shakespeare has Juliet say: "What's in a name? A rose by any other name would smell as sweet". These arguments have gone back and forth for thousands of years, but until recently there hasn't been any data to help us decide either way (Boroditsky, 2018).

First scientific based theories about language, thoughts, and behaviour are born approximately in the nineteenth century with the principle of Linguistic Determinism², i.e. the idea that thought is not only dependent but also determined by language. This theory is most commonly associated with the name of Benjamin Lee Whorf, an American linguist and advocate for the idea that different language structures shape how speakers conceptualise the world. In his own words:

Human beings do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood, but are very much at the mercy of the particular language which has become the medium of expression for their society. It is quite an illusion to imagine that one adjusts to reality essentially without the use of language and that language is merely an incidental means of solving specific problems of communication and reflection. The fact of the matter is that the "real world" is to a large extent unconsciously built up on the language habits of the group. (Mandelbaum, 1949:162)

This statement, emblematic of Whorf's position, holds that language alone determines the entire range of cognitive processes. This strong Whorfian view,

² Whorf first defined this hypothesis as Linguistic Relativity, because he saw the idea having implications similar to Einstein's principle of physical relativity (Heynick, 1983).

although being acutely innovative for its time, has long been abandoned in the field and is now generally agreed to be false (Ahearn, 2011: 69).

Thanks to an increasing interest in the field of language and thought that has sprouted in the past decades, and the development of experimental techniques and laboratory equipment, scientists around the world have started to gather actual scientific data about the correlation existing between language and perception of the world. We now have significant evidence in support of the notion that language can influence thoughts and behaviours, and shape the way we experience the world around us. For instance, the language we speak can affect how we discriminate between colours (one of the first studies in this field is attributed to Rosch, 1975 and 1978; see also Winawer et al., 2007), perceive time (Boroditsky, 2001; Casasanto, 2008), experience music (Dolscheid et al., 2013), and categorize objects (Lucy, 2004).

Furthermore, when it comes to ethical judgment and decision making, individual and organisational factors have always received greater attention in empirical research. For instance, prior research has shown that inconsistent ethical judgments are attributable to individual factors such as gender (Bampton & Maclagan, 2009; Eweje & Brunton, 2010), personality (Watson & Berkley, 2008; Marquardt, 2010), religion (Fernando & Chowdhury, 2010; Oumlil & Balloun, 2009), cultural values, and nationality (Ho, 2010; Su, 2006), as well as organizational factors, such as organisational reward/sanction systems (Hayibor & Wasieleski, 2009; Premeaux 2004), code of ethics (Deshpande, 2009), and organisational culture (O'Leary & Stewart, 2007).

Despite these prior investigations, several lines of research have explored domains that appear more likely to reveal linguistic influences than such low-level

domains as colour perception (Boroditsky, 2001: 2). This early *corpus* of research showed evidence of grammatical gender distinctions in Spanish (Sera, Berge, & del Castillo, 1994), cross-linguistic differences in spatial thinking (Bowerman, 1996; Levinson, 1996), and evidence suggesting that language influences conceptual development (Markman & Hutchinson, 1984; Waxman & Kosowski, 1990).

However, there is another aspect of the language that has yet not been sufficiently explored, and that could affect how we think, feel, and even behave. That is, whether thinking is processed in a native or foreign language. There is, in fact, a growing body of research demonstrating that using a foreign language - especially at a high proficiency level - influences our choices and our interactions in the world (Cipolletti, 2015; Costa et al., 2014a; Dawaele & Nakano, 2012; Fausey & Boroditsky, 2011; Geipel 2016; Hayakawa et al., 2017a; Pan & Patel, 2018).

In this increasingly globalised world, speaking one or more foreign languages is the new normal. Travelling and communication technologies have fostered contact between cultures more than ever before, leading to a situation of deep multilingualism in which citizens and policymakers often speak and decide based on communications in a foreign tongue. Foreign-born professionals such as doctors, lawyers, managers, CEOs, make important decisions every day, people in business negotiate international deals, and representatives from every country in the world negotiate deals about issues ranging from climate change to human rights (Hayakawa, 2017b). While individual background factors such as culture, personal interests, and ideologies easily come to mind as influential in decision-

making processes, an underrated but nowadays extremely relevant factor is the language in use.

Through a simple questionnaire based on the original research run by Conway & Gawronski (2013), a two-version experiment explores potential effects of the so-called *foreign language effect* (FLE) in the domain of moral judgment. The goal of the following research is to investigate whether the use of a foreign language influences the moral decision process in Italian-English bilingual participants; the process driving such effect will not be first-hand tested, but results from previous studies in the field will be taken in consideration for the discussion of the results.

1. MORAL DECISION MAKING AND ETHICS: A REVIEW

*Ethics is to know the difference between
what you have the right to do
and what is right to do.*

Potter Stewart

What we aim to explore in our investigation is the possible correlation existing between the use of a foreign language and its influence on ethical choices; before discussing the main content of this research, let us, therefore, present a reiterative review of what ethics is and how thoughts about moral behaviour has changed among philosophers and scholars over the years. This presentation aims to introduce and explain pivot concepts such as *utilitarianism* and *deontology*, further used in our dissertation.

1.1. What is ethics?

The word has its roots in ancient Greek term ἦθος, *êthos*, meaning “character, moral nature” (Tzafestas, 2016:13). In general, it expresses either the whole concept of morality or the study of principles relating to right and wrong conduct.

Reflecting upon the second field of action of the term, i.e. ethics as one of the branches of philosophy, it gems from seemingly simple questions. Why is death a bad thing for the person who dies? Is there anything more to happiness than pleasure and freedom from pain? What makes honest actions right and dishonest actions wrong? These are questions which naturally occur in the course of our lives, just as they naturally did in the lives of people who lived before us and in societies with different cultures and technologies from ours. Such questions

appear simple, yet they are ultimately perplexing: in fact, every sensible answer one tries, proves unsatisfactory upon reflection.

This reflection is the mere beginning of philosophy. The questions with which ethics and similar branches of philosophy begin are different from everyday dilemmas such as "Is there life on Mars?" in the sense that it is in the nature of ethical questions to resist easy answers. This is due not to difficulties in getting the relevant facts, but because of difficulties in making sense of them: we reflect on the matters in question and discover that our common ideas contain confusion and have surprising implications. The philosophical study begins with seemingly simple questions and uncovers its hidden difficulties. This is its purpose: moral philosophy seeks to overcome difficulties in apparently simple questions by thoroughly and critically examining our ideas and beliefs.

These not-so-simple questions arise from reflection on situations in life that involve matters of morality. Imagine that during your morning walk you find a woman's purse in the bushes which appears not to be stolen for it contains a driver's license and a wad of cash. Would you look for an address or a phone number to call and return the purse to its owner or would you keep the wad of cash and toss the bag back into the bushes?

Ethics reflect on such questions: it is, in fact, the philosophical study of morality. It is a study of what are good and bad ends to pursue in life and what is right and wrong to do in the conduct of life (Deigh, 2012:9). Its primary purpose is to determine how one ought to live and what actions one ought to do in the conduct of one's life. To better grasp the meaning of what moral philosophy is, we must be sure of what is meant by *morality*.

This word is used to mean different concepts, and consequently, to avoid confusion and possible misunderstandings, we need to pin down what it means when ethics is defined as the philosophical study of morality. The first notion underlying this word is "a particular system of values and principles of conduct" (Stevenson, 2010) given in a certain society, we might add. In this way, morality is meant as an existing institution of a particular society. Unlike the first notion, the second represents morality as a universal ideal: the standards it comprises are found by reasoning and argument from elementary facts about human existence taken abstractly, rather than by observing and analysing the complex social and cultural life of a particular society. "Universal" morality is the subject of ethics.

Over the last 2.500 years, Western philosophers have formed three main theories on how to live an ethical and moral life. First off, there is *virtue ethics*: Aristotle believed that there were certain virtues of mind and character and that each should try to develop him or herself following those virtues. Next, there is *consequentialism* or *utilitarianism*: the basis for judgment about whether something is right or wrong stands from the consequences of that action - how much utility, or good, did it accomplish, versus how much pain, or bad. Finally, there is *deontology*, the school of thought that there are strict rules and duties that everyone must adhere to in a functioning society. In this context, being ethical is merely identifying and obeying those duties and following those rules. Let us now make a brief review of this development, starting from the beginning.

1.2. The doctrine of right in ancient Greece

In the West, virtue ethics' founding fathers are Plato and Aristotle, and it persisted as the dominant approach in Western moral philosophy until at least the Enlightenment.

The core of the approach has its roots in Plato's *Republic*. Plato (427-347 BC) sets his study of the problem with an account of an exchange between Greek philosopher Socrates (469-399 BC) and the sophist Thrasymachus. The attention of the dialogue is on the question of whether the best life, assuming success in life, is one of justice and honesty or the opposite. Thrasymachus boldly sides with the latter. He argues that just and honest people always come out on the short end in their relations with unjust people. In a nutshell, Thrasymachus maintains that to act justly is to act for another's good and not one's own and that the unjust person is not so foolish as to ignore his good for the sake of others'.

In his dialogue, Plato thus turns Thrasymachus' challenge into one of the central dilemmas of ethics: on what basis can we understand justice as admirable in itself, as something one has good reason to practice even in circumstances in which one would profit from injustice without the least fear of being found out. At this point, all left to do is to find those characteristics that, according to Plato, lead to a morally right life. These are identified with virtue (or excellence) and moral (or practical) wisdom; the former is an excellent trait of character, a disposition, something to be born with, whereas the latter is something that makes its possessor good (Hursthouse & Pettingrove, 2018).

Later philosophers have argued that Plato's theory suffers from a critical problem based on a mistake (Deigh, 2012: 18-20): critics maintain that the mistakes consist in confusing the question of whether the basic standards of

honesty and justice are authoritative with the question of whether they are ultimate guides to achieving one's end or satisfying one's interests. Philosophers who make this criticism of the *Republic's* core dilemma take morality to be a system of mere standards whose authority in rational thought is independent of the interests and desires of those whose conduct the system regulates. The critical element in this tendency of thinking is that moral standards define duties, for to have a duty to do something is to be bound to do it regardless of one's attitudes about doing it or the effects on one's interests of doing it (Prichard, 1912: 21-37).

1.3. Modern ethics and the pursuit of happiness

The opposition between Plato and his critics represents a significant division among ethical theorists, which reflects a disagreement over the proper conception of morality. Theories consistent with Plato's idea are *teleological*, in the sense that they support the conception that morality comprises standards of right and wrong conduct that have authority in rational thought in virtue of the ends or interests served by the conduct that these standards guide (Deigh, 2012: 14-15).

According to the opposing theories, morality comprises standards of right and wrong that have authority in rational thought independently of the end or interests of those whose conduct they guide: therefore, the morality of an action depends on the nature of the action itself. This is the principle of *deontology*, a technical term in ethics whose meaning comes from the Greek word *deon*, duty. According to Deigh (2012), deontological conceptions derive from an idea of universal divine law that Christianity drew from the Judaic materials from which

it sprang: the divine laws of a supreme ruler that bind his subjects to obey him in the way that a covenant with him would bind them.

Teleological theories, on the other hand, include philosophies such as *egoism* and *eudaimonism*, which share an outlook of self-concern. They both identify the perspective from which a person judges what ought to be done as that of someone concerned with how best to promote his person's good. On either theory, the highest good for a person is that person's good, whether this is his happiness or his well-being. They both are part of what has been called "ancient ethics".

"Modern ethics", by contrast, has been marked by a shift away from previous teleological outlook: the focus shaft from one person's own good to the good of humankind or of salient animals generally. This is called *utilitarianism*. It still is a teleological theory in the sense that it reflects on what one would be well-advised to do because of one's ends and interests, but the good it chases is understood either as the good of humankind or the good of all animals capable of experiences with which human being can sympathise.

In this modern view of ethics, acts are considered to be right or wrong according to as they further or impede the achievement of this end. This standard is commonly known as the "Principle of Utility" or the "Greatest Happiness Principle" (Mill, 1867: chapter 2). Founder of utilitarianism was Jeremy Bentham (1747-1832), while its most eminent defender was John Stuart Mill (1806-1873). Bentham's formulation of the principle as a prescription about the promotion of happiness - which runs "So act as to bring about as much happiness in the world as you can in the circumstances you face" (Deigh, 2010: 94) - is thus characteristics of classical utilitarian theory.

This theory was fiercely attacked by critics arguing that, according to Bentham's definition, one should apply the Principle of Utility directly to one's circumstances when determining what one ought to do. To avoid these embarrassing results, then, it is necessary to deny that utilitarian tendencies are influenced and elicited only by personal circumstances.

In order to avoid the criticism, Mill, in his most famous work *Utilitarianism* (1863), restates the definition and field of action of the Principle by recognising a plurality of moral principles that are subordinate to the Principle itself. In Mill's version, an action is right if it conforms to the rules of morality and wrong if it violates them, where the abovementioned rules are those principles that wisdom has shown to be the principles human beings observe and follow if they are secure and promote the general good. This version of utilitarianism recovered from Mill's restatement of the original theory is now commonly called *rule utilitarianism* (Deigh, 2012: 106-108), opposed to the original theory which is now generally called *act utilitarianism*. The former is so-called because on that version rules are what one evaluates by consulting the Principle of Utility; the latter derives its name by the fact that one applies the Principle directly to individual acts to determine whether they are right or wrong.

Over the decades, Bentham's theory and Mill's restatement of utilitarianism have been at the basis of several new theories which all aim to the greater good of humankind. Even if they have a common arrival point, these modern theories differ in the way to achieve it. Such theories have been defined as *Ideal Utilitarianism* (Rashdall, 1907), *Preference Utilitarianism* (Harsanyi, 1977), and *Two-Level Utilitarianism* (Hare, 1976).

2. THE FOREIGN LANGUAGE EFFECT

*If language goes beyond reality,
go there too.*

Anne Carson

It is estimated that half of the world's population (Grosjean, 2010) use more than one language on a daily basis to communicate, work, and interact with the world (Keysar, Hayakawa, & An, 2012). Furthermore, the modern process of globalisation has led citizens and policymakers to often judge and decide using a foreign language, by which we denote a non-native tongue learned in a classroom context rather than by immersion in a culture, which is to say, a second language (Geipel, Hadjichristidis, & Surian, 2016). The issue of whether language shapes the way we perceive the world has long interested linguists, philosophers, anthropologists, and psychologists. This interest has been based on the observation that different languages talk about the world differently (Boroditsky, 2001). Questions such as “Does the fact that language differ mean that people who speak different languages think about the world differently?” and “Does learning new languages change the way one thinks?” have naturally arose from this observation, since nowadays, communication in foreign languages is common practice in international organisations, such as the European Council and the United Nations, whose decisions have global impact. Moreover, such decisions often involve moral considerations, for instance “Should we impose immigration quotas” (Geipel, Hadjichristidis, & Surian, 2016:34).

A growing body of research has therefore been investigating if and how the use of a foreign language affects judgment and decision making.

2.1. Literature review

The "Foreign Language Effect" (FLE) refers to the activation of systematic reasoning processes engaged with reasoning in a foreign language. This effect was first documented by Keysar, Hayakawa, & An (2012). Their study found that using a non-native tongue reduces decision-making biases. In particular, they investigated the domain of risk-taking and demonstrated that people randomly assigned to gamble using a foreign language were more willing to take risks than those assigned to use their native tongue.

According to Kahneman and Tversky (1979) most people prefer a guaranteed positive outcome when betting, rather than the possibility of a total win or a total loss. Thus, it appears that people prefer to save the lives of 4 out of 10 people for sure, than to take a chance of saving all of them or none. Such asymmetry in risk preference, which exists even when the choice is simply framed differently, is robust and has been demonstrated in many studies. For a review, see Kühberger, 1998.

In their study, Keysar, Hayakawa, & An (2012), investigated whether this asymmetry could be affected by the use of a non-native language. Specifically, they proved that Korean native speakers were more likely to make a bet on a fair coin when presented with the possibility in English: this evidence shows a reduced tendency towards loss aversion. In a more recent study Costa et al. (2014a) employed the "Holt-Laury test" (Holt & Laury, 2002) and found similar results. Participants were asked to make ten choices between paired lotteries. The results showed that participants who used a non-native language were more willing to take an advantageous risk in all-or-nothing situations.

The question that arises is: how is it exactly that an apparently secondary factor such as the language we speak while solving problems or making decisions affect the way we perceive and act in the the world?

Keysar, Hayakawa, & An explain the phenomenon by claiming that "perhaps the most important mechanism for our effect is the reduction in emotional resonance that is associated with using a foreign language" because, they say, "using a foreign language may provide greater distance because it is less grounded in the emotion system than a native tongue is" (Keysar, Hayakawa, & An, 2012:661). In a nutshell, they hypothesise that decisions made in our native tongue automatically trigger some associated emotions. In domains outside of judgment and decision making, foreign language use in participants has been shown to attenuate emotional responses to words and phrases (see Caldwell-Harris, 2015; Pavlenko, 2012).

Harris and colleagues found that childhood admonitions such as "Don't do that!", evoked reduced skin conductance responses when these were read aloud in a foreign language (Harris, Ayçiçeğ, & Gleason, 2003; Harris, Gleason, & Ayçiçeğ, 2006). Several studies have also found that late bilinguals react less emotionally when presented with taboo words, reprimands, expressions of love, and advertisements slogans in their L2, as demonstrated by subjective ratings as well as electro-dermal responses (e.g., Ayçiçeği & Harris, 2004; Dewaele, 2004; Harris, Ayçiçeği, & Gleason, 2003; Puntoni, de Langhe, & van Ossaer, 2009).

It has also been shown that when communicating in a foreign language, people feel more comfortable to discuss topics that are considered off-limits or taboo in their native culture and language, as demonstrated, for instance, by Bond and Lai (1986) in their investigation about Chinese-English bilinguals. Results

showed that participants spoke longer about touchy topics, such as sexual attitudes and preferences when using their second language. Similarly, Dewaele and Nakano (2012) found that several UK-based multilinguals preferred using swear words in a foreign tongue, stating that the use of another language allows them to escape from cultural and social restrictions.

In order to present an as much as possible unbiased review of the literature in the field of the FLE, it seems necessary to mention that some studies have failed to detect an attenuation of emotions; see, for instance, Ayçiçeği-Dinn & Caldwell-Harris, 2009; Eilola, Havelka, & Sharma, 2007; Sutton, Altarriba, Gianico, & Basnight-Brown, 2007. Harris and colleagues tried to resolve the breach by proposing that the relative emotionality of a native versus a foreign language depends on a complex interplay between age of acquisition, level of proficiency, and the emotional context in which the non-native language is learned and used (Caldwell-Harris, 2014; Harris et al., 2006).

Discordant results have also been found in the domain of risk-taking, especially by Gao and colleagues (2015) who observed a foreign language decrease in this field. One possible explanation may be that their study involved gambles with negative expected value, in opposition to previous investigations which included only those with positive expected value. Surprisingly, Gao's research discovered that using a non-native tongue reduces the so-called "hot hand fallacy"³. Their experiment involved a series of 50/50 gambles that participants were asked to accept or not; before making a choice they were given oral feedback such as "Excellent" or "Sorry" in either their native or foreign tongue.

³ Also known as the "hot hand problem", it is a phenomenon in which a person who experiences a positive outcome due to randomness, has a greater probability of success in further attempts. The fallacy was first scientifically studied and analysed by Gilovich and colleagues (1985) in correlation with the game of basketball.

The investigation discovered that those using their native language were significantly more willing to accept a gamble after receiving positive feedback - despite the gambles being independent - whereas those who received stimuli in the foreign language were not affected whatsoever. This evidence suggests that individuals may be less swayed by irrelevant information given in a non-native tongue in a risk-taking situation.

The domain of action of the foreign language effect is therefore vast, ranging from gambling to emotions; for this reason, recent studies have broadened the spectrum of investigation by questioning whether the use of a foreign language could affect moral judgment. Among the others, Costa and colleagues (2014a, 2014b) and Geipel et al. (2014) discovered that indeed it does.

Their experimental findings were confined to the trolley dilemmas - both in Foot's and Thomson's versions - designed to create tension between a characteristically utilitarian perspective and a characteristically deontological perspective. Further details about the trolley problem will be given in Chapter 3. Unsurprisingly, adults and children by the age of four typically considered acceptable to pull the lever, but not to push the man (Cushman, Young, & Hauser, 2006; Pellizzoni, Siegal, & Surian, 2010). Furthermore, when presenting these trolley dilemmas in a foreign language, utilitarian responses (i.e. pushing the man onto the train tracks) increased but just for the footbridge dilemma (Costa, Foucart, Hayakawa, et al., 2014a; Geipel et al., 2014). Interestingly, they discovered a correlation between proficiency and moral inclinations: as proficiency in the foreign language increased, language differences decreased. The same results were robust across a large variety of foreign language combination and cultures; see, for instance, Cipolletti et al. 2015.

The explanation proposed for this phenomenon may be the so-called "emotional resonance" that a problem elicits. As suggested before, emotion plays a central role in one's perception of dilemmas. The term emotional resonance refers to the emotionality elicited by a given problem. Indeed, problems involving a high-emotional connotation, and likely to elicit high emotional resonance, are said to be especially susceptible to heuristic biases, therefore reducing the recruitment of more logical reasoning (e.g., Loewenstein, Weber, Hsee, & Welch, 2001; Naqvi, Shiv, & Bechara, 2006; Quartz, 2009; Slovic, Finucane, Peters, & MacGregor, 2002). According to this theory, the proposed explanation about the FLE in moral judgment is that foreign language triggers emotional distance, which privileges controlled processing, i.e. the controlled-processing hypothesis. Its effects are observed in the footbridge dilemma, as it is intrinsically processed by the emotional system, but not in the trolley dilemma, which is commonly processed by the controlled system (Greene et al., 2001).

These findings are also compatible with the "automatic-processing hypothesis"; in fact, whilst the footbridge dilemma involves a prohibited action (i.e. pushing and therefore killing an innocent man), the trolley problem does not. It could be that the foreign language favoured utilitarian responses for the former dilemma because it allowed people to see past the taboo action, either by reducing the aversive response linked to the prohibition and/or by deactivating social and moral norms. This hypothesis is consistent with recent studies that suggest that utilitarian responses do not necessarily imply cognitive controlled processes, but may also arise from impaired social cognition, such as a reduced level of empathy (Duke & Bègue, 2014; Kahane, Everett, Earp, Farias, & Savulescu, 2015).

FLE on moral judgments and decision-making have also been observed in more ecologically valid settings. For instance, Geipel et al. (2015) found that those using a foreign language were more lenient when judging physical harmless actions such as selling someone a defective car or cutting in line when in a hurry. Pan and Patel (2016) investigated whether an individual makes systematically different ethical judgments in his/her native and foreign languages specifically in the business ethic domain. Participants were Chinese final year undergraduate accounting students with high proficiency in the English language. The experiment provided empirical evidence that Chinese accounting students are more aggressive in interpreting the concept of "control" when providing their consolidations reporting recommendations in English than in their native tongue, i.e. simplified Chinese.

These more realistic and plausible scenarios raise the possibility that using a foreign language may have real-world consequences for that half of the world's population (Grosjean, 2010) who regularly speak a non-native language (Costa et al., 2014a and 2014b). For instance, given that more and more people routinely make decisions in a foreign language rather than their native tongue, new discoveries in the field could have far reaching implications for individuals and for society (Keysar, Hayakawa, & An, 2012:666). Finally, we believe that gaining a better understanding of why and how language changes our choices might very well be beneficial over a long time horizon.

3. FOREIGN LANGUAGE EDUCATION, UTILITARIANISM, AND DEONTOLOGY: INTERSECTIONS

*Out beyond ideas
of wrongdoing and rightdoing,
there is a field.
I will meet you there.*

Rumi

The following chapter will explore the correlation between ethics and foreign language through the presentation of previous studies in the field and their findings. These will be the basis on which our research relies.

Let us start from the premise that people often believe that what is not wrong, is therefore right; that what is not black, has to be white. Is there anything in the middle? Catholic religion states that "stealing is wrong", but what if the reason why I stole some bread is that I just got unfairly fired and I have a newborn at home to be fed? Is stealing always wrong?

Moral philosophers, writers, and scholars differ on the issue, because the relevant moral principles conflict. Stealing would be morally unacceptable according to the *deontological principle*, whereby the morality of an action depends on its intrinsic nature regardless of its consequences; thus, stealing from a bakery would mean an income loss for the owner, regardless of the reasons why the theft has happened. On the other hand, stealing some bread would be morally acceptable according to the *utilitarian principle* of morality, whereby the morality of an action is determined by its consequences. In our scenario, feeding the newborn would be an acceptable and justifiable reason for stealing (Conway & Gawronsky, 2013: 216).

It is obvious, and it has been for centuries, that a univocal answer to the abovementioned question "what is right and what is wrong" is not easy to find.

Actions are therefore judged sometimes on the basis of deontology whereas at other times they are judged on the basis of utilitarianism.

Traditional investigations in this field have provided useful insights into moral psychology, but they also have limitations. The traditional dilemma methodology has always wanted participants to categorize a harmful action as either acceptable or unacceptable, thereby pitting *either* the deontological *or* the utilitarian principle (e.g. Bartels, 2008; Carney & Mason, 2010; Ciaramelli, Muccioli, Ladavas, & di Pellegrino, 2007; Greene, Morelli, Lowenberg, Nystrom, & Cohen, 2008; Greene, Nystrom, Engell, Darley, & Cohen, 2004; Greene et al., 2001; Hofmann & Baumert, 2010; Koenigs et al., 2007; Mendez, Anderson, & Shapria, 2005; Moore, Clark, & Kane, 2008; Nichols, 2002; Nichols & Mallon, 2006; Pellizzoni, Siegal, & Surian, 2010; Petrinovich & O'Neill, 1996; Petrinovich, O'Neill, & Jorgensen, 1993; Valdesolo & DeSteno, 2006).

A careful analysis of this phenomenon would reveal that action in line with the utilitarian principle would be simultaneously in opposition to the deontological principle, and vice versa. Thus, the traditional approach confounds *selecting* one option with *rejecting* the other (Costa & Gawronski, 2013, p.217).

This phenomenon might be acceptable if the two principles were inversely related; however, theorists and scholars have argued that deontological and utilitarian inclinations originate from two functionally independent and distinct processes, therefore allowing for the possibility that both principles are active at the same time (Greene, 2007). Indeed, moral dilemma research bases its methodology on high-conflict dilemmas able to trigger conflict between the two inclinations, and that the stronger inclination is the one dictating the behavioural

response. Hence, such conflict would not occur if the two principles were inversely related. Consider, for instance, this classic problem:

You are standing on a footbridge overlooking a train track. A small on-coming train is about to kill five people, and the only way to stop it is to push a heavy man off the footbridge in front of the train. This will kill him but save the five people. Would you push the man?

This challenging moral dilemma was specifically designed to offer two simple alternatives to the decider, both of which would end in tragedy. The famous "Footbridge problem" was extensively used and analysed in moral psychology empirical research from moral philosopher Judith Thomson (1985), basing her work on moral philosopher Philippa Foot's "Trolley dilemma"⁴ (1967 and 1978). In Thomson's scenario, people seemed reluctant to sacrifice the stout man, even those who tolerated the sacrifice of one person to save five in Foot's original experiment; but why?

One possible explanation may be that killing the one is seen as a side-effect of the attempt of saving five persons, while in the second case the killing of a stranger is a deliberate and conscious action towards the rescuing of the five. Moreover, it is typical of deontology to claim that harming is always wrong and needs punishment, while nobody can be punished for refusing to help (Rosas, Viciano,

⁴ Foot's original scenario is roughly as follows: you see a runaway trolley running down its tracks towards five people who will be killed if the trolley proceeds on its present route. By pulling a switch next to you it is possible to lead the trolley onto another track, where unfortunately a single person is standing and is then condemned to die. Even if a case could be made for or against both pulling the lever or not pulling it, there seems not to be a univocal option to choose, whence the dilemmatic nature of the situation. Nonetheless, most people agree that flipping the lever is permissible and therefore morally acceptable (Lanteri et al., 2008: 789).

Caviedes, & Arciniegas, 2018). We shall not enter the debate, but only here present the fact that the controversy of whether there exists a moral difference between killing and letting die has long concerned philosophers⁵.

In the "Footbridge problem", the majority of participants refused to take the emotionally debatable but utilitarian action of sacrificing one life to save five (Bartels, 2008; Greene et al., 2008). The same dilemma was also used more recently in a study by Costa et al. (2014a) who introduced an additional independent variable in the experiment, namely the language in which the dilemma is presented. They discovered that when randomly assigned to resolve the dilemma in either a foreign or a native language, participants using their foreign tongue were sometimes as much as twice more likely to pit for the utilitarian option of sacrificing one life in order to save five. These data have since been replicated with several pairing of languages in different research settings around the world (e.g. Italian vs. English and German vs. English in Geipel, Hadjichristidis, & Surian, 2015a; English vs. Japanese in Nakamura, 2015 and 2016; English vs. Spanish in Cicolletti, McFarlane & Weissglass, 2015; Spanish or Catalan vs. English in Corey et al., 2017; Korean vs. English in Im Shin & Kim, 2017).

Implications of this experiments and developments in the field can be found in chapter 2 of this study. The rest of this chapter reviews some of the relevant background literature on judgment and decision-making, or how the mind works when people are confronted with a choice.

On some models of moral psychology, decision making is driven by a complex interaction of two factors: an "automatic" process on one side and a

⁵ For comprehensive reviews and discussions, see e.g. Norcross (2002), Steinbock & Norcross (1994).

"rational" process on the other. The former is thought to be prompted by the emotional content of a given dilemma, whereas the latter, by being effortful and deliberated controlled, is driven by the conscious evaluation of the potential outcome of the dilemma itself (Costa et al., 2014b). This has been labelled as "dual-process model". According to this model, what leads to more or less deontological or utilitarian judgments is the variation of the relative weight of intuitive or rational processes in moral judgment. In a nutshell, the model describes moral decision making as a result of the combination of both affective and cognitive processes (Greene et al., 2001, 2004, 2008, 2009). Greene and his colleagues were the first in this field to use neuroimaging techniques to investigate how the body physiologically responds to moral dilemmas. Using functional magnetic resonance imaging (fMRI), they discovered that personal dilemmas engage brain regions which are tightly involved in emotions (e.g. posterior cingulate/precuneus; amygdala), whereas areas involved in deliberative reasoning and working memory (e.g. bilateral parietal lobe; middle frontal gyrus) were activated when stimulated with impersonal dilemmas. According to this evidence, personal dilemmas induce an automatic and "hot" response that leads to emotionally-influenced deontological judgments, which can be overridden by "cold" cognitive control, i.e. utilitarian inclinations (Greene et al., 2001; 2004).

Previous theorists have claimed that morality is a product of only reasoning (e.g. Kohlberg, 1969), whereas others have argued that it is driven entirely by intuitive processes (e.g. Haidt, 2001). According to Greene, intuition is the first reaction when facing a moral stimulus and sometimes, given sufficient time, motivation, and resources, this gets overridden by cognitive processing. In the abovementioned Footbridge scenario, this dual-process model would explain

why participants were less willing to engage in the utilitarian action, i.e. to push the heavy man off the footbridge. The reason seems to be that, in the event where one person has to be hurt in order to save a number of others, people immediately experience a negative emotional reaction to the prospect of deliberately causing harm, i.e. intuitive, automatic processes are activated. If the emotional response is powerful enough, or if there are insufficient resources or time, this will affect the decision-making process by making the deontological judgment prevail.

However, under more generous conditions, cognitive processes could prevail, and so the utilitarian response to the dilemma would emerge: harming actions is acceptable if it increases the well-being of a more significant number of people, i.e. the morality of the action is determined by its mere consequences (Conway & Gawronski, 2013).

The evidence that deontological judgments are prompted by emotional processes whereas utilitarian judgments are driven by cognitive processes is consistent with findings from recent studies in the field of emotion and moral judgment. For example, Greene et al. (2001), discovered an increased activation of emotion centres in the brain when participants considered personal emotional dilemmas involving direct contact with the victim. In another experiment, Petrinovich et al. (1993), first displayed a humorous video clip to participants in order to reduce negative emotion responses by trivialising the harm experienced by victims. The result was that participants made fewer deontological decisions due to an increased emotional distance from the victims. Equal results have been discovered in participants who had suffered damage to emotional brain regions (Ciaramelli et al., 2007; Koenigs et al., 2007; Mendez et al., 2005).

Instead, more deontological decisions were made when participants imagined

harm in vivid detail (Bartels, 2008; Petrinovich & O'Neill, 1996), when physiologically stressed (Starcke, Ludwig, & Brand, 2012), and after listening to a morally uplifting story that evokes positive and calming feelings (Strohming, Lewis, & Meyer, 2011).

On the other hand, Greene et al. (2001), also discovered that when participants considered impersonal moral dilemmas in which victims were distant, cognitive brain regions were more active than emotional ones. The same regions were also stimulated when participants had to deal with more difficult moral dilemmas resulting in utilitarian judgments (Bartels, 2008; Nichols & Mallon, 2006) as well as participants with higher working memory capacity (Moore et al., 2008).

In sum, Greene's dual-process model of moral judgment states that decision making in moral dilemmas is affected by two independent processes: the process underlying deontological inclinations is assumed to be affective, fast, and resource-independent, whereas utilitarian responses are thought to be driven by a slow, cognitive, and effortful process.

3.1. Deontological and utilitarian inclinations: a case study to resolve theoretical ambiguities

The difference between deontology and utilitarianism should now be clear: the former states that the morality of an action depends on the nature of the action *per se*, whereas the latter implies that the morality of an action entirely depends on its consequences. Scientists and theorists have claimed that stronger inclinations of one process imply weaker inclinations of the other kind. In their study *Deontological and Utilitarian Inclinations in Moral Decision Making: A*

Process Dissociation Approach, Conway and Gawronski reject these previous theories by proposing a new method of research. The primary goal of their work was to apply the process dissociation technique to provide a compelling test of the dominant dual-process account of moral judgment.

They adopted Jacoby's (1991) process dissociation technique, which independently quantifies the strength of deontological and utilitarian inclinations within individuals. The nature of this method is content-agnostic and therefore can be applied to any domain where traditional methods conflate the measurement of two psychological processes⁶. The key to process dissociation analyses is to employ both *incongruent* trials, where the underlying process leads to conflicting responses, as well as *congruent* trials, in which the process leads to the same responses. Responses will then be compared in order to get hard data to analyse. Consider the following scenario:

You are driving through a busy city street when all of a sudden a young mother carrying a child trips and falls into the path of your vehicle. You are going too fast to break in time; your only hope is to swerve out of the way. Unfortunately, the only place you can swerve is currently occupied by a little old lady. If you swerve to avoid the young mother and baby, you will severely injure or kill the old lady. Is it appropriate to swerve and hit the old lady in order to avoid the young mother and child?

This example of dilemma (Conway & Garowski, 2013) is incongruent: in fact, the action of swerving and therefore killing the old lady would be

⁶ For reviews, see e.g. Kelley & Jacoby, 2000; Payne & Bishara, 2009; Yonelinas, 2002.

unacceptable according to the principle of deontology, but acceptable according to the principle of utilitarianism. However, what if instead of the old lady, the swerving space was occupied by a group of children on their way to elementary school? Such a scenario is congruent, in the sense that by swerving, despite the mother and her child being safe, several of the children would get seriously injured or killed, therefore causing the action to be unacceptable by either deontological and utilitarian standards. By comparing responses, the relative influence of each process can be mathematically quantified.

In their research, Conway and Garowski used the process dissociation technique to delineate the independent contributions of deontological and utilitarian inclinations to responses in moral dilemmas. The research involved three different experiments

Study one

In the first study, Conway and Gawronski investigated whether the two parameter - i.e. utilitarian and deontological inclinations - were meaningfully related to individual differences in emotional versus cognitive processing. To do so, participants first had to read and respond to ten congruent and ten incongruent dilemmas, and then they had to complete self-report measures of empathic-apprehension, perspective-taking, faith in intuition, religiosity, and moral identity. Participants' responses to the moral dilemmas were then analysed using PD, and the results were then compared to those of the traditional data analytic approach. In this experiment, scientists hypothesised that deontological inclinations would be positively related to individual difference measures of empathic-concern, perspective-taking, and faith in intuition.

Results from this first study confirmed the predictions derived from Greene's (2007) dual process theory of moral judgment. PD analyses also provided a more detailed picture of the parameters involved in moral decision processes: both empathy and perspective taking emerged as uniquely related to deontological inclinations, whereas the need for cognition was uniquely related to utilitarian inclinations. These findings are consistent with dual-process theories of moral judgment, suggesting that deontological inclinations are related to emotional responses to harmful actions, whereas utilitarian inclinations are related to cognitive deliberation about costs and benefits.

Although the consistency with Greene's model, these results suffer from the ambiguities of correlation designs; moreover, some of the obtained results were admittedly weak, such as the slight correlation between utilitarian inclinations and need for cognition. These are the reasons for studies two and three to considerate the two parameters independently of one another.

Study two

The second study involved the experimental manipulation of the amount of cognitive resources that were available to participants as they responded to moral dilemmas, to test the deliberate roots of utilitarian inclinations. Procedures and materials were identical to Study one, with the difference that individual difference measures were here discarded. Moreover, participants exposed to the cognitive load condition were asked to perform a secondary task while reading and responding to the moral dilemmas.

The PD analyses in this experiment showed that cognitive load selectively reduced utilitarian inclinations while leaving deontological judgments unaffected.

Study three

The third and last study involved the manipulation of the emotional impact of each dilemma in order to experimentally test the emotional roots of deontological inclinations. Basing the work on findings from study one, Conway and Gawronski investigated whether an external manipulation of empathic concern selectively increases the deontological parameter while leaving the utilitarian parameter unaffected.

Participants in the empathic concern condition were shown with images of the potential victim of the harmful action; this enhanced the emotional connection to the dilemma caused a stronger preference for deontological over utilitarian judgments, therefore confirming that deontological inclinations are influenced and connected with emotions.

General discussion and final results

By applying Jacoby's PD technique, the studies managed to provide a compelling test to Greene's (2007) theory of dual-process account of moral judgment, thus resolving many theoretical ambiguities implied by previous research. In fact, the current work showed that the traditional bipolar dichotomy was related to theoretically relevant individual difference variables (Study 1); the study also detected significant changes in moral judgments as a result of cognitive load (Study 2), and revealed meaningful differences in moral judgments as a result of enhanced empathic concern (Study 3). Conway and Gawronski's analysis revealed a clear pattern of differences between utilitarian and deontological inclinations in line with the predictions derived from Greene's (2007) dual-process account of moral judgment, whilst supporting both the utility Jacoby's (1991)

process-dissociation approach for analysing moral dilemma data and the proposed independence of the two moral inclinations.

In conclusion, Conway and Gawronski's work represents a substantial empirical, theoretical, and methodological advance over previous traditional research that confounded the operation of deontological and utilitarian inclinations by treating them as inversely related other than distinct and functionally independent processes.

4. MORAL COMPASS AND FOREIGN LANGUAGE: CASE STUDIES

Would you kill one person to save five? Could your answer depend on whether you are responding in your native or in a foreign language? A growing body of research suggests that it does: Costa et al. (2014a) explore to what extent decision making processes are affected by the language in which a problem is presented. They found that while only 13% of participants agreed to sacrificing one person to save five when asked the question in their native language, this number rose to 36% when using a foreign tongue. These findings are consistent with several studies showing that using a non-native tongue increases the willingness to sacrifice one life for the greater good (e.g. Cicolletti, McFarlane, & Weissglass, 2015; Costa et al., 2014b; Geipel, Hadjichristidis, & Surian, 2015a).

When it comes to moral judgment, some models of moral psychology describe the process as driven by a complex interaction of at least two forces: an "automatic" process on the one side and a "rational" process on the other. The former is thought to be prompted by the emotional content of a given dilemma, whereas the latter, because it presumably requires more cognitive effort and more deliberate controlled, it appears to be driven by the conscious evaluation of the potential outcome of the dilemma itself (Costa et al., 2014b). In this dual process account, intuitive processes generally support deontological judgments (i.e. judgments that favour the essential rights of a person), whereas rational controlled processes seem to lead to utilitarian judgments (i.e. judgments supporting the greater good, regardless of whether or not they violate an individual's rights). There are good reasons to expect that using a non-native language would reduce

utilitarian resolutions of moral dilemmas i.e. the added cognitive load of using a non-native tongue could reduce the use of controlled processes, leading to a reduction in utilitarian choices (Costa et al., 2014b).

The goal of the following research is to experimentally investigate whether the use of a native versus a foreign language would prompt different responses in incongruent moral dilemmas. If Costa and colleagues' reasoning is correct, the prediction is that moral judgments in a non-native language should be less affected by the emotional impact evoked by the dilemma. The prediction is therefore as follows: when faced with moral dilemmas in a foreign language, utilitarian choices should be more common than in a native language. We tested this prediction in two experiments using Conway & Gawronski's (2013) method.

4.1. Study One

The aim of our study is to investigate whether the use of a foreign language could affect performance in moral judgment. To do so, we designed a questionnaire inspired upon the model proposed by Conway & Gawronski (2013) for their studies on the FLE in moral decision making.

4.1.1. Method

The experiment was conducted via an online two-version questionnaire which was posted on University students groups on social media in an attempt to reach a greater visibility. Participants voluntarily partook the questionnaire, without getting any economic incentive.

I first describe the common aspects of the two questionnaires. Both versions consisted of 6 basic moral dilemmas. For each dilemma two versions

were created: one in Italian and one in English. Following experimental part of the study, participants were asked to provide demographic information and a language self-assessment task. This part was presented after experimental procedure so to avoid possible stereotype threats: therefore, we gathered more information and responses than we could use in the data analysis.

Participants rated their foreign language proficiency (i.e. English) on a 7-point scale for each of the four abilities, i.e. speaking, writing, listening, and reading. Summary statistics and background information are given in Table 1 .

Study	Native	Foreign	Female	Age	AOA	Months Abroad
1	Italian	English	81%	22	7	12
2	Italian	English	100%	22	7	6

Table 1: Demographic information retrieved from demographic questionnaire. "AOA" refers to the age of foreign language acquisition; "Months Abroad" is the mean number of months spent in a country where the target foreign language is dominant.

Lastly, along with the self-assessment task, participants translated one short story from Italian to English. This task aimed at a double purpose: either to ensure attention and comprehension of the target stimulus material and to prove the foreign language proficiency.

Past research has shown that low levels of foreign-language proficiency were associated with larger reductions in utilitarian responding across language conditions (Plass, Chun, Mayer, & Leutner, 2003). We aimed to avoid this possibility, and therefore, for the purpose of our study, high English proficiency – equivalent to a B2 or C1 level on the CEFR (2001) - was the main inclusion

criterion to participate in the study. By translating a medium level difficulty story, real proficiency emerged, differentiating those who had acquired the language at a deep cognitive level from those who had a lower proficiency. Participants who failed to translate any part or could not find any coping mechanism to translation - such as periphrasis or synonyms - were excluded from the final analysis. A summary of all the exclusions can be found in Table 2.

Both versions of the questionnaire were mostly carried out in Italian, except for the foreign language version of the dilemmas, in which case directions, dilemmas and questions were presented in English.

Study	N	Foreign-born	Incomplete	Low proficiency	IDNU
1	120	7	2	86	4
2	76	4	3	45	3

Table 2: List of exclusions. “N” refers to the total number of participants who voluntarily partook to the research. “Foreign-born” indicates those whose native language was different from Italian. “Low proficiency” indicates questionnaire we gathered but could not use for a lack of participant’s proficiency in English. “IDNU” is the number of “I do not understand” responses.

Participants

For the purpose of our study, only participants who met the following inclusion criteria were taken into consideration for our investigation: 1) being a native speaker of the native target language, i.e. Italian 2) being a high proficiency foreign speaker of the target foreign language, i.e. English 3) did not grow up in an English-speaking environment, either academic or familiar.

All participants were native Italian speakers with high proficiency in English, with most acquiring the foreign language in the classroom setting; none of the participants grew up speaking the L2 in the family environment. All were bilinguals who speak Italian as their native language and started learning English in Italy after the native language was fully acquired. Participants were all university students, enrolled either at a bachelor or at a master level degree, with age ranging from 19 to 29.

The experiment was conducted online, and an overall of 196 participants voluntarily contributed; of these, only 44 were eligible for the analysis, but two were excluded for the presence in their test of some “I do not understand” responses. Of the remaining 42 subjects, half served in the "target test", whereas the other half served in the "buffer test".

Materials and design

The aim of the study was to investigate the role of a foreign language – in this case, English – in the moral decision making. For this purpose, a fully within-subject design was chosen for the questionnaires with all participants seeing both frames in both languages. The reason underlying this choice was to aim to a reduction in error variance associated with individual differences. In this kind of experiment, the same group of subjects serves in more than one condition, i.e. each participant was presented with the same dilemmas in both English and Italian.

The strength of this design is that conditions are always exactly equivalent with respect to individual difference variables since participants are the same in the different conditions; in a nutshell, within-subject design can reduce the

possibility that differences between subjects may be explained by individual subject's differences. However, it is possible that participation in one condition may affect how subjects respond to the other condition. This is known as *the carryover effect* (Charness et al., 2012; Greenwald, 1976; Singleton and Straits, 2005), and it is the reason why this experiment design should be used with caution. Carry-over may lead to a *fatigue effect* when one treatment negatively affects performance on a later treatment. This possibility will be taken into consideration when discussing the results.

As far as elicitation format is concerned, participants were asked to indicate whether the described action would be "appropriate" or "inappropriate" according to their personal opinion (see Conway & Gawronski, 2013: 221). Moral dilemmas and questions about the appropriateness of the actions were presented subsequently on the same questionnaire sheet. Participants were asked whether a given action was appropriate by selecting "Yes", "No", or "I do not understand". We excluded trials where participants selected the last option and performed analyses on the remaining portion of "Yes" and "No" responses.

Moral dilemmas

I decided to model our questionnaire upon Conway and Gawronski's model (2013) because of its important empirical and methodological insights into the field of moral decision making and foreign language. For a matter of convenience and because of the intrinsic design of the within-subject method, we decided to submit participants to only *incongruent* dilemmas, in which deontological and utilitarian principles conflict. This was made to avoid presenting participants with 4 different versions of the same dilemma (i.e.

incongruent version in both English and Italian; congruent version in both English and Italian). This factor might have easily alienate the voluntary participants therefore leading to certain carryover effects.

The set of moral dilemmas we used was the original proposed by Conway and Gawronski in which incongruent dilemmas were designed to pit deontological inclinations against utilitarian inclinations by presenting the outcomes of harmful actions as more beneficial than the harm caused by the action itself.

Conrad & Gawronski's original experiment consisted of 10 dilemmas, 6 of which were chosen for our study and translated into Italian. The translation was carried out following the *sense for sense* method (as opposed to the *word for word* technique). In the Italian translations, subordination clauses were preferred to the coordination clauses used in the English originals and the repetition of words and subjects were avoided when possible; the number of words used in the translations differentiate from the originals, ranging from two to seven. Original dilemmas and Italian translations can be found in "Appendix A".

4.1.2. Results

This study was designed to investigate the relationship between native and foreign language in moral decision making by having participants responding to moral incongruent dilemmas presented subsequently in English and Italian. Given the design of the questionnaire, we expect to find a slight - or null - difference in responses to same dilemmas in different languages.

A total of 121 participants took part to our first experiment, with only 22 of them being eligible for our research; after a first selection, one further set of responses was eliminated since it contained some "I do not understand" responses.

Qualified participants' proficiency ratings are listed in Table 3. Data analysis was therefore conducted on a total of 21 questionnaires.

Self-rated proficiency: target test	
Speaking	5.5
Reading	6.1
Listening	5.8
Writing	5.4

Table 3: Participants' self-proficiency in the foreign language on a 7-point scale. (1 = least fluent; 7 = most fluent)

I used a selection of Conway and Gawronski's (2013) original incongruent dilemmas, in which the underlying process leads to divergent responses (Conway and Gawronski, 2013:217). This specific design allows us to discriminate between deontological and utilitarian inclinations and to mathematically quantify the two tendencies. In order to have hard data, we calculated for each participants the quantity of "Yes" responses (indicating utilitarian inclinations) as opposed to the quantity of "No" responses (on the contrary, representing deontological inclinations)⁷.

Across all populations more participants selected the utilitarian choice, as expected; however, unexpectedly, utilitarian inclinations decreased when using the foreign language than the native language. The difference in responses declined from 57,1% when dilemmas were presented in Italian, to 54,7% when

⁷ We use the term deontological and utilitarian not as descriptions of participants' meta-ethical beliefs; the terms refer to responses that are *characteristically* deontological and utilitarian (Greene et al., 2008; Kahane, Everett, Earp, Farias, & Savulescu, 2015).

dilemmas were presented in English, with a difference in responses of 2.4%, as illustrated in Figure 1.

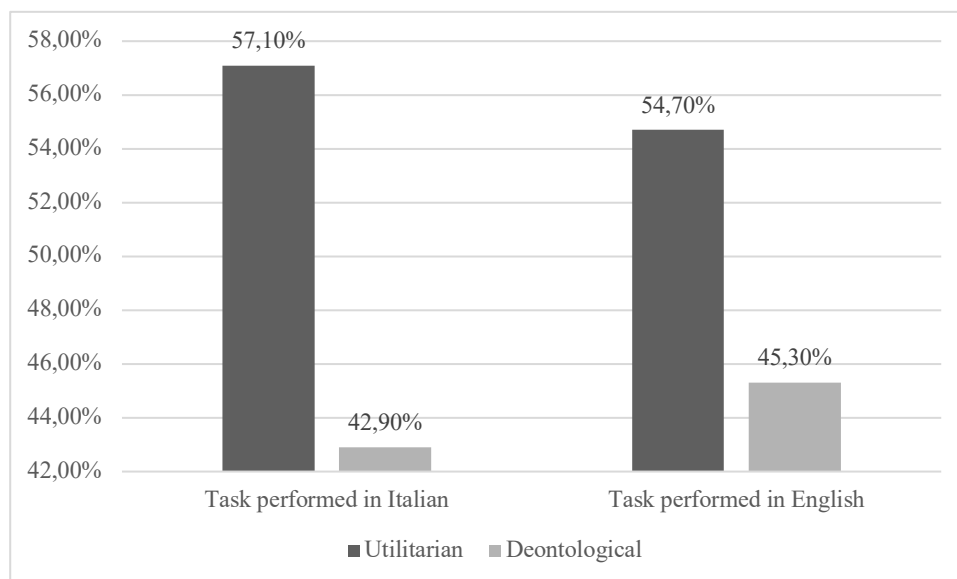


Figure 1: Study one results, positive (utilitarian) and negative (deontological) responses.

It is interesting to note that almost every dilemma elicited divergent responses when presented in the foreign language with the only exception of “hard times”. In particular, 9.5% of participants have shown different judgments in dilemmas such as such as "time machine", "abortion", "crying baby", and "torture"; the same change was observed for remaining dilemma “animal research”, to which only 4.7% of participants gave a different response, corresponding to a single individual.

4.1.3. Discussion

Although the propensity towards utilitarian inclinations is dominant in both conditions, these findings appear in contrast with Costa's et al. (2014b) investigation on foreign language and moral judgment. In fact, their investigation discovered that chances that people would be more willing to opt for the

utilitarian option were almost triple when using their foreign language than when presented with the possibility in their native tongue.

Moreover, we discovered a strong preference in utilitarian choices when given the scenarios in Italian, i.e. the native language, and an almost as strong preference in deontological tendencies when given the scenarios in the foreign language. It would appear from this investigation that the foreign language factor could not be as dominant in decision making as we firstly thought.

An intrinsic flaw of the design of the experiment could be the cause to these findings; in fact, the carryover effect could have played a major role in influencing participants choices, therefore biasing their judgment.

This is why we run a second experiment.

4.2. Study Two

I designed the first questionnaire so that participants could give personal feedback about the experiment. It was brought to our attention that several participants were able to recognise the content of some dilemmas when these were presented the second time in a different language, and therefore answered to the problems with the same original response, often without reading the whole paragraph. Study two tries to overcome this issue by introducing a “buffer” set of new moral dilemmas.

4.2.1. Method

We introduced an additional set of dilemmas in order to avoid any possible carryover effect, by diverting participants’ attention between the two original sets

of dilemmas. Each problem of the additional set was presented only once in either English or Italian. Buffer dilemmas are listed in Appendix B.

In study one, the 12 dilemmas were presented randomly but subsequently one after the other, whereas in study two the first set of 6 moral dilemmas was divided from the second by a series of 5 more dilemmas defined as "buffer set". Buffer set was comprehensive of the 4 remaining problems from Conway and Gawronski's original experiment (2013), and Foot's (1967) original version of the trolley problem. Figure 2 outlines the sequence of dilemmas.

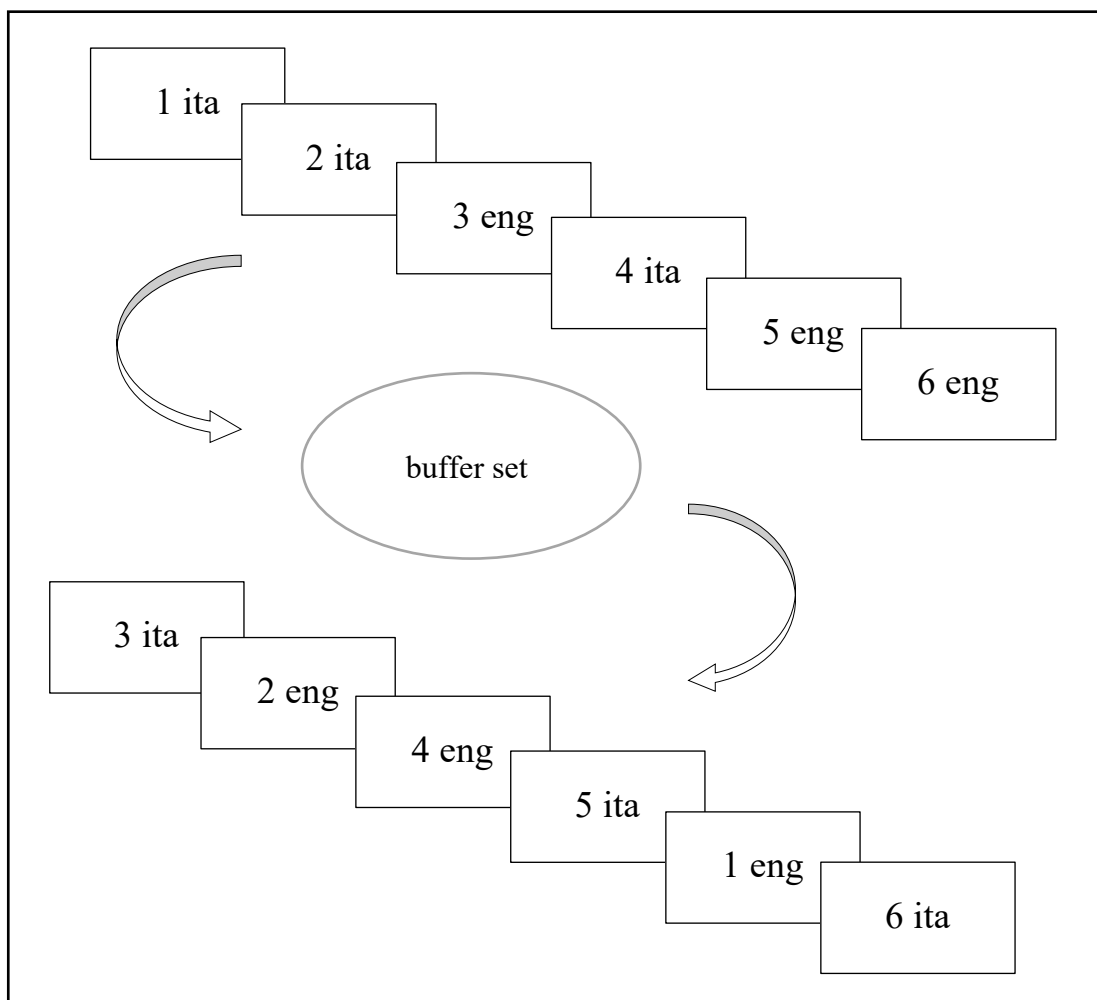


Figure 2: dilemma sequence. Same numbers indicate same dilemma; “it” and “eng” indicate the language in which each dilemma was presented.

Study two was submitted to 75 participants, but only 22 satisfied the criteria (see paragraph 4.1.1. of this chapter) of our research. Eligible participants' proficiency ratings can be found in Table 4. After the first selection, one further set of dilemmas was eliminated due to the presence of some "I do not understand" responses. Data analysis was conducted on a total of 21 questionnaires.

Self-rated proficiency: target test	
Speaking	5.2
Reading	5.9
Listening	5.3
Writing	5.2

Table 4: Participants' self-proficiency in the foreign language on a 7-point scale. (1 = least fluent; 7 = most fluent)

4.2.2. Results

Participants involved in study two gave results against our expectations. Firstly, we discovered a slight discrepancy in utilitarian responses given in Italian versus those given in English, with an increase of 1.6% from the former to the latter. An overall of 49.90% selected the utilitarian option when given the chance to in Italian, whereas the number rose to 51,50% when the option was presented in English. Inversely, deontological inclinations rose from 48.50% in the English context to 50.10% in the Italian scenarios. Figure 3 outlines study two results.

What is interesting is that, when comparing overall responses from study one and from study two, a substantial decrease in utilitarian responses emerges in the study 2. With regard to dilemmas presented in Italian, utilitarian responses

decreased of 7.2% in the buffer test compared to the target test and a similar – but not as significant - difference can be seen in the English versions of dilemmas, where the decrease was of 3.2%. Proportionally, overall deontological responses increased of 7.2% in the buffer test when dilemmas were presented in Italian, and of 3.2% when these were presented in English.

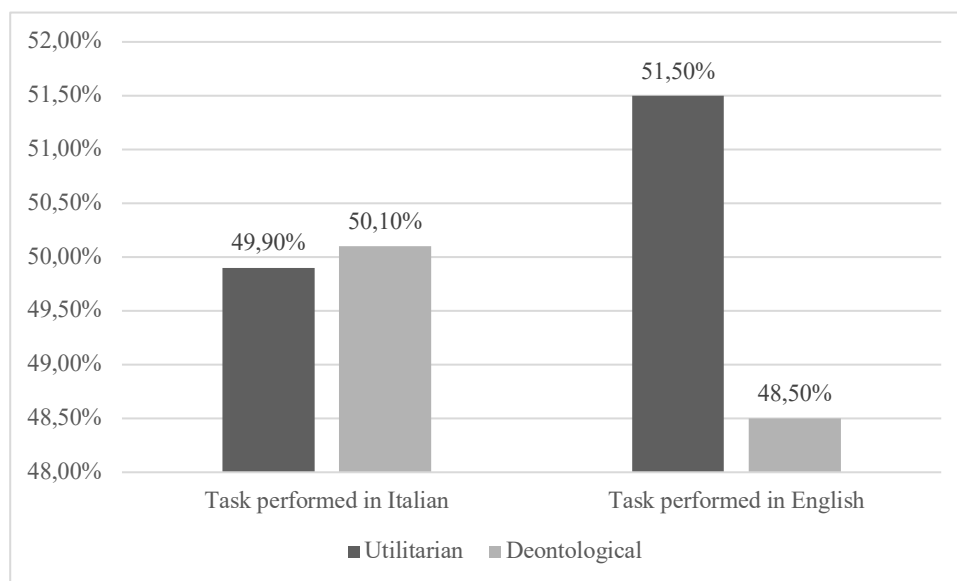


Figure 3: Buffer test results, utilitarian and deontological responses.

It is also interesting to note that, among dilemmas, only two elicited different responses when they were presented in Italian or in English and that only two participants changed their responses to the two versions. These dilemmas are “time machine” and “torture”. Every other dilemma, when presented in the foreign language, hasn’t achieved to shift participants’ moral compass.

4.2.3. Discussion

What we expected to find from our second study was a larger proportion of utilitarian responses in moral dilemmas presented in the foreign language. Surprisingly, what we discovered was against our expectations. The proportion of utilitarian responses given in native-tongue dilemmas differentiated from those

given in foreign-language dilemmas of only 1.2%. This number represents a limited discrepancy and therefore suggests that the introduction of the buffer set of dilemmas did not entirely achieve our initial goal; nonetheless, this small discrepancy is still evidence that the foreign language effect can occur under certain conditions. Study two was therefore able to detect a raise in utilitarian responses given in the foreign language, as we initially predicted.

Furthermore, discrepancy in overall responses was higher in the target test than in the buffer test. In study two, only 9.5% of the participants showed different judgments when performing the task in English, whereas the number rose to 19% in study one.

With regard to those dilemmas which elicited different responses in study two (i.e. “time machine” and “torture”), it is interesting to note that divergent responses to the same problem doubled in study one. One possible reason for this phenomenon is related to participants’ proficiency. In fact, according to Hayakawa (2017a:1359), lower levels of non-native language proficiency appear to be associated with larger reductions in utilitarian responding and, as shown by table 4, study two participants’ proficiency was lower than participants in study one.

Specifically, even if study two still shows a slight increase in utilitarian responses in foreign language dilemmas, as we expected, this amount could not be considered significant. For this reason, the discrepancy appears to be too limited and therefore in contrast with a number of previous studies on the moral foreign language effect (Cipolletti, 2015; Costa et al., 2014a).

4.3. General discussion and further research

Previous research has shown that people are more willing to “sacrifice one person for the greater good” when presented with this moral dilemma in their foreign language than in their native language (Hayakawa, 2017a; 2017b). These findings appear to be correlated with the emotional load in moral dilemmas (Greene et al. 2001, 2004; Hayakawa, 2017b; Lanteri, 2008). Because of the nature of our questionnaire, this could not be tested directly. To have a better understanding of the role that emotions play in moral decision making, a more specific questionnaire should be designed with deep focus on this regard.

In our study, we aimed to discover *whether* the moral FLE would happen in Italian-English bilingual speakers when presented with moral dilemmas, and not to investigate *how* or *why* this happened. To do so, we designed a two-version questionnaire that was submitted to voluntary participants with high proficiency in the foreign language (English). Findings have shown that indeed, the FLE happens, but only under certain conditions.

Findings from study one has highlighted a decrease in utilitarian concerns when dilemmas were presented in the foreign language, but due to the introduction of a buffer set of additional dilemmas in study two, we could observe a meager but existent foreign language effect. In fact, in study two, more than half the participants have shown utilitarian inclinations using the foreign language.

Nonetheless, our findings are not consistent with a number of previous studies that show that chances that people would be more willing to opt for the utilitarian option were almost triple when using their non-native language than when presented with the possibility in their native language (Costa et al., 2014b).

Future research could add more variables to the study - such as cognitive load and empathy - in order to better investigate the phenomenon and to achieve a wider understanding of the circumstances under which the moral FLE occurs.

CONCLUSIONS

The focus of the present study was to investigate the effect of using a foreign language (English) vs one's native language (Italian) in experimental tests requiring moral decision making. We designed a within subjects two-version questionnaire shaped on Conway and Gawronski's (2013) model, from which we created six incongruent moral dilemmas.

The incongruent design allows us to discriminate between deontological and utilitarian inclinations, i.e. morality as the intrinsic nature of the action vs morality determined by consequences of the action itself.

Study one revealed an overall preference towards utilitarian inclinations with a decrease in utilitarian responses to foreign language dilemmas. Past research in the field has shown that people are more willing to opt for the utilitarian choice when presented with incongruent dilemmas, therefore our findings are in line with the literature in the field.

In study two we introduced an additional set of moral dilemmas, in order to avoid possible carryover effects. Study two revealed the usefulness of the buffer set to create the right conditions for the foreign language effect to occur.

Evidence from study two is consistent with most existing literature on the foreign language effect (Geipel, Hadjichristidis, & Surian, 2015a; Nakamura, 2015 and 2016; Ciolletti, McFarlane & Weissglass, 2015; Costa et al 2014a and 2014b; Corey et al., 2017; Im Shin & Kim, 2017), confirming that using a foreign language might affect how we perceive and act in the world.

Since we live in a world where foreign-born professionals routinely take critical decisions every day and representatives from every country in the world

negotiate deals about issues ranging from climate change to human rights (Hayakawa, 2017b:1), our findings are evidence that a better understanding of the phenomenon could have far-reaching implications in real-world, everyday life, as in the domain of international policy.

REFERENCES

- Ahearn, L. M. (2011). *Living Language: An Introduction to Linguistic Anthropology*. John Wiley & Sons.
- Ayçiçeğ, A., Harris, C. (2004). Bilinguals' recall and recognition of emotion words. *Cognition and Emotion* 18, 977–87.
- Ayçiçeği-Dinn, Caldwell-Harris, (2009). Emotion-memory effects in bilingual speakers: a levels-of-processing approach. *Language and Cognition*, 12(3), 291-303.
- Bampton, R., Maclagan, P. (2009). Does a 'care orientation' explain gender differences in ethical decision making? A critical analysis and fresh findings. *Business Ethics: A European Review*, 18(2), 179–191.
- Bartels, D. M. (2008). Principled moral sentiment and the flexibility of moral judgment and decision making. *Cognition*, 108, 381–417.
- Bond, M. H., Lai, T. M. (1986). Embarrassment and code-switching into a second language. *The Journal of Social Psychology*, 126(2), 179-186.
- Boroditsky, L. (2001). Does language shape thought? Mandarin and English speakers' conceptions of time. *Cognitive Psychology*, 43(1), 1-22.
- Bowerman, M. (1996). The origin of children's spatial semantic categories: cognitive versus linguistic determinants. In Gumperz, J., Levinson, S. (Eds.), *Studies in the social and cultural foundations of language*, 17, 145-176. New York, US: Cambridge University Press.
- Caldwell-Harris, C. L. (2015). Emotionality differences between a native and foreign language: implications for everyday life. *Current Directions in Psychological Science*, 24(3), 214- 219.
- Caldwell-Harris, C. L. (2014). Emotionality differences between a native and a foreign language: theoretical implications. *Frontiers in Psychology, Language Sciences*. doi: 10.3389/fpsyg.2014.01055
- Carney, D. R., Mason, M. F. (2010). Decision making and testosterone: when the ends justify the means. *Journal of Experimental Social Psychology*, 46, 668-671.
- Casasanto, D. (2008). Who's afraid of the big bad Whorf? Crosslinguistic differences in temporal language and thought. *Language Learning*, 58(s1), 63-79.

- Ciaramelli, E., Muccioli, M., Làdavas, E., di Pellegrino, G. (2007). Selective deficit in personal moral judgment following damage to ventromedial prefrontal cortex. *Social Cognitive and Affective Neuroscience*, 2 (2), 84,92.
- Cipolletti, H., McFarlane, S., Weissglass, C. (2015). The moral foreign-language effect. *Philosophical Psychology*, 29(1), 23-40.
- Charness, G., Gneezy, U., Kuhn, M. (2012). Experimental methods: between-subject and within-subject design. *Journal of Economic Behavior & Organization*, 81(1), 1-8.
- Conway, P., & Gawronski, B. (2013). Deontological and utilitarian inclinations in moral decision making: A process dissociation approach. *Journal of Personality and Social Psychology*, 104(2), 216–235.
- Corey, J. D., Hayakawa, S., Foucart, A., Aparici, M., Botella, J., Costa, A., & Keysar, B. (2017). Our moral choices are foreign to us. *Journal of experimental psychology: Learning, memory, and cognition*, 43(7), 1109-1128.
- Costa, A., Foucart, A., Arnon, I., Aparici, M., & Apesteguia, J. (2014a). “Piensa” twice: on the foreign language effect in decision making. *Cognition*, 130(2), 236-254.
- Costa, A., Foucart, A., Hayakawa, S., Aparici, M., Apesteguia, J., Heafner, J., & Keysar, B. (2014b). Your morals depend on language. *PloS one*, 9(4), e94842.
- Council of Europe (2001). *Common European Framework of Reference for language learning and teaching*. Cambridge, UK: Cambridge University Press.
- Cushman, F. (2013). Action, outcome, and value a dual-system framework for morality. *Personality and Social Psychology Review*, 17(3), 273–292.
- Cushman, F., Young, L., Hauser, M. (2006). The role of conscious reasoning and intuitions in moral judgment: testing three principles of harm. *Psychological Science*, 17, 1082–1089.
- Deigh, J. (2012). *An introduction to Ethics. Cambridge introductions to philosophy*. Cambridge University Press.
- Deshpande, S. P. (2009). A study of ethical decision making by physicians and nurses in hospitals. *Journal of Business Ethics*, 90 (3), 387–397.
- Dewaele, J. M. (2004). The emotional force of swearwords and taboo words in the speech of multilinguals. *Journal of multilingual and multicultural development*, 25(2-3), 204-222.

- Dewaele, J. M., Nakano, S. (2012). Multilinguals' perceptions of feeling different when switching languages. *Journal of Multilingual and Multicultural Development*, <http://dx.doi.org/10.1080/01434632.2012.712133>
- Dolscheid, S., Shayan, S., Majid, A., & Casasanto, D. (2013). The thickness of musical pitch: Psychophysical evidence for linguistic relativity. *Psychological Science*, 24(5), 613-621.
- Duke, A. A., & Bègue, L. (2014). The drunk utilitarian: blood alcohol concentration predicts utilitarian responses in moral dilemmas. *Cognition*, 134, 121–127.
- Eilola, T. M., Havelka, J., Sharma, D. (2007). Emotional activation in the first and second language. *Cognition & Emotion*, 21, 1064-1076.
- Eweje, G., & Brunton, M. (2010). Ethical perceptions of business students in a New Zealand university: do gender, age and work experience matter? *Business Ethics: A European Review*, 19(1), 95–111.
- Fausey, C.M., Boroditsky, L. (2011). Who dunnit? Cross-linguistic differences in eye witness memory. *Psychon Bull Rev*, 18, 150–157.
- Fernando, M., & Chowdhury, R. M. M. I. (2010). The relationship between spiritual well-being and ethical orientations in decision making: an empirical study with business executives in Australia. *Journal of Business Ethics*, 95(2), 211–225.
- Foot, P. (1978). The Problem of Abortion and the Doctrine of the Double Effect in *Virtues and Vices*. Oxford: Basil Blackwell. Originally appeared in the *Oxford Review* (1967), Number 5.
- Fujimura, T.H., (1975). *Dryden's poetics: the expressive values in poetry*. University of Illinois Press. *The Journal of English and Germanic Philology*, Vol. 74, 2, p.196.
- Gao, S., Zika, O., Rogers, R. D., & Thierry, G. (2015). Second language feedback abolishes the “hot hand” effect during even-probability gambling. *Journal of Neuroscience*, 35(15), 5983-5989.
- Geipel, J., Hadjichristidis, C., & Surian, L. (2016). Foreign language affects the contribution of intentions and outcomes to moral judgment. *Cognition*, 154, 34-39.
- Geipel, J., Hadjichristidis, C., & Surian, L. (2015a). The foreign language effect on moral judgment: the role of emotions and norms. *PloS one*, 10(7), e0131529.
- Geipel, J., Hadjichristidis, C., & Surian, L. (2015b). How foreign language shapes moral judgment. *Journal of Experimental Social Psychology*, 59, 8-17.

- Geipel, J., Hadjichristidis, C., Surian, L. (2014). Moral judgments: foreign language promotes utilitarian judgments. Poster presented at the 26th Convention of the Association for Psychological Science, San Francisco, CA.
- Gilovich, T., Vallone, R., Tversky, A., (1985). The hot hand in basketball: on the misperception of random sequences. *Cognitive psychology*, 17, 295-314.
- Greene, J. D., Cushman, F. A., Stewart, L. E., Lowenberg, K., Nystrom, L. E., & Cohen, J. D. (2009). Pushing moral buttons: The interaction between personal force and intention in moral judgment. *Cognition*, 111, 364–371.
- Greene, J. D., Morelli, S. A., Lowenberg, K., Nystrom, L. E., & Cohen, J. D. (2008). Cognitive load selectively interferes with utilitarian moral judgment. *Cognition*, 107(3), 1144–1154.
- Greene, J. D. (2007). Why are VMPFC patients more utilitarian? A dual-process theory of moral judgment explains. *Trends in Cognitive Sciences*, 11, 322–323.
- Greene, J. D., Nystrom, L., Engell, A., Darley, J., Cohen, J. (2004). The neural bases of cognitive conflict and control in moral judgement. *Neuron* 44, 389–400.
- Greene, J., Sommerville, R. B., Nystrom, L. E., Darley, J. M., & Cohen, J. D. (2001). An fMRI investigation of emotional engagement in moral judgment. *Science* 293, 2105–2108.
- Greenwald, A. G. (1976). Within-subject design: to use or not to use? *Psychological Bulletin*, 83(2), 314-320.
- Grosjean, F. (2010). *Bilingual. Life and reality*. Cambridge, Massachusetts: Harvard University Press.
- Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review*, 108, 814–834.
- Hare, R. M. (1976). *Ethical theory and utilitarianism*. In Lewis, D., *Contemporary British Philosophy IV*. London: Allen & Unwin.
- Harris, C. L., Ayçiçeğ A., Gleason, J. B. (2003). Taboo words and reprimands elicit greater autonomic reactivity in a first language than in a second language. *Applied Psycholinguistics*, 24(04), 561-579.
- Harris, C. L., Gleason, J. B., Ayçiçeğ, A. (2006). When is a first language more emotional? Psychophysiological evidence from bilingual speakers. In Pavlenko, A. (Ed.), *Bilingual minds: emotional experience, expression, and representation*. Clevedon, United Kingdom: Multilingual Matters.

- Harsanyi, J. (1977). Morality and the theory of rational behavior. *Social research: Rationality, Choice, and Morality*. The New School, 44(4), 623–656.
- Hayakawa, S., Tannenbaum, D., Costa, A., Corey, J. D., Keysar, B. (2017a). Thinking more or feeling less? Explaining the foreign-language effect on moral judgment. *Psychological Science*, 28(10), 1387-1397.
- Hayakawa, S. (2017b). Why using a foreign language influences our choices. <http://hdl.handle.net/11417/681>
- Hayibor, S., Wasieleski, D. M. (2009). Effects of the use of availability heuristic on ethical decision-making in organizations. *Journal of Business Ethics*, 84(1), 151–165.
- Heynick, F. (1983). From Einstein to Whorf: Space, time, matter, and reference frames in physical and linguistic relativity. *Semiotica*. 45: 35–64.
- Ho, J. A. (2010). Ethical perception: Are differences between ethnic groups situation dependent? *Business Ethics: A European Review*, 19(2), 154–182.
- Hofman, W., Baumert, A. (2010). Immediate affect as a basis for intuitive moral judgment: an adaptation of the affect misattribution procedure. *Cognition and Emotion*, 24(3), 522-535.
- Holt, C. A., & Laury, S. K. (2002). Risk aversion and incentive effects. *The American Economic Review*, 92(5), 1644-1655.
- Hursthouse, R., Pettingrove, G. (2018). 'Virtue ethics'. *The Stanford Encyclopedia of Philosophy*. <https://plato.stanford.edu/archives/win2018/entries/ethics-virtue>
- Im Shin, H., & Kim, J. (2017). Foreign Language Effect and Psychological Distance. *Journal of Psycholinguistic Research*, 1-14.
- Jacoby, L. L. (1991). A process dissociation framework: Separating automatic from intentional uses of memory. *Journal of Memory and Language*, 30(5), 513–541.
- Kahane, G., Everett, J. A. C., Earp, B. D., Farias, M., Savulescu, J. (2015). 'Utilitarian' judgments in sacrificial moral dilemmas do not reflect impartial concern for the greater good. *Cognition*, 134(3), 193–209.
- Kahneman, D., Tversky, A. (1979). Prospect theory: an analysis of decision under risk. *Econometrica*, 47, 263–291. DOI:10.2307/1914185
- Kelley, C. M., Jacoby, L. L. (2000). Recollection and familiarity: process-dissociation. In Tulving, E., Craik, F (Eds.), *The Oxford Handbook of Memory*. New York: Oxford University Press.

- Keysar, B., Hayakawa, S. L., & An, S. G. (2012). The foreign-language effect thinking in a foreign tongue reduces decision biases. *Psychological science*, 23(6), 661-668.
- Koenigs, M., Young, L., Adolphs, R., Tranel, D., Cushman, F., Hauser, M., & Damasio, A. (2007). Damage to the prefrontal cortex increases utilitarian moral judgements. *Nature*, 446(7138), 908-911.
- Kohlberg, L. (1969). Stage and sequence: the cognitive development approach to socialization. In *American Journal of Educational Research* (2015), 3(9), 1163-1167.
- Kühberger, A. (1998). The influence of framing on risky decisions: a meta-analysis. *Organizational Behavior and Human Decision Processes*, 75, 23–55. DOI:10.1006/obhd.1998.2781
- Lanteri, A., Chelini, C., Rizzello, S. (2008). An experimental investigation of emotions and reasoning in the trolley problem. *Journal of Business Ethics*, 83, 789-804.
- Levinson, S. C., (1996). Language and space. *Annual Review of Anthropology*, 25, 353-382.
- Loewenstein, G. F., Weber, E. U., Hsee, C. K., & Welch, E. S. (2001). Risk as feelings. *Psychological Bulletin*, 127, 267–286.
- Lucy, J. A. (2004). Language, culture, and mind in comparative perspective. *Language, culture and mind*, 1-22.
- Mandelbaum, G. (Ed.) (1949). *Selected writings of Edward Sapir in Language, Culture and Personality*. University of California Press.
- Markman, E. M., Hutchinson, J. E. (1984). Children's sensitivity to constraints on word meaning: taxonomic versus thematic relations. *Cognitive Psychology*, 16(1), 1-27.
- Marquardt, N. (2010). Implicit mental processes in ethical management behavior. *Ethics and Behavior*, 20(2), 128–148.
- Mendez, M. F., Anderson, E., Shapira, J. S. (2005). An investigation of moral judgment in frontotemporal dementia. *Cognitive and Behavioral Neurology*, 18(4), 193-197.
- Mill, J. S. (1863). *Utilitarianism*. London: Parker, Son & Bourn, West Strand. Originally in *Fraser's Magazine*, 1861.
- Moore, A. B., Clark, B. A., Kane, M. J. (2008). Who shalt not kill? Individual differences in working memory capacity, executive control and moral judgment. *Psychological Sciences*, 19(6), 549-557.

- Nakamura, K. (2016). Our morals really depends on our language: the foreign language effect within participants. <https://mindmodeling.org/cogsci2016/papers/0175/paper0175.pdf>
- Nakamura, K. (2015). Effect is sure, but explanation is unsure: closer investigation of the foreign language effect with Japanese participants. In *CogSci*. <https://mindmodeling.org/cogsci2015/papers/0295/paper0295.pdf>
- Naqvi, N., Shiv, B., & Bechara, A. (2006). The role of emotion in decision making. *Current Directions in Psychological Science*, 15, 260–264.
- Nichols, S. (2002). Norms with feeling: towards a psychological account of moral judgment. *Cognition*, 84, 221–236.
- Nichols, S., Mallon, R. (2006). Moral dilemmas and moral rules. *Cognition*, 100(3), 530-542.
- Norcross, A. (2002) Contractualism and Aggregation. *Social Theory and Practice*, 28(2), 303-314.
- Oumlil, A. B., Balloun, J. L. (2009). Ethical decision-making differences between American and Moroccan managers. *Journal of Business Ethics*, 84(4), 457–478.
- O’Leary, C., Stewart, J. (2009). Governance factors affecting internal auditors’ ethical decision-making: an exploratory study. *Managerial Auditing Journal*, 22(8), 787-808.
- Pan, P., & Patel, C. (2016). The influence of native versus foreign language on Chinese subjects’ aggressive financial reporting judgments. *Journal of Business Ethics*, 1-16.
- Pavlenko, A. (2012). Affective processing in bilingual speakers: disembodied cognition? *International Journal of Psychology*, 47, 405–428.
- Payne, B. K., Bishara, A. J. (2009). An integrative review of process dissociation and related models in social cognition. *Psychology and Neuroscience*, 20(1), 272-314.
- Pellizzoni, S., Siegal, M., & Surian, L. (2010). The contact principle and utilitarian moral judgments in young children. *Developmental Science*, 13, 265–270.
- Petrinovich, L., O’Neill, P. (1996). Influence of wording and framing effects on moral intuitions. *Ethology and Sociobiology*, 17(3), 145–171.
- Petrinovich, L., O’Neill, P., Jorgensen, M. (1993). An empirical study of moral intuitions: toward an evolutionary ethics. *Journal of Personality and Social Psychology*, 64, 467–478.

- Plass, J. L., Chun, D. M., Mayer, R. E., & Leutner, D. (2003). Cognitive load in reading a foreign language text with multimedia aids and the influence of verbal and spatial abilities. *Computers in Human Behavior, 19*, 221–243.
- Premeaux, S. F. (2004). The link between management behavior and ethical philosophy in the wake of the Enron convictions. *Journal of Business Ethics, 85*(1), 13–25.
- Prichard, H.A. (1912). Does moral philosophy rest on a mistake? *Mind, 21*(18), 21-37.
- Puntoni, S., De Langhe, B., Van Osselaer, S. M. (2009). Bilingualism and the emotional intensity of advertising language. *Journal of Consumer Research, 35*(6), 1012-1025.
- Quartz, S. R. (2009). Reason, emotion and decision-making: risk and reward computation with feeling. *Trends in Cognitive Sciences, 13*, 209–215.
- Rashdall, H. (1907). *The theory of Good and Evil*. The Clarendon Press.
- Rosas, A., Viciano, H., Caviedes, E., Arciniegas, A. (2018). Hot utilitarianism and cold deontology: insights from a response patterns approach to sacrificial and real world dilemmas. *Social Neuroscience*.
<https://doi.org/10.1080/17470919.2018.1464945>
- Rosch, E. (1978). Principles of categorization. In R. Rosch & B. B. Lloyd (Eds.), *Cognition and categorization*. Hillsdale, NJ: Erlbaum.
- Rosch, E. (1975). Cognitive representations of semantic categories. *Journal of Experimental Psychology: General, 104*, 192–233.
- Sera, M. D., Berge, C. A., del Castillo, J. (1994). Grammatical and conceptual forces in the attribution of gender by English and Spanish speakers. *Cognitive Development, 9*(3), 261-292.
- Singleton, R. A., Straits, B. C. (2005). *Approaches to social research* (4th edition). New York, NY: Oxford University Press.
- Slovic, P., Finucane, M. L., Peters, E., MacGregor, D. G. (2002). The affect heuristic. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.), *Heuristics and biases: the psychology of intuitive judgment* (pp. 397–420). New York, NY: Cambridge University Press.
- Su, S. H. (2006). Cultural differences in determining the ethical perception and decision-making of future accounting professionals: a comparison between accounting students from Taiwan and the United States. *The Journal of American Academy of Business, 9*(1), 147–158.
- Starcke, K., Ludwig, A. C., Brand, M. (2012). Anticipatory stress interferes with utilitarian moral judgment. *Judgment and Decision Making, 7*(1), 61-68.

- Steinbock, B., Norcross, A. (1994). *Killing and letting die*. Fordham University Press.
- Stevenson, A. (Ed.) (2010). *The Oxford Dictionary of English*. Oxford, UK: Oxford University Press.
- Strohming, N., Lewis, R. L., Meyer, D. E. (2011). Divergent effects of different positive emotions on moral judgment. *Cognition*, 119(2), 295-300.
- Sutton, T. M., Altarriba, J., Gianico, J. L., Basnight-Brown, D. M. (2007). The automatic access of emotion: emotional stroop effects in Spanish-English bilingual speakers. *Cognition & Emotion*, 21, 1077-1090.
- Thibodeau, P. H., Hendricks, R. K., Boroditsky, L. (2017). How linguistic metaphor scaffolds reasoning. *Trends in Cognitive Sciences*, 21(11), 852-863.
- Thompson, J. J. (1985). Double effect, triple effect and the trolley problem: squaring the circle in looping cases. *Yale Law Journal*, 94(6), 1395-1415.
- Tzafestas, S. G. (2016). *Roboethics. A navigating overview*. Springer International Publishing. DOI: 10.1007/978-3-319-21714-7
- Valdesolo, P., DeSteno, D. (2006). Manipulations of emotional context shape moral judgment. *Psychological Science*, 17, 476- 477.
- Watson, G., Berkley, R. A. (2008). Testing the value-pragmatics hypothesis in unethical compliance. *Journal of Business Ethics*, 87(4), 463-476.
- Waxman, S. R., Kosowski, T. D. (1990). Nouns mark category relations: toddlers' and preschoolers' word-learning biases. *Child development*, 61(5), 1461-1473.
- Winawer, J., Witthoft, N., Frank, M. C., Wu, L., Wade, A. R., & Boroditsky, L. (2007). Russian blues reveal effects of language on color discrimination. *Proceedings of the National Academy of Sciences*, 104(19), 7780-7785.
- Yonelinas, A. P. (2002). The nature of recollection and familiarity: a review of 30 years of research. *Journal of Memory and Language*, 46(3), 441,517.

SITOGRAPHY

- Boroditsky, L. (2018). How language shapes the way we think.
https://www.ted.com/talks/lera_boroditsky_how_language_shapes_the_way_we_think?language=it
- Ethnologue (2009). <https://www.linguisticsociety.org/content/how-many-languages-are-there-world>

APPENDIX A

Materials used in Study One

Conway and Gawronski's original dilemmas	Italian translation
<p data-bbox="301 584 509 613"><i>1. Time machine</i></p> <p data-bbox="301 658 813 1227">You find a time machine and travel back to the year 1920. While checking into a hotel, you meet a young Austrian artist and veteran of the First World War. You realize this is Adolf Hitler before his rise to power in Nazi Germany. He is staying in the hotel room next to yours and the doors are not locked. It would be easy to simply smother him with a pillow in his sleep and disappear, stopping the Second World War and the Nazi party before they even start. However, he has not committed any crimes yet and it seems wrong to hurt an innocent person. Is it appropriate for you to kill an innocent young Adolf Hitler in order to prevent the Second World War?</p>	<p data-bbox="847 584 1166 613"><i>1. La macchina del tempo</i></p> <p data-bbox="847 658 1369 1227">Hai trovato una macchina del tempo e sei tornato indietro all'anno 1920. Mentre aspetti di fare il check-in per un hotel, incontri un giovane artista austriaco e veterano della Prima Guerra Mondiale; ti rendi conto che si tratta di Adolf Hitler prima che diventasse il leader della Germania nazista. Alloggia nella stanza a fianco alla tua e le porte non sono chiuse a chiave; sarebbe semplice soffocarlo nel sonno con un cuscino e scomparire, impedendo così l'inizio della Seconda Guerra Mondiale e dello stesso partito Nazista. Tuttavia, dal momento che egli non ha ancora commesso alcun crimine, sembrerebbe sbagliato fare del male a una persona innocente. Ritieni appropriato uccidere un giovane e innocente Adolf Hitler così da evitare lo scoppio della Seconda Guerra Mondiale?</p>
<p data-bbox="301 1402 472 1431"><i>2. Hard times</i></p> <p data-bbox="301 1476 813 2007">You are the head of a poor household in a developing country. Your crops have failed for the second year in a row, and it appears that you have no way to feed your family. Your sons, ages eight and ten, are too young to go off to the city where there are jobs, but your daughter could fare better. You know a man from your village who lives in the city and who makes sexually explicit films featuring girls such as your daughter. In front of your daughter, he tells you that in one year of working in his studio your daughter could earn enough money to keep your family fed for several growing seasons.</p>	<p data-bbox="847 1402 1054 1431"><i>2. Tempi difficili</i></p> <p data-bbox="847 1476 1369 2007">Sei il padre di una povera famiglia residente in uno stato in via di sviluppo. Le tue coltivazioni non danno frutti da due anni a questa parte, e ti ritrovi a non sapere come sfamare la tua famiglia. I tuoi figli, di otto e dieci anni, sono troppo giovani per andare a cercare lavoro in città, ma con tua figlia potrebbe essere diverso. Nel tuo villaggio c'è infatti un uomo che vive in città e che produce film a luci rosse le cui protagoniste sono giovani ragazze come tua figlia. Di fronte lei, l'imprenditore ti dice che, in questo ambito, lei potrebbe guadagnare in un anno abbastanza soldi da sfamare l'intera famiglia per molte stagioni a venire.</p>

Is it appropriate for you to employ your daughter in the pornography industry in order to feed your family?

Ritieni appropriato far lavorare tua figlia nell'industria pornografica così da sfamare la tua famiglia?

3. Abortion

You are a surgeon. A young woman you know becomes pregnant, but her body reacts in an unusual fashion. She develops a severe case of preeclampsia, a dangerous syndrome that leads to rapid increase of blood pressure. The only treatment is to deliver the baby. Unless the baby is delivered soon, the mother will die. However, the baby is too young to survive on its own. If it is delivered, it will die. So, although it is very difficult for her, the mother asks you to abort the baby.

Is it appropriate for you to perform an abortion in order to save the mother's life?

3. L'aborto

Sei un chirurgo in carriera. Una giovane donna di tua conoscenza rimane incinta, ma il suo corpo reagisce in modo inusuale: sviluppa infatti un grave caso di gestosi, una sindrome pericolosa che porta al rapido innalzamento della pressione sanguigna. L'unica soluzione è far nascere il bambino. A meno che il parto non venga indotto in fretta, la madre morirà; tuttavia, il neonato è troppo piccolo per sopravvivere da solo. Allora, nonostante sia una scelta molto difficile, la giovane donna ti chiede di effettuare un'operazione per interrompere la gravidanza.

Ritieni appropriato procedere con l'aborto così da salvare la vita della madre?

4. Animal research

You have been hired by a pharmaceutical company to conduct research on their products. Since products must be fit for human use, they are first tried out on animals. Your job is to find out the effects various chemicals have on rats, pigeons, rabbits, and monkeys. Most chemicals have only minor effects on the animals, but some cause them discomfort or even permanent damage. The chemicals you are researching are slated to form part of a new AIDS drug cocktail that will give new hope to millions of AIDS victims around the world. You anticipate saving many lives with the chemicals.

Is it appropriate to test these chemicals on animals?

4. La ricerca sugli animali

Sei stato assunto da un'azienda farmaceutica per condurre delle ricerche su alcuni loro prodotti. Dal momento che i prodotti devono essere adatti alla somministrazione sull'uomo, vengono prima testati sugli animali: il tuo compito è quello di scoprire quale effetto hanno determinate sostanze su topi, piccioni, conigli e scimmie. Molte delle sostanze hanno effetti minori sugli animali, ma alcune possono causare malessere e persino danni permanenti. Le sostanze che stai testando saranno utilizzate per la creazione di un farmaco per la cura dell'AIDS, che darà così nuove speranze ai pazienti di tutto il mondo affetti da questa malattia; prevedi che questo farmaco salverà infatti moltissime vite. Ritieni appropriato effettuare i test sugli animali?

5. *Crying baby*

It is war time. Enemy soldiers have taken over your village. They have orders to kill all remaining civilians. You and some of your townspeople have sought refuge in the cellar of a large house.

Outside you hear the voices of soldiers who have come to search the house for valuables. A baby with no parents begins to cry loudly. You cover his mouth to block the sound. If you remove your hand from the baby's mouth his crying will summon the attention of the soldiers who will kill you and the others hiding out in the cellar. To save yourself and the others you must smother the child to death.

Is it appropriate for you to smother the child in order to save yourself and the other townspeople from being killed?

5. *Il bambino che piange*

È tempo di guerra; dei soldati nemici hanno preso il controllo del tuo villaggio e hanno ricevuto l'ordine di uccidere tutti i civili rimasti. Tu e alcuni compaesani vi siete rifugiati nello scantinato di una grande casa. Senti provenire dall'esterno le voci di alcuni soldati che stanno ispezionando la casa alla ricerca di oggetti di valore. Una neonata, orfana, inizia a piangere rumorosamente, quindi le copri la bocca per mascherare il suono. Se togli la mano dalla bocca della neonata, il rumore del pianto attirerà l'attenzione dei soldati che uccideranno te e tutti quelli presenti nel seminterrato; per salvare sia te che i tuoi compaesani, devi quindi soffocare e uccidere la neonata.

Ritieni appropriato soffocare la neonata così da salvare la vita tua e di tutti coloro presenti nel seminterrato?

6. *Torture*

You are a police officer, and have recently caught a criminal you have been hunting for some time. He is allegedly responsible for rigging a series of explosive devices: some that have already gone off and some that have yet to detonate. He places explosives outside city cafes and sets them to go off at a time when people are drinking coffees on patios. In this manner, he has injured many people and might injure many more. Now that the criminal is in custody, you want to know where the unexploded bombs are so you can defuse them. He refuses to talk, so you decide to use "aggressive interrogation techniques" like holding his head under water and beating him.

Is it appropriate for you to use "aggressive interrogation techniques" in order to find and defuse the unexploded bombs?

6. *La tortura*

Sei un agente di polizia e recentemente hai arrestato un criminale ricercato per parecchio tempo. Secondo quanto riportato, il criminale sarebbe responsabile del piazzamento di alcuni congegni esplosivi, alcuni dei quali sono esplosi e alcuni dei quali devono ancora esplodere. Le bombe sono state posizionate fuori da alcuni bar e sono state impostate per detonare quando molta gente è intenta a bere caffè seduta ai tavolini esterni. Così facendo, molte persone sono state ferite, e molte sono ancora in pericolo. Ora che il criminale è finalmente stato arrestato, vuoi sapere dove sono state piazzati i congegni rimanenti così da poterli disinnescare, ma il criminale si rifiuta di parlare. Decidi allora di usare tecniche di interrogatorio violente, come tenergli la testa immersa sott'acqua o picchiarlo.

Ritieni appropriato usare tecniche di interrogatorio violente così da poter trovare e detonare le bombe rimanenti?

Dichiarazione di consenso informato

Questo studio tratta di come l'uso di una lingua straniera possa influenzare le nostre decisioni. La sua firma su questo modulo indicherà la volontà di partecipare allo studio. La ricerca sarà condotta da Giorgia Zanfardin sotto la supervisione della professoressa Giulia Bencini.

Lo studio consiste in un questionario diviso in tre parti (presentazione dei dilemmi morali - domande sulla demografica - autovalutazione della competenza linguistica) volto a identificare se l'utilizzo di una lingua non nativa influisca sul nostro giudizio etico e morale. Lo strumento utilizzato per indagare questo ambito è la presentazione di alcuni dilemmi etici e morali volutamente controversi nel loro contenuto: per questo motivo avvisiamo che è possibile che alcuni temi trattati possano mettere a disagio il partecipante. Il partecipante è altresì libero di rinunciare in qualsiasi momento alla compilazione del questionario, qualora non si senta a suo agio nel rispondere alle domande proposte.

Ci teniamo a sottolineare che i dati raccolti verranno trattati nella massima anonimità; tutti i dati verranno elaborati dalla ricercatrice e i risultati verranno pubblicati come tesi di laurea magistrale. Il suo nome non apparirà in nessuna forma e la sua identità non sarà riconoscibile.

La partecipazione allo studio è volontaria.

Il/la sottoscritto/a (nome e cognome): _____

Nato/a a: _____

Il: _____

Dichiaro di aver letto e di acconsentire alle condizioni riportate nel modulo.

Demographic questions

Età:

Sesso: - Maschile
 - Femminile

Professione: - Lavoratore/lavoratrice
 - Studente/studentessa
 - Altro:

Se studente/studentessa, specificare il - Scuola secondaria di II grado:
livello: Istituto Professionale
 - Scuola secondaria di II grado: Liceo
 - Laurea Triennale
 - Laurea Magistrale
 - Laura a ciclo unico
 - Dottorato di ricerca
 - Altro:

Madrelingua:

A che età hai iniziato a studiare la lingua
inglese?

Per quanti anni hai studiato la lingua
inglese?

Quale contesto ha influito maggiormente - Familiare
sul tuo apprendimento della lingua - Scolastico
inglese? - Altro:

Utilizzi quotidianamente la lingua - Si
inglese in ambito familiare? - No

Hai vissuto in Paesi in cui la lingua - Si
dominante è l'inglese? - No

Se sì, per quanto tempo?

Foreign language proficiency test:
translation from Italian to English

Short story in Italian

Target translation in English

C'era una volta un re che radunò un gruppo di saggi e diede loro il compito di creare un anello che lo rendesse felice quando lui si sentiva triste. Una volta creato l'anello, fu inciso con la frase "anche questa passerà".

Once upon a time there was a king who gathered a group of wise man and asked them to create a ring that would make him happy whenever he was sad. Once the ring was created, it was engraved with the sentence "this too shall pass."

APPENDIX B

Materials used in Study Two

Buffer set

I. L'incidente automobilistico

Stai guidando in una trafficata via cittadina quando tutto d'un tratto una giovane madre con un neonato in braccio inciampa e cade proprio sulla tua traiettoria. Tu stai andando troppo veloce per riuscire a frenare in tempo e la tua sola opzione è quella di sterzare bruscamente; sfortunatamente, nell'unica direzione verso cui potresti sterzare, si trova un'anziana signora. Se sterzassi per evitare la giovane madre con il neonato, finiresti così per ferire gravemente o addirittura uccidere l'anziana.

Ritieni appropriato sterzare e colpire l'anziana signora così da evitare la giovane madre con il neonato?

II. Relationship

You are divorced now and your former spouse lives far away. You don't expect to see your former spouse for a very long time. However, you have recently started dating a new person that is positively wonderful. Your new partner is head over heels in love for the first time and you feel equally strong about your partner. You want to do everything in your power to keep the relationship progressing smoothly to what you believe will be a second marriage. Unfortunately, your new partner has told you many times that dating someone who is divorced is totally unacceptable. It is expressly forbidden in your partner's religion. Your partner doesn't know about your ex-spouse. You consider simply pretending that you have never been divorced so that your current relationship can continue.

Is it appropriate for you to leave your new partner in the dark about your previous relationship in order to keep her/him happy and the relationship alive?

III. Border crossing

You are a soldier guarding a border checkpoint between your nation and one troubled by insurgent violence. You notice a young man in a cheap car approaching the checkpoint with a determined look on his face. You suspect he means to bomb the checkpoint, killing all the soldiers inside. He is rapidly approaching your station. Is it appropriate for you to shoot and kill the approaching man?

IV. La politica di vaccinazione

Sei un medico e lavori in una clinica stipata di pazienti affetti da una grave malattia. Hai appena ricevuto la spedizione di un nuovo farmaco che può curare la malattia, farmaco che però ha gravi effetti collaterali. Se somministri il farmaco ai tuoi pazienti, un esiguo numero di loro morirà a causa degli effetti collaterali, ma la maggior parte guarirà; tuttavia, se non lo somministrerai, la maggior parte morirà a causa della malattia.

Ritieni appropriato somministrare il farmaco ai tuoi pazienti?

V. The trolley

A runaway trolley is heading down the tracks toward five workers who will all be killed if the trolley proceeds on its present course. You are standing next to a large switch that can divert the trolley onto a different track. The only way to save the lives of the five workers is to divert the trolley onto another track that only has one worker on it. If you pull the switch, the one worker will die. Is it appropriate for you to divert the trolley and kill one man in order to save five?

ACKNOWLEDGEMENTS

I would like to express my gratitude to my supervisor, professor Giulia Bencini, whose knowledge, expertise, and positivity have helped me throughout the writing of this work.

To my parents who always believed in me and invested in my education and in my future; who are my biggest fans and who will always have my back. To my sweet grandmas, who never completely understood what I was majoring in, but whose love and support kept me on going. To my brother who lives far away, but would always go the extra mile for me.

To Stefania, Arrigon and Caramella whose friendship made me feel home, even if my house was hundreds of kilometres away. To Pippo, the best flatmate on Earth and even greater friend, and to Tania, Vanin, and all the others who made my journey to Venice more extraordinary than I could have ever imagined.

Finally, I would like to thank Gabriele for teaching me the fundamentals of caring, and whose support helped me finishing this thesis.