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Conceptual Maps of European Values

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Abstract

Systems of human values reflected in European languages have not yet been diagnosed in language sciences, as no accurate diagnostic measures have been proposed. Research has been conducted into methods of modelling conceptual systems of moral values. Since ethics, unlike subjects related to natural sciences, resists lexicographic approach reliant on topicality, linked with market demand, a new research method has been devised. Specialised lexicography tools can be optimized to deal with the subject of ethics. The new method takes into account differences between subject areas regarding their associations with a type of science. Systems of human values can be measured based on prioritizing documents created in European languages according to the degree to which concepts referred to in these documents are fixed. These findings give rise to a cross-historical and cross-cultural linguistic enterprise. Its aim is to identify moral concepts and to connect them into semantic maps. The maps, one per language, are contrasted to find out which moral concepts are 'shared' across languages, and which of them are less common, or language specific. The model of 'common' values can be seen as an instrument to preserve and promote European moral heritage.

Keywords

concepts of human values, conceptual maps, European languages, language modelling methods, specialised lexicography

Introduction

European moral values can be studied from many perspectives, the earliest provided by Heraclitus, credited as the first systematic student of values (Waterfield, 2000, p. 109; Tatarkiewicz, 2005, pp. 31-34; Graham 2015), and by Socrates, the founder of ethics as a scholarly discipline (Cohen, 2004, pp. 1-20; Tatarkiewicz 2005, p. 81). An intrinsic factor of human actions (Krapiec, 2000, p. 91), values underpin Europeans'

integrity and decide about their identity. Financial pressures, security threats, constitutional dilemmas (Colliver, 2016), increasing multicultural frictions, exacerbated by the humanitarian migration crisis (Guría, 2016), and growing national concerns, call for ethicists to review the idea of a united Europe. Terminologists, who engage in concept analysis to achieve an understanding of a domain and construct accurate definitions of terms (Bowker, 2003, p. 154), can provide assistance, after reexamining their research method relative to the subject of ethics.

Customarily focused on technical fields (Thellefsen, 2005), term specialists can pay more heed to the subject of ethics to assist in diagnosing and organizing concepts in this field. Reliant on human personal dispositions and reflected in languages, moral values are modelled by various factors, such as respect for legitimate authority combined with autonomous prosocial tendencies (Piaget, 1932; Krebs, 2011, p. 27). As human values can divide into temporary and permanent (Gawande, 2002, p. 23), the scope of research has been narrowed to permanent (eternal) values, existing irrespective of place and time. Since ethics, unlike subjects related to natural sciences, resists terminological approach reliant on topicality, linked with market demand, a new study method has been devised. Aspects of newly proposed (domain sensitive) method are discussed in conjunction with its impact on resultant models of knowledge (conceptual maps), dedicated to the subject field in question.

The proposed method of research in language sciences (terminology) takes into account differences between subject areas regarding their associations with a type of science. With a redefined concept of topicality, which does not limit its understanding to the concept of real time, it can be expected that the new method will respond not only to the requirements of empirical (natural) sciences, but also to the needs of subject fields such as ethics, whose approach appears to be highly dependent on deductive reasoning and negotiated interpretation (Plato, [ca. 380 BC] 1997; Brown, 2010). The domain sensitive method, based on prioritizing documents in European languages and employed to assist ethics in uncovering the underpinnings of Europeans' identity (MacIntyre, 2013), gives rise to a cross-historical and cross-cultural enterprise. The proposed method can free terminology of some unproductive constraints, its immediate goal being to propose a conceptual map of moral values.

Classification of documents is proposed as a base for mapping European values. Systems of values can be measured based on prioritizing documents (language products) according to the degree to which concepts referred to in these documents are fixed. The identified concepts are connected into semantic maps (Eppler & Burkhard, 2006, pp. 551-554; Buzan & Griffiths, 2014). The resultant maps, one per language, can then be contrasted to find out which moral concepts can be viewed as 'shared' across languages, and which of them are less commonly represented, or language specific. A map of 'common' values is thought of as an open model of knowledge, an instrument to preserve and promote European moral inheritance. Such a model seems consistent with the motto of unity in diversity (Bawden, 2001; Good, 2006), as well as capable to

assist in meeting ambitious educational objectives put forward by ethicists (Cleveland & Tran, 2011; Tischner, 2011, pp. 181-185).

1 European values and linguistic enterprise

A traditional area of research in philosophical sciences (Hartmann, 1966, pp. 322-341), moral values have been of interest to scholars of many disciplines, including psychology (Forgas *et al.*, 2016), sociology (Hitlin & Vaisey, 2010), cultural studies (Parekh, 2000, pp. 114-129), *etc.* Ethical values can be viewed as nonphysical phenomena, entrenched in the concept of *life* (Rand, 1961) and combined into clusters, no matter whether one studies an individual or a social group of individuals. From the modern linguistic (anthropological) viewpoint, which attempts to take into account the personal character of human conceptualizations, systems of human values are, at least to a certain degree, always unique. While not directly observable, they can be inferred from language products (Zerkina *et al.*, 2015, p. 257), which refer to relevant (moral) concepts. There have been relatively few attempts to describe these systems in linguistics, and much fewer in the field of terminology.

Given the rarity of lexicographic activities in the area of moral values, terminological groups and societies may need to review their understanding of certain descriptors, such as ‘topicality’ or ‘up-to-datedness’ (Sahlgren & Karlgren, 2001, p. 169; Łukasik, 2012, p. 106). These refer to the criteria used for the acceptance of terms while implying the need to rely on most recent sources for term extraction. Some term systems, which reflect conceptual fields of biotechnology, nanotechnology, and other quickly growing disciplines propelled by natural sciences, may have a transient character, being constantly in need for an update. In contrast, term clusters formed to reflect concepts in slower growing disciplines, sometimes referred to as ‘dogmatic’ (Renzong, 2011, p. 173), including ethics, can be described as rather stable. The differences between such fields of human activity can result in different life cycles of terms, which seems to justify changes in terminological analyses.

The proposed changes necessitate a bipolarization of the descriptor ‘topicality’ as referring to a term selection criterion. In fields motivated by empirical sciences, for whose products there is usually a high demand, terminologists may use the analytical criterion of topicality, linked with the notions of currency (temporariness) of source vocabulary (Stubley, 2000). In this case, analytical work will be synchronic. By contrast, with fields supported by scientific intellectual efforts based to a greater degree on established principles, terminologists may need to combine the synchronic and diachronic perspectives to ensure comprehensiveness. In such a case, the notion of topicality will be linked more with that of consciousness, and less with that of time. The combined method proposed for the treatment of sources influenced by ‘dogmatic’ theorizing introduces to terminology a modified approach, one which is sensitive to the subject of research.

Terminologists should adopt a flexible approach in studying conceptual systems of subject fields, technical as well as scientific. A different method is required when studying a field driven by an empirical natural scientific domain, and a different method is needed when studying a domain associated with philosophy. Terminologists should respect the approaches and methods of dividing concepts in a field they are studying. If scientists or experts treat and divide concepts independent of the time span or current trends motivated by interest holders, terminologists should follow suit and adopt this view in their own methods. This is the case with subjects such as ethics, where people become engaged in an eternal discourse. Conversely, if for a group of specialists such factors as time and circumstances, market trends, *etc.* play an important role, then terminologist should act accordingly, using only the latest resources when preparing a thematic corpus.

Practically oriented representatives of linguistic sciences, terminologists assist specialists of diverse disciplines in organizing their vocabularies in order to make professional communication more productive. The quantitative analyses of recently published dictionaries (Łukasik, 2007) show that professionals from fields linked with empirical sciences (natural and social) show relatively more interest in terminologists organizing their vocabularies than those who represent areas highly reliant on *a priori* rules (deductive means, intellectual principled reasoning), such as ethics, aesthetics, mathematics, logic, *etc.* Pure terminologists may intervene, but few projects of modelling systems of ethical values are being implemented (Bartmiński & Grzeszczak, 2014). Instances of cooperation between term specialists and ethicists have been rather rare for a number of reasons, mainly related to the special character of the subject under consideration.

Term specialists and ethicists have so far cooperated sporadically as the latter appear to be largely self-reliant in organizing concepts in their field of research. The need of ordering moral concepts has been widely recognized in the area of ethical values, and indeed in the field of ethics in general (Dąbrowska [1950] 2006; Popper, 2014, p. 129). This fact might be a factor in ethicists adopting a somewhat reserved attitude to collaborative language based projects. Moreover, the field's profile requires a combined term compilation method, which necessitates the use of a much greater number of sources than in the case of fields propelled by empirical sciences. Thus, when preparing a corpus of documents terminologists can be expected to take into account these works' relevance in the domain rather than a date of publication. In effect, term specialists should include in corpora works written by ancients and those produced by contemporary authors, which can prove a challenge.

With the combined (synchronic and historical) approach, the body of resources grows to the extent that it may become too large for one scholar to analyze. For example, if one accepts the task to create a lexicographic map of European values, one will need to consider the thematic area of all text sources produced by humans in languages spoken in Europe across centuries. The theme of moral values seems universal. It is not

only covered in philosophical treatises and essays, but also found in journals, magazines, belles-lettres, newspapers, ephemera, radio podcasts, *etc.* To deal with the scope of this study, a team of researchers has been formed, the resources organized into units. While the synchronic mode of analysis enables a division of all information objects by language, from the historic (diachronic) point of view, systems of human values can be diagnosed by prioritizing documents made in popular European languages.

2 Terminology methods of modelling European values

The analytical method centres around the scope of research. From the synchronic perspective, languages are selected according to their impact, measured by statistics and their traditional influence on the subject of ethics. 10 European languages have been chosen for diagnosing human moral values: German, Italian, English, French, Spanish, Polish, Ukrainian, Russian, Greek and Latin (EC, 2012). Greek and Latin have been selected to recognize these languages' special role in creating early philosophical literature, still read by many students of ethics. Importantly, all the languages featured on the list are understood to have equal status and are studied for subsequent comparisons. The synchronic organization of resources by languages enables a division of work into language tasks. Assigned to language panels, researchers work on content objects to extract information using the implicative (citation) method (van Roey, 1990, p. 34). The quotes are selected individually by each researcher and keyed into the citation data base under a language heading for further analysis. The choice of resources can be based on the categorisation of documents conducted in response to the voluminous body of information objects.

In view of the importance of the historical perspective, prioritizing thematic sources seems essential. While preparing a semantic map of ethical values, a theme linked with 'dogmatic' sciences, in which limitation of documents by time would give skewed results, a new (modified) approach has been suggested. It is proposed that all content objects should be categorized according to the degree to which concepts referred to in these objects have been fixed. A priority list of information objects recommended as likely to contain target designations has been established for the subject of ethical values, with 'values' understood in the strictest sense as moral virtues (Puzynina, 2014, p. 10). Accordingly, the following theme oriented documents are listed in order of priority: 1. normative documents (bills of rights, charters of rights, declarations, constitutional preambles, *etc.*), 2. reference works (dictionaries, encyclopaedias, thesauri, *etc.*), 3. professional literature (dissertations, treatises, essays, *etc.*), 4. high literature (narrative literature, poetry, drama), 5. content objects of lesser impact (recorded discussions, debates, lectures, inscriptions, *etc.*). As an examination of each category might raise certain questions, a more particular account could be useful.

The combined terminology approach involves further categorization of sources according to their weight, a procedure especially important with very broad categories. The category of normative resources constitutes a relatively short list of documents for every language. The application of the criterion of language used for the choice of normative documents has been restricted to the geographic region of Europe. Normative documents are seen as reflecting national cultures, with language factor playing no exclusive part in their development. Hence, the *Charter of Fundamental Rights of the European Union*, and not the *Preamble to the Constitution of India* ought to be elected as an important source of the first category, although the language in the case of either of these documents is English. Normative documents with a global outreach should also meet with approval by terminology committees, provided they meet the criterion of having been produced in one of the languages under consideration, and their regulations are officially recognized in a European country where the language is spoken. Examples include binding documents published by the European Union and the United Nations, as these contribute to shaping the legal culture at a national level.

Similarly, the category of reference sources constitutes a limited number of content objects, which enables researchers in every panel to make individual decisions concerning the choice of documents considered for analysis. Reference works can be regarded as summaries of a stage in the cultural advancement of human thought (Murphy, 1997, pp. 160-161), promoted by nationally recognized publishing houses and higher institutions of learning. This means that researchers ought to take into account reference works produced in English and published in the UK, rather than those produced in English and published in Canada or the RSA, with language considered as an insufficient factor to include in this study documents released outside of Europe. Reference works made by ethicists, aiming to capture global cultural trends, should be accepted as valuable sources, since they will presumptively include valid information on European values. Publications co-authored by scientists of European academies merit attention, as do works whose titles include descriptor 'international', as in *International Encyclopedia of Ethics*. Choices that the researchers make in a language panel are recorded at an Internet citation base, where a separate heading is made for every language analyzed.

The following 2 narrow ordered categories of documents should be considered in the first place for their potential of containing information on ethical values.

1. Normative documents (acts of rights, e.g. the UK's *Act of Human Rights*, charters of rights, e.g. the EU's *Charter of Fundamental Rights of the European Union*, declarations of rights, e.g. the *Universal Declaration of Human Rights*, constitutional preambles, etc.);
2. Reference sources (encyclopaedias, e.g. H. LaFollette's *International Encyclopedia of Ethics* as well as R. Chadwick's *Encyclopedia of Applied*

Ethics, dictionaries, e.g. D. Robertson's *A Dictionary of Human Rights*, glossaries, etc.).

The categories of professional literature and high literature are broad. In concrete language cases these may include thousands of documents. For this reason, the documents belonging to either of these categories need to be further prioritized. The proposed criterion for ordering the documents is that of a cultural impact, understood as the scope of recognition associated with the range of the subject matter (Krzys, 1992, p. 274). Therefore, the greatest weight will be attached to documents qualified to the world canon (Carravetta, 2012), with relatively less recognition given to national canons, and less still to those content objects that the researchers choose to add in a justifiable manner. The category composed of content objects of lesser impact may be the broadest, but as the information objects it contains are not widely recognized, they receive the least recognition from research teams. Choices made in this category rely on the quality of justification provided for their selection. As the proposed term compilation method can be referred to as inductive combined with elements of a deductive approach, ethicists can be consulted throughout the duration of the project for interpretation of concrete portion of documents subjected to analyses.

Europe has exceeded other continents as regards the export of languages, the majority of speakers of English, Spanish and French living in regions outside of Europe (Haarmann, 2011, p. 15). The languages under study possess common roots, with differences between them noticeable but rather insignificant, as in English (British English compared with US English, or English spoken in the RSA) or Spanish (Castilian Spanish compared with Mexican Spanish, or Spanish spoken in Chile). The impact that foreign cultures make on European national cultures through 'shared' languages can be exemplified by Scotland's highschool reading lists containing novels of popular American authors (J. Steinbeck, J.D. Salinger, H. Lee, etc.), and by recommended readings for students of English and Philosophy at King's College at the University of Cambridge, including works by non-European authors (J.M. Coetzee, T. Morrison, T.S. Elliot, etc.), and American philosophers (T. Nagel and P. Smith). To recognize this cultural exchange, which feeds European national cultures while enriching them, a decision has been made to accept up to 10% of non-European documents in terminological analyses of European moral concepts for each language included in the study.

Cultural influences on Europeans' worldviews can be noticed not only at the level of professional literature treating of ethical values and at the level of high literature, but also at the level of sources of lesser impact, the latter including both written documents of lesser weight and recorded instances of spoken language with limited durability (speeches, interviews, debates, etc.). The modern culture of participation and sharing (Vandendorpe, 1999) offers information exchange rates likely to exceed imagination. Hence, researchers can quote from a novel written by an English author from the UK,

or from a speech given in English by a citizen of Canada or the RSA, bearing in mind the said limit for non-European documents, with the language viewed as part of Europe's heritage. Notably, all content objects in this category, including nondurable sources, obscure documents and ephemera, should enjoy equal status when considering their acceptance as valuable sources of information on the concepts of European values. Spoken language deserves special attention, not least as it has been reported as an area most often under-represented in language corpora (Lindquist, 2009, pp. 11-43), the main reason being that such a set of sources can prove costly and complicated to collect.

The following 3 broad ordered categories of prioritized documents should be considered for their potential of containing information on ethical values.

3. Professional literature (dissertations, treatises, essays, *etc.*)
 - the world canon (the *Harvard Classics*, the *Western Canon*);
 - the national canons (recommendations from nationally recognized academic institutions, e.g. the Faculty of Philosophy at the University of Oxford, or Institut für Ethik und Gesellschaftslehre at Karl-Franzens Universität Graz);
 - the supplementary lists (justified choices of the researchers conducting the project).
4. High literature (narrative literature, poetry, drama)
 - the world canon (the *Harvard Classics*, the *Western Canon*, the content objects authored by Nobel Prize Laureates in Literature);
 - the national canons (recommendations from nationally recognized academic institutions, official readings for schools published by a ministry of education or its equivalent, e.g. Poland's Ministerstwo Edukacji Narodowej, or France's Ministère de l'Éducation nationale);
 - the supplementary lists (justified choices of researchers conducting the project).
5. Nondurable sources, obscure documents and ephemera (popular literature, monument inscriptions, press articles, speeches, lectures, interviews, debates, social media pages, *etc.*).

As the idea of intersubjectivity lies at the heart of the project, a team based approach has been applied, with work delegated to language panels formed to deal with either of 10 languages involved. At first, researchers in each panel are expected to work individually using the implicative method. An Internet quotation base is being developed with every entry made by an analyst. The method of term selection is based on 3 linguistic parameters, namely conceptual (C), relational (R) and formal (F). As human moral values are considered a point of departure in ethics, notions of humanity are central to ethical considerations (Green, 2011, p. 384), regardless of the elected method of scientific inquiry accepted in the field (Jecker, 1997, pp. 118-124). Hence,

terminology based research into systems of human virtues also requires analysts to put the concept of humanity in the centre. As a consequence, the analysts search document domains for the concept *humanity* and for the related concepts referring to virtues. The latter can be recognized as they a) are non-demonstrable (abstract) units (Danesi & Perron, pp. 78-79); b) have nonmaterial referents, and c) are linked with the central concept in such a way that the concept becomes strengthened. Importantly, both the target concepts and the link of strengthening (intensification) can be expressed in numerous ways.

The proposed terminological scheme can be seen as based on the central concept *humanity* being strengthened (intensified) with concepts of concrete moral values, such as *truth, justice, freedom, love, etc.* The link of strengthening appears to function as a special instance of categorial (generic) relationship, a characteristic mode of thinking in ethics, since the concepts of moral values are seen by ethicists as reinforcing the concept of personal growth (Jones & Ferrill, 2006, p. 71). One more type of semantic relationship seems useful in recognizing the concepts of moral values, namely the assertive relationship of simple qualification, whereby authors qualify (classify, subsume) concrete moral concepts under the category of ‘moral values’, ‘ethical values’, ‘human values’, ‘virtues’, ‘human dignity’, ‘human rights’, *etc.*, without any attempt at intensifying the key concept *humanity* underlying the category in question. For the sake of example, the concept *humanity* (C_0) and the concept *freedom* (C_1), as well as the relationships (R) of intensification (reinforcement) and simple qualification (subsumption) observed between these 2 types of conceptual object, can take different verbal forms (F). While these forms can be viewed as synonyms and near (or partial) synonyms in the field of ethics, much caution is needed regarding early assessments in this respect.

$C_0(F)$ – human, (human) dignity, humanity, humanitarian, human kind, (human) life, human rights, (human) values, moral goodness, moral values, mankind, people, person, virtue, *etc.*

$C_1(F)$ – autonomy, autonomous, free, freed, freedom, free will, independence, independent, liberty, self-determination, self-determined, sovereign, sovereignty, *etc.*

$R(F)$ – blesses, builds up, cannot live without, central, constitutes, creates, essential, eternal, key, makes, (most) important, (most) valuable, reinforces, strengthens, *etc.*

The implicative method, which uses diverse kinds of content objects, requires several analytical premises. Lists of synonymous forms mirroring concrete moral (ethical) concepts can serve analysts as guidelines, but should make no claims to exhaustiveness or exclusiveness. It may transpire that forms initially treated as synonyms or near synonyms are used in the area of research to refer to separate concepts. The categories of normative documents and reference sources should not pose major interpretative problems, since sources of this kind contain information where

ambiguity tends to be low. In a similar vein, authors of content objects in the category of professional literature tend to provide clear information. In contrast, in the case of content objects belonging to either of the last 2 categories (high literature and sources of lesser impact) researchers might be confronted with ambiguous figures (tropes) (Baldick, 2008, p. 130), such as metaphor, metonymy, personification, simile, synecdoche, irony, *etc.* In the case of figurative treatment of moral concepts, a consensus should be reached in an appropriate language panel on finding an unambiguous word for concept(s) referred to in a quote. With such quotes, it also seems advisable that more than 1 content objects by the same author should be analyzed as a test of consistency.

Term weighting is a method of ensuring relevance, known and used in the field of information science (Chunyu & Jian-Yun, 2015, pp. 497-498). In linguistics, where the corpus method of term extraction is focused on numbers or statistics, term weighting has not been as popular. Nonetheless, moral sciences, with their traditional resistance to statistical averages (Von Mises, 1990), merit an alternative treatment. It is proposed that analysts assign weight points to quotes from content objects qualified under the pre-selected categories, ordered by the degree to which concepts in these documents are fixed, a criterion linked with the average time for which a document is recognized as valid. Before source concepts are allowed into the networks of intellectual constructs of analysts (term specialists), thus becoming operationally-defined, it is advisable to ensure an optimal validity of the language data based on source documents. Moral concepts marked in quotes from normative documents receive 5 points each, a concept expressed in a quote from a source of reference is given 4 points, and a professional literature quote has the weight of 3 points. Lastly, each concept marked in a high literature quote and a quote from the group of content objects of lesser impact (nondurable sources, obscure documents and ephemera) receives 2 points and 1 point respectively.

A team based approach and the use of an Internet quotation data base enable building a thematic collection of quotes, large enough to provide a valid source for selecting candidate terms and for building a network of terms. The collective effort of researchers, whose work has been organized in 10 language panels, results in each panel producing a conceptual web. Grouping quotes, containing bolded candidate terms, in one quotation base, while allocating them to different columns designed individually for each language, obviates the need to overlay a researcher's weighted candidate terms with those of other analysts working in the same panel. Problem candidate terms can be analyzed within the language panels to build synonym rings. Subsequently, all the selected candidate terms can be counted so as to see which values have been conceptualized the most frequently. The proposed implicative approach, which uses modern Internet based technology, enables the creation of conceptual maps, one per language. The method can lay the groundwork for contrasting these maps to learn which moral concepts are 'shared' across the languages, which of those concepts are spread to

a lesser degree, and which of them feature prominently in a limited number of languages under consideration, or, indeed, in only one of those languages.

3 Experimental models of Europeans' moral values

Weighting of sources will be reflected in different weights attached to terminological units. The quotes are presented below, with key words (concept markers referring to moral values) underlined, and words considered as central to moral sciences (concept markers such as 'humanity', 'cardinal virtues', 'human dignity', *etc.*) italicized. Importantly, the number of quotations from one source has an imposed limit of 5 quotes. This limit should ensure a content balance between sources whose authors tend to elaborate on the subject and sources whose authors are rather economical with words (succinct). These differences are often linked with either the genre or an author's individual style, or both these factors play a part. Another important rule employed in this study for the same reason is one to avoid duplicates. Researchers decide on one of a number of quotes highlighting a concrete value in a document. Information is provided on the number of weight points assigned to the quotations to ease measurements. The following quotation samples, English and Polish, are to exemplify the study of documents in 2 out of 10 language panels. The conceptual maps (Fig. 1 and Fig. 2), based on the study of sample documents, have been provided for visualisation.

English panel:

„The quality of mercy is not strain'd, It droppeth as the gentle rain from heaven Upon the place beneath: *it is twice blest*; It blesseth him that gives and him that takes: *'Tis mightiest in the mightiest*: it becomes The throned monarch better than his crown; His sceptre shows the force of temporal power, The attribute to awe and majesty, Wherein doth sit the dread and fear of kings; But mercy is above this sceptred sway; It is *enthroned in the hearts of kings*, It is *an attribute to God himself*“ (Shakespeare, [1600] 2016, p. 2309). 2 pts

“Things base and vile, holding no quantity, love can transpose to form and *dignity*. Love looks not with the eyes, but with the mind: And therefore is winged Cupid painted blind (Shakespeare, [1600] 2016, p. 27). 2 pts

“In the crowded highway, beside his basket, he stood, leaning on his twisted stick, with his tired, steadfast face – a ragged statue to the *great*, unconscious *human virtue*, the *most hopeful and inspiring of all things on earth*: Courage without Hope!“ (Galsworthy, [1910] 2013, p. 4919). 2 pts

“At that moment for the first time, he actually *looked like a man*. I never before realised *the value of freedom*; the real meaning of our relations with other human beings; the necessity for the mind's being burnished from minute to minute by sights and

sounds, by the need to remember and using what we remember To watch that look pass over his face at the mere remembrance of a name was like catching sight of a tiny scrap of green leaf left in the heart of a withered shrub. ... His world was not a large one; about fourteen feet by eight. He'd lived in it for twenty-seven years, without a mouse even for a friend“ (Galsworthy, [1910] 2013, p. 4943). 2 pts

“... *the world is* not ruled by power, and the fear which power produces, ... it's *ruled by love*. Society is held together by the natural decency in man, by fellow-feeling. ... If it weren't so, do you imagine for a moment your 'boys in blue' could keep order? A man knows unconsciously what he can and what he can't do, without losing his self-respect. ... Laws and authority are not the be-all and end-all, they are conveniences, machinery, conduit pipes, main roads. They're not of the structure of the building – they're only scaffolding“ (Galsworthy, [1911] 2013, p. 1381). 2 pts

“The elementals that we want now, that the ordinary man wants now, are those *attributes of Unity* – justice, love and courage. We want them *glorified* – not by forms such as that Christ died for us, that Christ was the son of God, that Mary his mother is in the Company of Heaven, that we may eat of the body and the blood of our Redeemer, and so forth; but by proclamation by word and deed throughout the land that justice, love and courage are our *high aims*; that we have the germs of them in all of us“ (Galsworthy, [1912] 2013, p. 8049). 2 pts

“Honesty of thought and speech and written word is *a jewel*; and they who curb prejudice and seek honourably to know and speak the truth are the only true builders of *a better life*“ (Galsworthy, [1919] 2013, p. 8068). 2 pts

“Those who have never known the deep intimacy and the intense companionship of happy mutual love have missed *the best thing that life has to give...*“ (Russell, [1929] 2009, p. 80). 3 pts

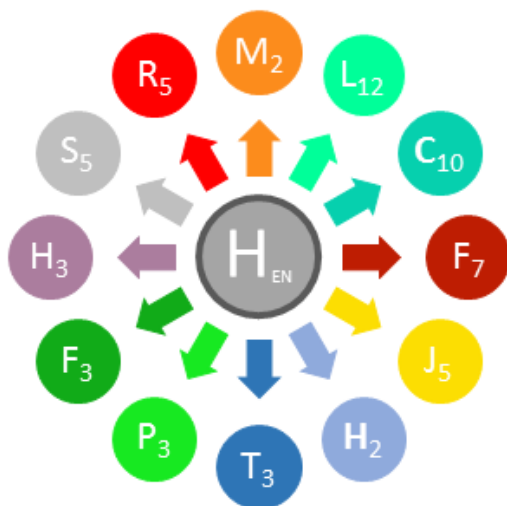
“Every form of courage, whether in *men* or *women*, should be *admired* as much as physical courage is admired in a soldier. ... Courage in war has been recognised from time immemorial as an *important virtue*, and a great many part of the training of boys and young men has been devoted to producing a type of character capable of fearlessness in battle“ (Russell, [1930] 2006, pp. 65-66, 184-185). 3 pts

“The *moral virtues* of temperateness, courage, and justice are acquired through habituation. We become temperate, courageous and just by performing those actions that temperateness, courage, and justice require. What actions temperateness, courage, and justice require we initially learn from others. So characteristically and generally in order to be morally virtuous we need teachers – parents or other adults – who are

themselves virtuous. We cannot have any of the moral virtues adequately unless we also learn to have prudence, the only virtue that is both a *moral* and an intellectual *virtue*“ (MacIntyre, [2009] 2011, pp. 87-88). 3 pts

“... the gifts of faith, hope, and charity, *virtues* that we owe entirely to divine grace ..., *virtues* that are infused in us rather than acquired through habituation. Yet charity is, says Aquinas, the form of all virtues (MacIntyre, [2009] 2011, pp. 97-98). 3 pts

“*Everyone* has the right to liberty and security of person *Everyone* has the right to respect for his private and family life, his home and his correspondence *Everyone* has the right to freedom of thought, conscience and religion ...“ (UK, 1998, pp. 22-24). 5 pts



Read clockwise:

- M - mercy
- L – **love***
- C – **courage**
- F – **freedom***
- J – **justice**
- H – honesty
- T – temperance
- P – prudence
- F – **faith**
- H – **hope**
- S – safety
- R - respect

Fig. 1 A sample map of concepts of moral values, based on an English language corpus.

Polish panel:

“Co bez przyjaciół za *żywor*? Więzienie, W którym niesmaczne żadne dobre mienie. Bo jeśli się co przeciw myśli stanie, Już jako możesz, sam przechowaj, panie! Nikt nie poradzi, nikt nie pożałuje; Takżeć, jeśli się dobrze posażnucje, Żaden się z tobą nie będzie radował, Sam sobie będziesz w komorze smakował. Co ludzi widzisz, wszystko podejrzani, W oczy cię chwali, a na stronie gani. Nie słyszysz prawdy, nie słyszysz przestrogi, Być wierę miały urósć na łbie rogi. Uchowaj *Boże* takiego *żywota*, *Daj* raczej miłość, a chocia mniej złota!“ (Kochanowski, [1584] 2016, p. 23). 2 pts

„I to jest najpierwszy wstęp ku leczeniu wszelkiej niemocy, skromne a mierne postanowienie życia. Krótko mówiąc, ta jedna cnota wszystkim innym drogę ściele: tak rozum ludzki i umysł sprawuje, że się na nim wszelka pocziwa nauka, wszelka cnota łatwie przyjąć może, ku czemu wszystkiemu pijaństwo a zbytek nam drogę zamykają. ... A jeżeli mierność (na co mi każdy pozwoli) *cnotą* nazwać musim, na cię samego się puszczać, abys pijaństwu słuszne a przystojne przezwisko samże znalazł“ (Kochanowski, [1589] 1835 p. 180). 2 pts

„Przypisywanie komuś cierpienia, którego doznalibyśmy na jego miejscu sami, jest źródłem wielu godnych pożałowania omyłek, ale jest też jedynym źródłem współczucia, bez którego nie ma prawdziwego *człowieczeństwa*“ (Dąbrowska, [1933] 1999, p. 587). 2 pts

„Naród i tylko naród nie powinien być hasłem człowieka przyszłości, ale niedopległość narodu musi być *hasłem każdego człowieka wszystkich czasów*, o ile nie czuje się trupem“ (Dąbrowska, [1933] 1999, p. 620). 2 pts

„[J]ak się okazuje – dyskrecja jest *istotnym składnikiem moralności*. Bez niej wszystko staje się trywialne“ (Dąbrowska, [1965] 2009, p. 187). 2 pts

„*Człowiek* nie może być zostawiony sam sobie i sam dla siebie. Musi kogoś lub coś kochać, dla kogoś lub czegoś się poświęcać, itd. Dążenie to jest tak silne, że nierzadko zwycięża nad instynktem zachowania życia, na co niemało dowodów było na przestrzeni historii“ (Kępiński, [1972] 2012, p. 253). 3 pts

„Nadzieja jest zasadniczym *warunkiem kontynuacji życia*; od niej zależy spełnienie zarówno pierwszego, jak i drugiego prawa biologicznego, a u *człowieka* od niej też zależy rozwój kultury. ... Postawy optymistyczna i pesymistyczna określają ilościową różnicę w nasileniu nadziei“ (Kępiński, [1977] 2012, p. 184). 3 pts

„Nie jest to oskarżenie w stosunku do psychiatrów, ale zwrócenie uwagi ... jak głęboko w naturze ludzkiej tkwi lęk przed zaburzeniem psychicznym. Lęk ten może być maskowany nadmierną opiekuńczością, dyskretną pogardą i lekceważeniem, przesadną tolerancją, która pozbawia chorego wszelkiej odpowiedzialności, a przecież odpowiedzialność jest właśnie cechą świadczącą o *ludzkiej godności*“ (Kępiński, [1977] 2012, p. 305). 3 pts

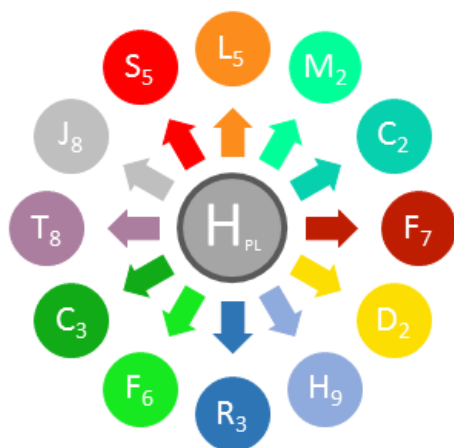
Człowiek, który jest w ekstazie, w wyjściu z siebie, który traci siebie po to, aby zyskać siebie, ten człowiek wyzwała z siebie trzy stany: wiary, nadziei i męstwa. I dzięki tym stanom odzyskuje siebie. Bo *jest się naprawdę człowiekiem* tylko dzięki

wierze w coś, tylko dzięki nadziei i tylko dzięki odwadze“ (Tischner, [1966] 2011, p. 31). 3 pts

“Źródłowym doświadczeniem dla ludzkiej samowiedzy etycznej jest doświadczenie drugiego człowieka W nim znajdują fundament *podstawowe wartości etyczne: prawda, sprawiedliwość, wierność*, itd.“ (Tischner, [1982] 2011, p. 399). 3 pts

„człowiek jest w nadziei częściej tym, który słucha, niż tym, który mówi. Jego istnienie to bezustanne uleganie jakiejś nadziei. Losem *człowieka* jest: dać się pokonać nadziei. Ginie ten, kto przestaje jej ulegać“ (Tischner, [1992] 2014, pp. 280-281). 3 pts

„... my, Naród Polski – wszyscy obywatele Rzeczypospolitej, zarówno wierzący w Boga będącego źródłem prawdy, sprawiedliwości, dobra i piękna, jak i nie podzielający tej wiary, a *te uniwersalne wartości* wywodzący z innych źródeł, równi w prawach i w powinnościach wobec dobra wspólnego – Polski, wdzięczni naszym przodkom za ich pracę, za walkę o niepodległość... ustanawiamy Konstytucję Rzeczypospolitej Polskiej jako prawa podstawowe Wszystkich, którzy dla dobra Trzeciej Rzeczypospolitej tę Konstytucję będą stosowali, wzywamy, aby czynili to, dbając o zachowanie przyrodzonej *godności człowieka*, jego prawa do wolności i obowiązku solidarności z innymi, a poszanowanie tych zasad mieli za niewzruszoną podstawę Rzeczypospolitej Polskiej“ (RP, 1997, p. 1). 5 pts



Read clockwise:

- L – **love**
- M – moderation
- C – compassion
- F – **freedom**
- D – discretion
- H – **hope**
- R – responsibility
- F – **faith**
- C – **courage**
- T – truth
- J – **justice**
- S - solidarity

Fig. 2 A sample map of concepts of moral values, based on a Polish language corpus.

The sample data of 2 language corpora (English and Polish) have been selected symmetrically. The map of English moral concepts (Fig. 1) shows the central concept

H (*humanity*) surrounded by 12 satellite concepts reinforcing it. The resultant map is based on 12 quotation samples extracted from documents created in English by 6 different authors, the documents corresponding to different levels of the established priority list of documents, namely normative documents, ethical literature and high literature. The documents analysed come from different time periods. The high literature sources come from late Renaissance and early 20th century; the literature in the remit of ethics has been represented by sources from the period of early 20th century to most recent times; likewise, the normative document analysed was published for the first time in 1998 and is legally binding. The map of Polish moral concepts (Fig. 2) presents the key concept H (*humanity*) with 12 satellite concepts supporting it. 12 quotation samples have been extracted for further analyses from works created in Polish by 6 different authors. These sources include high literature samples, coming from late Renaissance and 20th century, works on ethics, represented by sources from the second half of the 20th century, and a normative document, published in 1997, and still in force.

The presented conceptual maps constitute a summary of preliminary research within 2 language panels. With all limitations related to samples, the preliminary findings indicate the possibility of common ground between 2 language cultures, while shedding some light on cultural differences. The samples of the English language corpus accentuate *love*, *courage* and *freedom*, with only a little less attention paid to the concepts of *justice*, *safety* and *respect*, the least prominent concepts in the samples including *temperance*, *prudence*, *faith*, *hope*, *mercy*, and *honesty*. The analysed samples of the Polish language corpus draw special attention to *hope*, *truth*, *justice*, *freedom* and *faith*, with *love* and *solidarity* receiving moderate recognition, with the least weight attached to the concepts of *responsibility*, *courage*, *discretion*, *moderation* and *compassion*. Contrasting the conceptual data by superimposing the map of English moral concepts onto the Polish map can provide more clarity than a simple description. However incomplete the sample data may be, the contrastive method can be seen as a test of terminological activities related to harmonization while presenting preliminary findings on similarities and differences in moral concepts encoded in 2 European languages.

A contrastive analysis has led to matching 6 out of 12 moral concept markers in English (EN) with their conceptual counterparts in Polish (PL), while 2 concepts on the English map and 2 conceptual objects on the Polish map have been identified as a near match, which necessitates further inquiry. The 6 concepts identified as analogous ('shared') include: *love*, *freedom*, *hope*, *faith*, *courage* and *justice*. The dubious pairs which need further research include: *temperance* – *moderation*, and *honesty* – *truth*. The remaining 4 conceptual objects on each map can be considered as markers of separate concepts, although with more language data this interpretation might change. The English concepts which have failed to find their conceptual counterparts in PL include: *mercy*, *prudence*, *safety* and *respect*, whereas the Polish concepts which have not found their conceptual equivalents in EN include: *solidarity*, *responsibility*, *discretion*, and

compassion. The following table (Tab. 1.) shows results of contrasting the concept models, created by analysing selected samples of sources which represent 2 major European languages. The table indicates which concepts found so far can be seen as analogous, and which of them can (at this stage) be viewed as specific to one language.

Tab. 1 Sample results of contrasting 2 conceptual maps of moral values, English and Polish.

Concepts of moral values	English language culture	Polish language culture
<i>Compassion</i>		✓ (2)
<i>Courage</i>	✓ (10)	✓ (3)
<i>Discretion</i>		✓ (2)
<i>Faith</i>	✓ (3)	✓ (6)
<i>Freedom</i>	✓ (7)	✓ (7)
<i>Hope</i>	✓ (3)	✓ (9)
<i>Justice</i>	✓ (5)	✓ (8)
<i>Love</i>	✓ (12)	✓ (5)
<i>Mercy</i>	✓ (2)	
<i>Prudence</i>	✓ (3)	
<i>Respect</i>	✓ (5)	
<i>Responsibility</i>		✓ (3)
<i>Safety</i>	✓ (5)	
<i>Solidarity</i>		✓ (5)
<i>Temperance</i>	✓ (3)	✓ (2)
<i>Truth</i>	✓ (2)	✓ (8)

The table (Tab. 1) presents concepts ordered alphabetically. The 6 concepts found to be analogous in the English and Polish moral systems, i.e. *courage*, *faith*, *freedom*, *hope*, *justice*, and *love*, can at this preliminary stage be treated as the conceptual core of the cultures under study. While a decision to qualify concepts of 2 language cultures, which appear to be near (partial) equivalents, as ‘shared’ must be regarded as hasty, as more language data will be needed to learn about their relationships’ character, these dubious pairs (*temperance – moderation*, and *honesty – truth*) have been presented as ‘shared’ for the sake of example. In this case only one of the terms has been used, namely the one which appears to be broader and better established than its assumed (translated) equivalent. Gaps have been provided to illustrate that a given concept represented in one language culture has not yet been represented in the corpus of that language culture with which the former has been contrasted. The numbers in parentheses represent the

sum of weight points ascribed to a concrete concept based on the type of document in which this conceptual object has been marked. This table (Tab. 1), together with the figures (Fig. 1, Fig. 2) are schematised presentations of the results of a fairly new approach within terminological sciences (culture based terminology), and as such need evaluation.

4 Discussion of experimental method and diagnostic results

Terminology, like other sciences, can be seen as knowledge in process. This pilot study, part of a large-scale blueprint, has provided evidence to bear out major assumptions while revealing some inconsistencies. The terminological method proposed for investigating the subject of moral values has been subject to verification based on a simulation of operations involved in the project. The following findings have enabled researchers to concretize the method of building a conceptual map of values, restricted in scope to major European languages. These findings can be grouped under such broad themes as: 1. building a categorized corpus of sources; 2. choice of concepts, term extraction and unification in language panels; 3. (inter-language) harmonization of candidate terms, with term clusters seen as an introduction to procedures linked with the process of defining (Rey, 2000, pp. 1-2). The observations subsumed under these themes are expected to make an impact on the project's development. The effects of this pilot research offer insights into the feasibility of the project, while enabling analysts to test study procedures prior to conducting a large-scale study in order to improve the outcome of the project as a whole.

While building a categorized corpus of sources, matters concerning the choice of documents are of special importance. Several analysts (from the Latin language panel, the German language panel, and the Spanish language panel) have reported the need to put on the reading lists mystical texts citing these works' influence on philosophical thought, particularly in the subject of moral values (Russell, [1917] 1981; DiSalvo, 1993, p. 1148; Tatarkiewicz, 2005, pp. 197-198). By reason of the significant imprint these documents have been making on ethics or related fields (Filek, 2010, p. 66) a decision has been made to include mystical works in the category of professional literature. This gives rise to analyzing in this study works created by such mystics as Gertrud von Helfta (Latin), Mechthild von Magdeburg (German), Juan de la Cruz (Spanish), Faustyna Kowalska (Polish), *etc.* By the same token, the category of professional literature could encompass sources authored by representatives of human oriented fields related to ethics, *i.a.* social anthropology, moral theology, psychiatry, *etc.* Such an inclusive attitude to the selection of documents can find justification in the substance of research provided by numerous disciplines. While ethics is regarded as key to the subject of values, the related fields can be seen as providers of valuable insights on ethical theories.

The classification of sources according to their durability and to their epistemic value appears in need of further specification in respect of possible conflicts between

the pre-established categories. A potential conflict of this type has been observed in the English panel when studying the works of Bertrand Russell. The philosopher's essays and treatises have been rightly qualified as professional literature documents, where each quote on moral values is considered to have the weight of 3 points. Interestingly, in 1959 the philosopher gave an interview for the BBC, in which he shared his views on moral issues. A discussion in the English panel has been initiated to establish whether such an interview (Russell, 1959) ought to be considered as an ephemeral source, where a quote would be worth 1 point, or as a source influenced by the authority of the philosopher, who used this interview to present most important conclusions from his lifelong research in the subject of ethics, in which case such a quote would be worth 3 points. With recorded interviews still regarded as data less recoverable and capacious than written sources, a consistent attitude in which quotes from an interview are worth 1 point each seems the most appropriate. One difference between an essay or treatise and an interview or lecture is that the former offer space for substance and justification, while the format of the latter allows a cursory treatment of the subject.

Limiting material proposed for terminological analysis can be viewed as another point which needs specification. The choice of documents produced in a European language outside of the European continent has been limited by number, with up to 10% of such documents being acceptable in each language panel. In order to make the results in this respect even more reliable, preference should be given to those foreign documents which have been consulted with and sanctioned by a European academic institution, or a European school of secondary education, whose decisions comply with regulations of national educational authorities. This treatment should also concern sources from supplementary lists. In simple terms, with such a modification, the sources from the categories of normative documents and reference works must still be published in Europe, while the sources from the categories of professional literature, high literature, and the group of sources of lesser impact, can include a maximum of 10% of documents from outside Europe, provided that these have been sanctioned by a European institution of learning or a high school system at a national level, with the regulation also valid for supplementary resources in the relevant categories. The specification of the choice of 'foreign' sources may enhance the reliability of results brought by the current project.

The work on concrete resources has enabled consideration of the number of quotes ascribed to one author. For all the effort made so far to ensure high validity of results through a balanced number of sources, large generalizations have still allowed cases where prolific writers could dominate those who have been less prolific but more concrete. Such a case has been observed in the Polish panel and in the English panel. Hence, a decision on limiting the number of works by one author has been made, with a maximum of 10 works per author accepted in this study, each work producing up to 5 quotes and a single virtue exposed in a document once only. To be more precise, when quoting an author, concept markers referring to the same moral value may not be

repeated when they come from the same source, but they may be repeated in another source of the same author, albeit not more than 3 times. Examples come from the English corpus, in which John Galsworthy's 2 quotes highlight the concept of *courage*, and from the Polish corpus, in which Józef Tischner's 2 quotes expose the concept of *hope*. In either of these cases the duplication of concepts has been accepted, as each quote came from a different source by one author. In this approach, authors are regarded as investigators who can look at the same value from a different perspective.

The procedures of concept selection and term preparation also need to be re-examined and further specified. A regularity has been observed in associating the type of semantic link between relevant concepts with the type of source document in which a pertinent concept marker has been found. In more concrete terms, the subsumption relationship, linking the concept of *morality* and concepts of concrete values, marked by descriptors such as 'love', 'freedom', 'faith', *etc.*, can be considered typical of works authored by ethicists and representatives of related fields, *i.e.* documents in the category 'professional literature'. Notably, in all such documents, the information on moral values has been rendered rather clear. The relationship of intensification has been observed repeatedly when studying documents from the category 'high literature', with poetry receiving in this respect the most attention. In the case of poetry, information on moral values can be regarded as charged with a fair dose of metaphor. These findings can be included in instructions and manuals for those who have joined a language panel recently, and for those who will join a language panel in the future. Manuals can prove especially useful for an analyst who has been unacquainted with the culture oriented terminology and its current area of research.

Concept selection and term extraction are connected with the problem of the acceptable number of terms in the data base. Questions in that respect have come from analysts of many language panels for whom terminology related work, especially work on cultural terms, constitute a new challenge. While the process of identification of concepts and term extraction should not be limited *a priori* by time or by number, with every portion of thematic knowledge considered as continually changing its state, 2 interrelated phenomena can be accepted as valid signals that the compilation procedures ought to be coming to an end. The first (weak) signal is connected with the growth in the number of new concepts marked in the corpus analysed in a language panel. This can be visualized by a line chart in which the curve indicating growth in the number of new concepts over time begins to form a straight line (Leski, 1978, p. 58). The second (strong) signal can be observed when percentage differences between the numbers of occurrences of the target concepts diagnosed in a language corpus begin to stabilize, regardless of the number of new quotes accepted. The solution indicates that the decision of terminating the compilation of cultural (moral) concept markers (terms) does not need to be considered arbitrary.

With term extraction invariably connected with solving dilemmas on the conceptual level, several problems have been reported with respect to similarities discovered

between concepts which have been expressed differently. For example, in the English language panel the expression ‘security of person’ can be equated with the expression of ‘safety’, as professional literature on the subject of ethics confirms that they can be regarded as referring to one concept (Mohan, 2003). With strong support in this regard from the field of ethics, an analyst may choose to accept those expressions which they have identified as synonymous. The same argument can be used to equate the concepts marked as ‘freedom’ and ‘liberty’, as shown in Fig. 1. Notably, research analysts must pay special attention to some individual understandings offered by certain authors. A useful example has been provided by the Polish philosopher Józef Tischner, who remains consistent in seeing the concept of *faith* as derived from, and indeed synonymous with, that of *being faithful* (Tischner, [1986] 2009, pp. 131-132). In this concrete case researchers have had every right to regard the said concepts as synonymous, as shown in Fig. 2. Aware of facts such as this one, analysts should be encouraged to look at target expressions through the prism of an interpretation provided by their author.

In a similar vein, the problem of conceptual similarity, observed between expressions in English and Polish panels, can be seen as linked with these expressions’ positions in the hierarchy of senses. This problem has been solved by creating functional hierarchical microstructures founded on the concept markers analyzed. In the English panel, the concept *charity* has been found to be subsumed under the larger concept of *love* to the extent that in the interpretation of the term ‘charity’, the concept of *loving* is invoked. *Love* can be regarded as a capacious concept, encompassing that of *charity* while at the same time being somehow related to *mercy*. In ethics, broader concepts are said to offer sense to those which are narrower (Tischner, 2008, p. 377), and hence are sometimes used interchangeably. This seems to be the case with quotes analyzed in the Polish language panel. Such expressions as ‘niepodległość’, referring to *independence*, and ‘wolność’, understood as referring to *liberty*, can qualify under the broad categorical term ‘freedom’ (Fig. 2), thus providing key elements for this term’s definition. Even in most obvious cases, consultancy with professional literature ought to be viewed as obligatory to avoid mistakes. Indeed, any findings used in building micro-hierarchies of senses must at this early stage of work be seen as a possibility that needs verification.

Building hierarchical structures, which result from analyses of quotes extracted from corpora of documents provide support for intellectual effort in terminological analyses, as these structures can prove useful in organizing concepts at the macro-structural level and at the level of constructing definitions (Kaplan & Baldauf, 1997, p. 73; Nahir, 2003, p. 434). Such intellectual processes are linked with the process of unification, which assumes etymological filtering. This pilot study has allowed analysts in the English panel to observe that etymological filtering of candidate terms could prove indispensable, with some terms changing their meaning significantly over time. For instance, a quote from Shakespeare’s play *All’s well that ends well* needs to be considered carefully before being accepted. The word ‘honesty’ encountered in the

phrase “the honour of a maid is her name, and no legacy is so rich as honesty” (Shakespeare ([1623] 2016, p. 136), interpreted from the perspective close to that of Shakespeare’s times, implies broad concepts, including *moral purity*, *honour*, *virtue*, *good reputation*, and *good manners*, while also implying *chastity* (Partridge, 2006; Harper, 2016). Today, by contrast, the word will typically be assigned a much narrower meaning, associated with *fair behaviour*, *telling the truth* or *abiding by the law*. In view of the cross-historical character of the study, etymology based filtering remains an essential element of term unification.

While premature harmonization is generally discouraged, as it might lead to the loss of credibility and disregard for consensus, which is key for terminology sciences (Grattidge & Westbrook, 1993), concepts not contrasted during unification performed in language panels can be contrasted in the process of harmonization. Harmonizing moral concepts, understood as finding their equivalents in different languages and contrasting similar elements of the conceptual maps prepared in language panels to find common ground, should be implemented after the work in language panels has come to a close, *i.e.* once the growth in the number of new concepts and percentage differences between the weights of accepted conceptual markers have reached certain stability. Harmonizing concepts encoded in 10 languages will be a time-consuming process which could lead to modifications in the hierarchies of previously established meanings. For example, owing to similarity observed between the English concept *temperance* (‘temperateness’) (Fig. 1) and the Polish concept *moderation* (‘mierność’) (Fig. 2), these units can be harmonized into ‘temperance’ (Tab. 1), a terminological form more recognized in the subject field. Similarly, the English concept of *honesty* (‘honesty’) and the Polish concept of *truth* (‘prawda’) are harmonized in the English language into the term ‘truth’, considered to be broader in scope, and more closely linked with the subject of virtues.

Terminological control must be applied throughout the project. Preliminary acceptance of terms can be seen as reliant on the literary warrant, user warrant, and organisational warrant, (Hulme, 1911, pp. 446-448; Svenonius, 2003, p. 824, Harping, 2010, p. 141). The subject of ethics lies at the heart of all human decision making activities (Krapiec, 2000, p. 91), with moral values representing most probably the highest phylogenetic form of order while constituting one of the most complex fields of investigation (Kepiński, [1977] 2012, p. 27, 186, 255). Since all language panels except Greek and Latin (these regarded as the traditional languages of ethics) have reported problems in qualifying concepts, consultations with ethicists can be recommended from the onset of analyzing sources in language panels, with every analyst seeking expert advice whenever such a need appears. Another aspect of terminological control concerns clustering of concepts, a process typical of developed professional fields. For instance, the lexicon of *tea production* is divided into 6 main thematic areas (*black tea*, *green tea*, *oolong*, *pu-erh*, *yellow tea*, and *white tea*). Preliminary examination of sources on values has confirmed similar efforts on the part of ethicists, who speak about

‘cardinal virtues’ and ‘theological virtues’ (Porter, 2007, pp. 210-216). However, given the scope of this study, a decision to subsume at such an early stage all ethical terms under these 2 categories would be premature.

With all due reservations regarding the use of samples, and no claims to exhaustiveness made, the cross-historical research based on 2 European language cultures, English and Polish, demonstrates that conceptual gaps in the resultant map are possible, after monolingual maps have been contrasted (Tab. 1). While the current gaps have most likely resulted from the fact that most source categories in the study are heavily underrepresented, some regularities can be observed in the distribution of concepts in either of the language cultures analysed. 8 terms have been qualified as equivalents, and for 8 concept markers no equivalents have been found. Interestingly, the concept markers without equivalents have enjoyed a low to moderate status in the language culture in which they have been found, the weight of each ranging between 2 and 5 points. This leads to a tentative proposition that if a moral concept marked in a corpus of a European language culture is rare, one can suspect that such a concept might be absent from a European language culture with which the former has been contrasted. Among the concepts found as ‘shared’, the most prominent in the English corpus has so far been the concept *love*, followed by *courage* and *freedom*, while the most prominent in the Polish corpus has as yet been the concept *hope*, followed by *justice* and *truth*. Importantly, despite such facts, any conclusive statements on the results of the project must be considered hasty.

Conclusions

This pilot study has initiated a large scale linguistic enterprise with the aim to build a cultural map of European values. Important in every field of human activity, ordering concepts has for some time been recognized as especially needed in ethics (Popper, 2014, p. 129). The terminological study into languages of morality aims at enhancing communication by assisting ethicists in ordering concepts of European virtues. There might not be a more ambitious and urgent task now that a growing number of moral conflicts are forcing Europeans to redefine the concept of *humanity* to understand what it means to be European. With elements of culture and identity expressible in language, and words capable of representing attitudes (Olszański, 2012, p. 8), the current study can be treated as terminology based contribution to diagnosing European virtues. The study has been conducted to show how to create a conceptual map of values, while treating the current methods as a departure point and introducing changes to the project wherever necessary. This study has led to some general conclusions, which serve practical objectives. These cover not only research methods and technical aspects of creating conceptual maps in the dedicated field, but also preliminary findings on the set of concepts which in 2 European language cultures have been found to be analogous.

From the methodological viewpoint, the subject of research has been recognized as much different from the usual fields of investigation known in terminology sciences.

While linguists have long proposed that research methods in terminology should be adjusted to studying languages in fields propelled by sciences oriented to human cultural and spiritual reality (Zmarzer & Lukszyn, 2007; Gruzca, 2008, p. 71), the field of moral virtues being a prominent example, the terminological research in the conceptual field of ethics has been found to be technically possible. A different approach will be required in empirical data oriented fields, and a different perspective is needed in culture oriented (dogmatic, spiritual, rational) fields, such as ethics. The analytical method based on prioritizing documents, which has been offered to solve the problem of recency, appears to have passed the application test and can be recommended for diagnosing values through European languages, and, by extension, for projects where research is focused less on empirical evidence and more on principled reasoning. The method of studying languages encoding moral values accepts modifications based on evidence to render data contrastable. As terminologists and ethicists constitute a dynamic human factor in this research, the target map of values ought to be treated as an open model of knowledge.

At a technical level, the scope of this study has necessitated a work style involving an Internet based community of participants, their number constantly growing. Terminologists oriented to the field of ethics must take into consideration interpretation factors, which merit recognition in the method of analysis reliant on a quotation base. The method allows interpretations made by authors of works featured in a corpus, while inviting justified interpretations offered by analysts. Term specialists can investigate the subject matter by means of normative interpretation, which strengthens the idea of ethical reasoning as non-arbitrary (Ward, 2004, pp. 32-33). Inconsistencies in relevant procedures have been detected and resolved. Concepts of moral values can be qualified using standardised expressions, with weight indicators showing how deeply rooted in a given culture (English / Polish) the select moral concepts have been. The semantic link that shows directions in analytical work has been specified. Technical problems related to the termination of the procedure of term compilation have been solved, as 2 signals have been identified that indicate to analysts that the procedure should be coming to an end. Conceptual difficulties during unification and harmonization have also been resolved, with instructions and manuals offered to analysts concretized as appropriate.

In practical terms, common ground in the conceptual systems of values in English language culture and in Polish language culture has been found. A half of moral concepts marked in the samples of the English corpus and in the samples of the Polish corpus have been identified as analogous. The diagnosis of 'shared' concepts opens the door to further investigations in the field of ethics and to defining this field's key terms. The findings of this pilot study mark the beginning of a large-scale research into moral systems, expected to contribute to ordering concepts and building a complete map of European values. As exemplified by samples (Tab. 1), concepts of national values will be highlighted and those which will have been found to be analogous (Krapiec, 1995, pp. 157-250) can be seen as useful in promoting European identity, resulting from and

shaped by humans' endless pursuit of the community of consciences (Needleman, 2002; Tischner, 2002, p. 103). The ultimate aim of the project is to create a dictionary of values, in which the position of every term will be motivated by semantic links recognized in ethics. The negotiating character of the study can lead to new discoveries, useful in discussions on current issues. The project aims to present Europeans' understanding of ethics' central concept *humanity* by means of descriptors of concrete moral values.

Labour intensive and time-consuming as the project could prove, its results may have implications on the process of schooling in European nations. While the findings can certainly be of interest to scholars of many disciplines, including students of literature, the main aim of this project remains to assist ethicists in finding unity in the diversity of European attitudes to human dignity. With the study providing know-how confirmed by preliminary findings to diagnose the condition of Europe's moral backbone, the project can lay the groundwork for European school programs, where virtues have always played their part. Schooling in Europe can benefit from taking inspiration from Vedic schools, which did not serve intellect alone, but were focused on eternal values (Guha & Sudha, 2016, pp. 109-110). The current study draws on centuries of investigation and human experience to reveal Europe's moral code, composed of those values which will have been accepted as typical of European nations and viewed as analogous. The (self-)knowledge of what makes a person European promotes order, which can contribute to ending various moral conflicts. The resultant conceptual maps can serve to create a thesaurus of values, most useful in putting together didactic scripts and curricula, and writing structured handbooks of ethics, practicable in value oriented education.

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Role Play as a Method of Improving Communication Skills of Professionals Working with Clients in Institutionalized Care – a Literature Review

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Abstract

Effective communication skills represent a crucial aspect of competence of professionals working in institutionalized care. Quality of communication between professionals and clients has an impact on how the care is delivered, how clients perceive the care and how professionals experience their role. The aim of the present review is to provide an overview of current research on the education interventions aimed at improving communication skills of professionals working with clients in institutionalized care, e.g. nursing homes. Main keywords and phrases (communication, language, education, training, intervention, role play, professionals, institutionalized care) were used to search for relevant papers in the available databases. Studies fulfilling the inclusion criteria were analyzed from the perspective of study design, target sample (social workers, health care professionals, andragogists), applied methods of education, and quality of measures employed to assess the effect. Interventions for effective communication skills development were identified. The study summarizes the main theoretical perspectives, empirically supported intervention approaches and future directions.

Keywords

communication, language, education, training, intervention, role play, professionals, institutionalized care

Introduction

Among many competences important for professionals working in institutionalized care the effective communication skills are crucial to understand and meet the needs of the clients. In the settings where successful communication may be potentially threatened by specific needs or handicaps of the clients, e. g. the elderly, the emphasis on the skills of professionals is even stronger. Quality of the communication between professionals and clients determines the quality of care, not only in terms of everyday interactions concerning the needs of the clients, but also as a source of recognition, understanding and social support (Caris-Verhallen et al., 1998). Quality of the communication may be an important precursor to psychological and physical health (Ryan et al., 1986) and often it is the only opportunity for social interaction of the clients (Williams et al., 2003). However, research shows that institutionalized older adults experience noticeable absence of talk between carers and residents, or among residents only (Grainger, 2004), or the way of communication is inappropriate, e.g. influenced by elderspeak (infantilizing speech), sending messages of dependence, incompetence, and control to the elderly (Williams et al., 2003). As Ryan et al. (1986) state, potential barriers of good communication between staff and elderly clients may relate to declines in some communication abilities in some clients, even when they are healthy, to negative stereotypes about aging and finally to the failure to monitor feedback cues.

Training interventions for professionals working in institutionalized care employ various educational methods. Eggenberger et al. (2012) provide a review of didactic methods used in training of staff for dementia care, e.g. video, discussion, reflection, lecture, exercise, feedback, vignettes, brainstorming. Among them role-play (simulation) is often included, due to its many benefits for adult learning. Role play enables the learner to experience the problems he or she will face in the real world and actively apply the knowledge in simulated situations. The learner has a chance to experience the perspective of both partners in communication – the client and the caregiver – in a safe setting. Successful training has a positive impact on self-confidence of the learner.

The aim of the present study is to review and evaluate evidence in literature concerning role play as a didactic method for improving communication skills of professionals working with elderly clients in institutionalized care.

Methods

The available databases were searched for research studies addressing the main keywords and phrases (communication, language, education, training, intervention, role play, professionals, institutionalized care). Studies published before 1990 were excluded from the search. Reference lists of these studies were also searched for additional references. The search was performed by two independent researchers. Only studies meeting the following criteria were included for further analysis:

- 1) the publication date was between 1990 and 2015

- 2) the study was published in English-language scientific journal (books and conference proceedings were excluded)
- 3) the setting was institutionalized care
- 4) the content of education was aimed at improving communication skills (the studies that verified the effects of training for different competences were excluded)
- 5) the didactic method was role play (role play only or in combination with different didactic methods)
- 6) study provided original quantitative empirical data that examined the effect of training (studies with qualitative methodology were excluded from the review)

Studies fulfilling the inclusion criteria were analyzed from the perspective of study design, target sample (social workers, nurses, health care professionals, andragogists) and quality of measures employed to assess the effect. In the case of studies publishing additional analysis of the same data (Williams et al., 2004; Williams et al., 2005) only the first publication was included (Williams et al., 2003).

Results

Since the aim of the study is very specific and the search was narrow, only 6 empirical studies were identified in available databases. The search also yielded two previous review studies addressing similar purpose as the present study (Kuske et al., 2007; Eggenberger et al., 2012). Basic information about reviewed studies is presented in the table and more details are discussed in the following text.

Table 1 Studies included in the review

Authors (year)	Target population	Intervention	Assessment of the effect	Effect
Ripich et al. (1995)	nursing assistants working with patients with Alzheimer's disease (N = 17) (no control group)	The FOCUSED program – didactic training program – six weekly group sessions 2 hours long (brief lectures, role playing, discussion, videotaped vignette analysis)	pretest and posttest knowledge tests, attitude surveys regarding communication satisfaction	increased knowledge about communication, improved attitudes to the patients, perception of the importance of good communication, the newly gained enthusiasm of professionals, greater "feeling of control" during conversations with clients

<p>McCallion et al. (1999)</p>	<p>nursing assistants working with nursing home residents with moderate and severe dementia (N = 88), residents (N = 105) (experimental and control group)</p>	<p>Nursing Assistant Communication Skills Program (NACSP) – five 45-minute group sessions and four 30-minute individual conferences (education, lecture, role playing – practicing nonverbal and verbal techniques, discussion)</p>	<p>nursing assistants and residents assessed by multiple measures within 2 weeks of intervention, and then again at 3, 6, and 9 months</p>	<p>program has helped professionals to communicate more effectively with clients and to manage residents' behavior problems more effectively, program had a positive impact on residents' symptoms of depression 6 months post-treatment</p>
<p>Lintern et al. (2000)</p>	<p>staff (N=34), residents (N=44) (no control group)</p>	<p>two day training course (interactive discussion, lecture, role play, small group work, exercises, demonstrations)</p>	<p>knowledge tests, attitude surveys, observation</p>	<p>professionals have more person-centered responses, more awareness of the needs of the residents, they use more effective communication strategies, no significant improvement on the average well-being of residents</p>
<p>Burgio et al. (2001)</p>	<p>certified nursing assistants (N = 64), residents with moderate cognitive impairments and intact communication abilities</p>	<p>communication skills training 2 + 1 hour with use of memory books by professionals, active learning techniques including the use of role play, discussion of</p>	<p>certified nursing assistants and residents assessed by multiple outcome measures (administered at baseline, post-</p>	<p>professionals used positive statements more frequently, two months after the intervention more positive verbal interactions between staff and residents were found</p>

	(N = 67) (experimental and control group)	real-life examples from the nursing units, and discussion of written vignettes	intervention and follow up)	
Williams et al. (2003)	certified nursing assistants (N = 20), residents (N = 107) (no control group)	brief intervention for staff to minimize their use of elderspeak in communication with clients - three 1-hour communication classes (lecture, discussion, role play)	transcription and coding of interaction recordings before and after intervention (only staff speech was analyzed, resident responses to communication were not assessed)	after the training professionals have reduced their use of elderspeak, the emotional tone of staff speech with residents was rated as less controlling and more respectful
Williams (2006)	direct care staff including professionals and paraprofessionals (registered nurses, licensed practical nurses, aides, housekeepers, activities staff), (N = 38), residents (N = 344) (no control group)	program of effective communication without elderspeak – three 1-hour educational sessions within a 2-week period (lecture, discussion, role play, critique vignettes)	transcription and coding of interaction recordings immediately and 2 months post-intervention (only staff speech was analyzed, resident responses to communication were not assessed)	immediate post-intervention – less elderspeak, conversations were rated as less controlling, but more respectful and caring, after 2 months, communication was more controlling, less respectful, and less caring

The content of education in training programs was aimed at improving communication skills of professionals working with clients in institutionalized care. The purpose of training programs (the outcome domains) was to increase knowledge and improve communication satisfaction for nursing assistants caring for residents (Ripich et al. 1995), to improve verbal interactions between staff and nursing home residents during care routines (Burgio et al. 2001), to help professionals to communicate more effectively with clients with dementia (McCallion et al. 1999), to increase knowledge about dementia and to optimize interaction aspects between staff and residents in institutionalized care (Lintern et al. 2000). The purpose of training programs was also to increase staff awareness of intergenerational speech modifications such as elderspeak and strategies to enhance communication (Williams et al., 2003; Williams, 2006).

The purpose of the training was achieved by various educational programs and the training sessions included multiple didactic methods, among them role play as a focus of the present study. The employed methods included lectures, role-playing activities designed to simulate everyday patient communication problems and discussion (Ripich et al. 1995), education on the stages of dementia, knowledge about dementia (Lintern et al., 2000), role playing and practicing nonverbal and verbal techniques for fostering interactions with clients with dementia (McCallion et al., 1999; Lintern et al., 2000). Active learning techniques including the use of role play and discussions of real-life examples were emphasized in the study of Burgio et al. (2001). Williams et al. (2003) and Williams (2006) focused on the communication barriers, understanding elderspeak and its potential negative effects on residents, with active learning techniques as a crucial training method. The program included the lecture, group discussions, and role play to practice new skills.

The length of intervention slightly differed in the evaluated studies – six weekly group sessions (Ripich et al. 1995), two day training course for staff (Lintern et al. 2000), five 45-minute group sessions and four 30-minute individual conferences (McCallion et al. 1999), communication skills training 2 + 1 hour with use of memory books (Burgio et al. 2001), three 1-hour educational sessions within a 2-week period (Williams et al., 2003; Williams, 2006). None of the interventions met the characteristics for ongoing long-term intervention.

In most studies the intervention effect was assessed by multiple methods to provide more valid evidence. The study of Ripich et al. (1995) is an exception – the effect of the intervention was assessed by self-report measures (questionnaires) administered in the pretest and posttest phase. The other studies used additional data – observation, interview and questionnaires for both staff and residents (McCallion et al., 1999), observation before and after intervention (Lintern et al. 2000; Burgio et al., 2001). Williams et al. (2003) and Williams (2006) employed audio recordings of staff communicating with residents during routine care as an assessment tool.

Authors of all the reviewed studies reported significant effects of the training. Ripich et al. (1995) identified the newly gained enthusiasm of professionals after the six weekly

group sessions. Before the training they reported frustration and inability to communicate with clients. After the intervention they reflect on the importance of good communication skills for work with clients in institutionalized care and they speak about "feeling of control" during conversations with residents. McCallion et al. (1999) verified the Nursing Assistant Communication Skills Program. They report changes of staff behavior after 6 months in several areas, e.g. more effective communication with residents, the management of residents' behavior problems. The authors also identified decrease in the residents' symptoms of depression. Lintern et al. (2000) found more person-centered responses of professionals after two day training course. They were more aware of the needs of the clients. However, residents did not report any improvement in their well-being. In the study of Burgio et al. (2001) the results include more positive verbal interactions between staff and residents after the intervention. The authors conclude that professionals working with clients in institutionalized care may be trained to use improved communication skills during care interactions with clients. Williams et al. (2003) and Williams (2006) in both studies report that the use of elderspeak in terms of endearment, inappropriate collective pronouns, simplistic vocabulary and shortened sentence length was reduced and communication with clients was less controlling and more respectful. However, the long-term effect of the intervention was not supported by the data.

Discussion

The review provided evidence of effective didactic strategies used in training professionals working with elderly clients. Most studies examining the effects of the training programs that included role play reported significant positive effects. However, since the training programs consist of a package of various methods it is not possible to determine separate contribution of the technique.

The authors of previous reviews of the related topic (Kuske et al., 2007; Eggenberger et al., 2012) commented on methodological weaknesses of the studies. Among the studies reviewed in the present paper only two randomized controlled trials were identified (McCallion et al., 1999; Burgio et al., 2001). The other studies were observational, comparing the scores of the same group before and after intervention with no control group. To achieve convincing evidence more sophisticated experimental designs are needed that address both statistical significance and effect size of the results. On the other side, most studies report data from various measures and various sources of assessment to support the validity of the findings. Outcome data from the clients provide a strong evidence of intervention effect.

Another important issue is related to the long-term effect of the interventions. Communication skills training as a single-dose intervention may fail due to lacking supervision and support. Follow-up assessments should become a standard part of any program effectivity evaluation. There is a need for ongoing trainings to facilitate the development of new skills and maintain the effect of the interventions.

Finally, a rarely addressed aspect of communication concerns the authenticity of the carers in terms of genuine empathy, care and respect. Williams (2006) suggests that brief intervention may not influence all the levels of communication – professionals may be able to self-monitor concrete, conscious forms of the message (what is said), but not the abstract, emotional level of the message that reflects care and respect.

Conclusions

The aim of the study was to review and evaluate evidence in literature concerning role play as a didactic method for improving communication skills of professionals working with elderly clients in institutionalized care. The results suggest that active learning techniques such as role play are effective in improving communication skills of professionals. The challenge for the future research is an integration of active learning strategies and strong methodology to train professional who are able to transfer the knowledge to the practice and interact with the elderly genuinely, with care and respect.

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Use of Student-Produced Videos to Develop Oral Skills in EFL Classrooms

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Abstract

This paper discusses the use of student-produced videos to improve speaking skills in EFL classrooms, with emphasis on their use in preparatory classes at Kocaeli University, School of Foreign languages. The use of student-produced videos as a learning and teaching tool may greatly enhance the quality of students' oral skills in many ways. They have the chance of reviewing their own performances, evaluating their speaking skills and becoming more self-critical of their abilities. The perspectives of using the student-created videos for the development of oral skills in language classrooms are presented.

Keywords

English as a Foreign Language, language class projects, oral skill, student-produced video

1 Introduction

For foreign language learners, the mastery of speaking English is essential nowadays. Consequently, speaking ability is regarded as the measure of knowing a language for many learners and they also define speaking ability as the most important skill in a language. When compared to other skills, speaking can be said to be the most difficult skill to teach and also to evaluate and assess. To overcome those difficulties, teachers need to come up with novel methods to develop learners' speaking abilities.

Using video recordings of students might offer numerous opportunities for the development of learners' speaking skills. There have also been some studies about the effectiveness of using videos as a facilitator in the classroom (Glenn, 1996; Foreman, 1999; Katchen, 1991; Lynch & Maclean, 2003). This study focuses on the perception of the learners about the use of student-produced videos for the development of their

oral skills. The main aim is to better understand why student-produced videos might be used in the classroom to facilitate their oral performance from the eyes of the learners.

2 Literature Review

Nowadays, language teachers use video materials in a variety of ways to address the learning needs of their students. They may easily create their own videos thanks to the technology. Video cameras have also become smaller and lighter. Not only teachers but also students own the most recent cell phones enabling them to record with ease. Why don't language teachers make use of this technological development in their classrooms?

Some researchers have conducted their studies on utilizing video cameras as a teaching tool (Foreman, 1999; Katchen, 1991; Lynch & Maclean, 2003; Murphy & Woo, 1998) and a feedback tool (Glenn, 1996; Tuža, 2013). These studies mainly revolved around the use of video cameras for the purpose of revealing the efficacy of them on learners' oral abilities. For example, Katchen (1991) proposed the use of video cameras as a teaching tool in language classroom so that learners may have the chance of comparing their last performance with the previous ones so that they may learn to criticize their own product. Katchen (1991, p.4) particularly emphasized the use of videos as "teaching tools". Not only learners but also the prospective teachers make use of the recordings. Among the teacher trainees, recording sessions are commonly used in terms of evaluating their performance (Tuža, 2013). Some students also liked performing for themselves and it enhanced the enthusiasm towards the language. Through the use of student-produced videos as a third eye in the EFL classroom, fostering oral skills may become easier. Pertaining to this topic, Glenn (1996, p.3) conducted a research revealing the fact that there are many advantages of using student-produced videos such as "practicing feedback, analyzing-structural content issue, and improving speaking style". It was concluded that use of videotaping greatly enhanced the quality of student presentations in researcher's classes, improved the classroom atmosphere and helped produce positive educational outcomes.

Additionally, there are many other studies indicating the benefits of using student-produced videos. It was suggested that having students produce their own video materials promoted active learning (Schults, et al, 2013). Schults et al, (2013, p. 4) also claimed that Jonassen's research revealed that asking students to create their own videos facilitated the authenticity. Video-production projects created "authentic experiences" (Schults, et al, 2013).

The authenticity of the materials has been always the main debate among the language teachers. Lide and Lide (1986) proposed a theoretical model in which learners played an active role in public places in the target language for creating "authentic camera-produced materials". It was strongly underlined the need of authenticity of video materials in language classroom. A video recording project at Martin Luther King, Jr. High School was applied by Berney & Schla (1989). This project was designed to

use student-produced videotape recordings to help students to learn to speak, read and write English. The findings of the study showed that the project facilitated language learning stimulating student creativity, confidence and motivation. Moreover, Garza (1996, p.18) claimed that the instructors should produce their own video materials in second language instruction. In his study, video material was seen as “a facilitator of communicative performance in a foreign language”.

Among these positive studies, there are as well some studies revealing the fact that some certain negative effects of video-recording might occur in language classrooms (Biegel, 1998; Kinzer, 1985). It is argued that there may be some drawbacks of recording students. Some students do not prefer to be the focus of attention and reject the project while extrovert ones happily involve the activity or task due to the fact that they would enjoy the hands-on tasks or projects.

Kinzer (1985, p.13) included the findings of some researches showing the negative effects of video playback in his study. He mentioned, “Being the focus of attention of both the camera and the class during the performance and the focus of evaluative attention during playback probably increases a feeling of conspicuousness.” In addition, the level of stress may increase towards video playback. On the other hand, Biegel (1998) suggested some ways to overcome those negative sides of video productions such as using cameras more often in the classroom settings and using mostly role-play activities to lessen the fear of being the center of attention. The most effective suggestion was giving the role of director or cinematographer to the extremely shy students who are strongly opposed to the idea of being recorded.

However, most studies explored the benefits of using student-produced videos to enhance speaking skills (Garza, 1996; Glenn, 1996; Katchen, 1991; Schultz et. al, 2013). Although there have been many positive ideas on video-recording projects, we must not neglect the fact that there are some drawbacks in language classrooms. It seems like we are experiencing the glory of the 21st century with the practical uses of smart phones in our pockets on a daily basis. Today language learners are already being accustomed to the smart boards in their classes and virtual lessons are becoming part of their regular education. As language teachers, it is inevitable that any chance to implement technology in the classroom will be used. It can be estimated that the value of student-produced video projects as a teaching and learning tool will rise in the future.

3 Research Questions

Five research questions guided the conduct of the study:

1. What are the attitudes of students about recording videos for their project assignments?
2. What are the possible benefits of using student-generated video recordings in the language classroom?
3. What are the possible limitations of using student-produced video recordings?

4. What are the differences between using traditional and recording projects in terms of students' perspectives?
5. Do the video-recording activities help learners improve their communication skills?

4 Methodology

A Subject

The participants were 20 Turkish-speaking students at Kocaeli University, Turkey, in 2014, undertaking preparatory class courses. They were from different departments (e.g. Electronics and Communication, Politics and Science, Chemistry Engineering, etc.) and they had been learning English in classroom contexts for nine years. Of these students there were 12 females and 8 males with an age range from 18 to 23. All the students took part in the study were volunteer that their identity would be revealed. The research session took place during hours of regular instruction.

B Instruments

This study was conducted by using the original questionnaire that was designed by Yoko Hirata (2009). Hirata (2009) focused on the students' reaction to the projects related to the use of video recording with the help of nine questions (Appendix 1). He developed and used just one questionnaire depending on his studies to get a much better understanding of the use of video recording in the classroom. In this study, learners' perceptions on both traditional and video-based projects were evaluated through administering the questionnaire after implementing each project work.

C Procedure

Students (N=20) were divided into two groups, Group 1 (n=10), Group 2 (n=10). Each group was asked to complete project work as a group. The tasks used in this study were taken from the students' textbook, *New Total English Elementary* by Fiona Gallagher (2011). The experiment consisted of two phases for each group. The first project assignment was "making an interview with a foreign student at their own university about their daily routine" while second assignment was "giving a recipe". Group 1 completed the project traditionally; in this case written work was accepted while second group was expected to record their work as a video. The due date was decided together. They were responsible for their own production process. After all student projects, both written and recorded versions had been completed, the products of the groups were presented in front of the class. Written projects were shared and video recordings were viewed by participating student, and finally feedback was returned to the students. After presenting their works, the questionnaires were administered to both groups. The data obtained from the study were carefully evaluated.

For the second part, the procedure was the same. The only difference was that the group which was treated in a standard way was supposed to complete their work by

recording a video. This time, the written form of the task was expected from the other group. After completing their projects, the related questionnaires were again administered. The data obtained from the study was analyzed.

The in-depth analysis of the data obtained from both procedures was studied in detail. The data was believed to be more profound in that two different groups were exposed to two different treatments and questionnaires were administered. The study was conducted to make a clear distinction between the perception of the learners on the effect of standard and video-recording projects on their oral development. The detailed visual scheme of research design is presented in Table I.

TABLE I
RESEARCH DESIGN

	Time 1	Focus	Time 2	Focus
Group 1	Traditional	Interview	Video	Recipe
Group 2	Video	Interview	Traditional	Recipe

Table 1 Research design

D Analysis

Both post procedure experiences were obtained with the help of questionnaires and descriptive statistics (means) of students' post-project survey scores were computed. The analysis of comparison was performed on the means of each item in the questionnaire to have a clearer understanding of the perception of learners on video-recording in language classrooms.

Total number of participants is 20. Before treatment, participants were divided into two groups; Group 1 (n=10), Group 2 (n=10). After each treatment time, the questionnaire which mainly surveyed the participants' attitudes towards the learning process on the treatment that they received was distributed (Appendix 1). The perceptions of both groups were taken into consideration. One of the most crucial consequent of this study is that there may be a significant improvement occurring due to the treatment and another point is that groups that recorded their own videos believed that they had made a superior gain. The perception of each group on recording videos was examined in detail in the next section of this paper.

E Results and Findings

The purpose of the study was to evaluate the effectiveness of using student-produced videos through the perspectives of 20 students in a preparatory class at Kocaeli

University. The questionnaire results were displayed in terms of means in Table II and Table III which show that the groups that received the treatment have much higher means compared to that of the other groups that did not record their works. This indicates that the students are in favor of recording their own videos in language classroom. The results of the questionnaire revealed the fact that learners are most likely to agree on the strength of the video recording when compared to traditional way of instruction. However, the means were slightly different between two groups. The results, however, have limited value due to the small sample size (20 students).

The majority of the participants agreed that the use of video recording is beneficial in terms of improving their communication skills (both Focus 1-Item 1 and Focus 2-Item 1 means = 4.4), understanding how words and expressions behave in different ways for different situations (both Focus 1-Item 2 and Focus 2-Item 2 means= 4.1), using the target language in a similar international situation in the future (Focus 1-Item 3 mean= 4 and Focus 2-Item 3 mean= 4.2) and understanding different kinds of expressions and words (Focus 1-Item 4 mean= 4.1, Focus 2-Item 4 mean= 4.6).

However, a slight decrease in the means can be seen when asked the learners whether they are confident about communicating in the target language or not (Focus 1-Item 5 mean= 3.9, Focus 2-Item 5 mean= 4.2).

Further, they agreed that they became more aware of logical flow of conversations (Focus 1-Item 6, mean= 4.2, Focus 2-Item 6, mean= 4.5). Most of the learners believe that they benefited from working as a group (Focus 1-Item 7, mean= 4.2, Focus 2-Item 7, mean= 4.7) and comparing their works with the others (both Focus 1-Item 8 and Focus 2-Item 8, mean= 4.7). Last item revealed the fact that the learners believe that the projects requiring learners recording their works were effective in simulating a real conversation in the real world (Focus 1-Item 9, mean= 4.4, Focus 2-Item 9, mean= 4.7).

While, both groups significantly agree on the positive effects of the video recording on their language learning process, groups that are treated in terms of video-recording tasks have a much higher mean compared to that of the groups that are expected to follow traditional ways. This indicates that most of the learners are aware of the value of using their own video recording projects in their learning. It might be suggested that video recording helps learners understand the target language, feel confident in speaking and foster a relaxed atmosphere in the classroom.

Interestingly, these numeric data offered some glimpses into how these participants perceived the use of video recording in the language classrooms. The analysis of the data revealed the fact that participants believe that using student-produced videos are more useful than the ones who use traditional written forms of the tasks. Thus, one can conclude that video recording has a facilitative effect for L2 language learners.

The aim of the first statement (The projects helped me improve my communication skills) was to figure out whether the projects helped the students improve their communication skills or not. As it is seen on Table II (Item1) and Table III (Item1), the comparison of the answers in terms of video-recorded projects and traditional way

shows the fact that learners believe the video-based projects helped them improve their communication skills.

Second statement (The projects helped me understand how words and expressions behave in different ways for different situations) aimed to investigate the efficiency of the projects in terms of understanding the different uses of words and expressions in different situations. In other words, it was intended to explore which of the tasks would be more effective in understanding the usage of expressions and words. For so doing, two groups were compared in terms of traditional way and video-recording way. The analysis for both groups is presented in Table II (Item 2: 4,3-4,1) and Table III (Item 2: 3,7-4,1). It is clear that the mean score for the video-recording group is higher than the mean score for the traditional group.

Third one (The projects will be useful when I use the target language in a similar situation) centered on the effect of the video-recording projects when students use the target language in a similar international situation in the future. According to the results, Table II and Table III, students believe that video recording will be more useful than classical writing task.

When asked the participants to state whether the projects assisted them in understanding the type of expressions and words in different circumstances as the item 4 requires (The projects assisted me in understanding what kinds of expressions and words are usually used by particular people in different situations), the results showed that learners who actively participate in video recording projects are more likely to get a better understanding of the expressions and words used by particular people.

When the means of fifth statement compared (Table II-Table III), it is seen that learners feel much more confident. In Table II, the means of item 5 is 3,7 for traditional way, and 3,9 for video-recording. The same movement is seen in Table III; the means of item 5 is 3, 6 for traditional way, and 4, 2 for video-recording classes. As indicated, learners who are involved in traditional writing task feel more confident about communicating in the target language in that they do not have to speak. Indeed, not surprisingly, they think that video-recording process is somehow challenging.

The other statement (Item 6: I became more aware of logical flow of conversations) revealed the fact that video-recording helps learners become much more aware of the logical flow of the conversations.

Yet, as the results indicated, the means of the item 7 (I benefited from accomplishing my work as a team and collaborating our feelings and ideas) proved that group work and collaboration among the students are extremely important for the participated students.

In terms of evaluation of their work at the end of the activities, both groups agreed that comparing their works are much better way (Item 8: Comparing our works/videos with the others made us evaluate objectively what we accomplish).

TABLE II

FOCUS 1- TRADITIONAL WAY AND VIDEO-RECORDING

	Traditional Way	Video Recording
Item 1	4,3	4,4
Item 2	4,3	4,1
Item 3	3,6	4
Item 4	4	4,1
Item 5	3,7	3,9
Item 6	4,1	4,2
Item 7	4,6	4,2
Item 8	4,3	4,7
Item 9	4,2	4,4

Comparison of means of scores

Table 2 Focus 1 – Traditional Way and Video-recording

TABLE III

FOCUS 2- TRADITIONAL WAY AND VIDEO-RECORDING

	Traditional Way	Video Recording
Item 1	3,9	4,4
Item 2	3,7	4,1
Item 3	3,3	4,2
Item 4	4	4,6
Item 5	3,6	4,2
Item 6	3,7	4,5
Item 7	4,3	4,7
Item 8	4,2	4,7
Item 9	3,8	4,7

Comparison of means of scores

Table 3 Focus 2 – Traditional Way and Video-recording

The last item (Item 9: The projects were effective in simulating a real conversation in the real world) revealed the fact that both groups who had treatment agree on the role of videos in simulating real-world conversations.

5 Discussion

There have been many studies on the use of videos in the classroom so far. They all conclude that using videos are much useful in terms of increasing the awareness of the learners towards the real use of the target language. This study shows that the groups who record their own works believe that using student-produced videos in the language classroom is more beneficial than using traditional way of completing a task or a project.

Learners are also believed to evaluate their own performances through videos (Katchen,1991) and Item 9 in Table II and Table III proves Johanna Katchen's idea in that all learners highly agree that they may evaluate themselves objectively through videos rather than classical writing out tasks. Glenn (1996) claims that videos help improve language learners' speaking style. The means of Item 4 and item 6 clearly show that learners believe that video-recordings are beneficial in terms of their speaking abilities (Table II and Table III).

Video projects facilitate language learning and learners become active participants in EFL classrooms (Schultz, et al, 2013), Table II and Table III indicate that the participants who recorded their works strongly agree that they are more capable of speaking in the target language than the participants who write their work out.

Learners think that video-recording enables them to communicate easily in a similar situation in the future. There are also some researches indicating the videos are "authentic experiences (Jonassen et al.,2003, cited in Schults, et al., 2013).

When compared to other studies, this study might be a good proof of using student-generated videos enhances language learners' oral skills, knowledge on language, and evaluation chances from the eyes of the learners. On the other hand, due to the limitation of this study, further research with extended samples would be helpful in deciding the efficacy of student-produced videos in language classrooms.

Conclusion

The main aim of this exploratory study was to examine how students assessed the efficiency of using student-produced video projects on the development of their oral skills. Focus was on learners' attitudes during and after the procedure on whether video-recording would help learners in foreign language learning process. Furthermore, the study compared the traditional way and recording-video sessions. Therefore, Hirata's (2009) questionnaire was administered to the students to better understand the difference between the effectiveness of traditional way and recording videos.

From the scope of the study, it can be stated that teachers should make use of video recordings as much as possible. According to the survey findings, higher means of some items indicate that learners are mostly aware of the value of using videos as a learning

tool to develop their communicative needs. Using student-produced videos appeared to be more effective than traditional way.

Besides, learners' attention should be increased towards some areas. For instance, results indicated that they don't believe that using videos is effective in helping them acquire related vocabulary. Because they are not fully aware of the impact of videos in their learning process in English, they may underestimate the value of recording videos.

As can be seen from Table II, participants think that traditional way of studying a dialogue is nearly as effective as video recording in improving learners' knowledge on words, communication skills and simulating a conversation in the real world (Table II; Item 1-Item 2-Item 9). However, recording dialogues is believed to be more effective than traditionally writing out the task in that it improves learners' in-depth knowledge on language such as being aware of logical flow of conversations and simulating a real conversation (Table III; Item 6 and Item 9). Video recording seems to be better in changing learners' attitudes towards their ability to speak in a foreign language (Table III; Item 1 and Item 5). These results suggest that the participants who received the treatment were strongly agreed that they are more capable of speaking in the target language than the participants who did not receive the treatment (Table II and Table III, Item 3 and Item 5).

Under the light of these findings, it might be inferred that using videos for the development of oral skills is believed to be much more effective in comparison to the traditional writing tasks due to the communicative, authentic, purposeful and meaningful elements of the task. Besides, this study may shed light on the efficiency of using student-produced videos in language classrooms to increase their awareness towards real language use. Yet, there is still a demand to conduct a study with a larger sample to gain a better understanding on this issue.

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Error Analysis in EFL Classroom of Lower Secondary Students

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Abstract

This paper attempts to introduce current perspective on EFL students of lower secondary level in terms of speech fluency. The major objective of this study is to investigate errors in the speech of students from eleven to twelve years old. This research seeks to address the question of analysing errors in order to explore particular aspects of EFL in the initial phase of Slovak cultural context. Based on the theory of behaviourism that tackles the issue of learning as a habit, the paper deals with the possible influence of perception of abstract concepts in Slovak cultural environment on EFL learning. Furthermore, the paper examines the potential causes of errors or undue hesitation which occur in the students' speech. A combination of quantitative and qualitative approaches was used in the data analysis. The study was conducted in the form of an interview between an interlocutor and a student with data being gathered via audio-recordings which have been transcribed and analysed. It attempts to list possible areas which might be taken into consideration and adapt the EFL curriculum in the initial phase of English language learners in Slovak cultural context.

Keywords

speech, error analysis, error, lower secondary student, question, EFL

Introduction

In the history of learning and teaching English as a foreign language, error analysis has become one of the central issues in facilitating educational process, as this issue may be beneficial not only for teachers but also for students. In addition, error analysis is at the heart of our understanding of potential causes and influences of errors and

consequently, it might be considered as a powerful tool to eliminate errors in learning EFL.

Throughout this paper, the term error analysis will occur frequently. Crystal (2003, p. 165) defines error analysis in language teaching and learning as the technique of identifying, classifying and systematically interpreting the unacceptable forms produced by someone learning a language, especially a foreign language using an of the principles and procedures provided by linguists.” Some writers (e.g. Ellis, 1996) have attempted to draw fine distinctions between the term “error” and the term “mistake”. According to Ellis (*ibid.*) an “error” is defined as a deviation in learner language resulting from the lack of knowledge of the correct rule, however, a “mistake” is described as a deviation in learner language that occurs when learners fail to perform their competence. It is a lapse that reflects processing problems. Similarly, Yuksel (2007) emphasizes that mistakes are not a result of deficiency in competence.

Recently, questions concerning error analysis have been addressed by researchers in many fields. Much of the foreign available literature on EFL deals with the question of error analysis and its role inside the EFL classroom, for instance, Abushihab, (2014); Al-Buainain, (2011); Ananda – Gani – Sahardin, (2014); Bada, (2001); Darus – Subramaniam, (2009); Edge, (1989); Hanafi, (2015); Harmer, (1987); Hatch, (2017); Heydari – Bagheri, (2012); Hopkinson, (2007); Hsu, (2013); Hussain – Hanif – Asif – Rehman, (2013); Jobeen – Kazemian – Shahbaz, (2015); Long, (2007); Mourssi, A, (2015); Phuket – Othman, (2015); Presada – Badea, (2014); Richards, (2015); Sawalmeh, (2013); Sukasame – Kantho – Narrot, (2014); Sun, (2016); Therrien, (2004); Thomas, (2014); Vásquez, (2008) and others.

One major theoretical issue that has dominated the field for many years concerns the issue of error analysis in the written discourse. A considerable amount of authors, for example, Abushihab, (2014); Al-Buainain, (2011); Ananda – Gani – Sahardin, (2014); Darus – Subramaniam, (2009); Hussain – Hanif – Asif – Rehman, (2013); Phuket – Othman, (2015); Sawalmeh, (2013) paid particular attention to the description of errors in writing, their causes, influences and sources. Taken together, the results of these studies suggest a number of recommendations for further research but also pedagogical implications which might be beneficial for EFL, offering teaching strategies that would reduce future problems regarding, for instance, writing English essays among EFL learners.

Some authors have mainly been interested in questions concerning error analysis and language interference. In 1982, Flores published a book in which she described the meaning of language interference. Moreover, her research conducted on Hispanic students revealed two implicit paradigms: the languages as habit formation and the languages in contact. According to Flores, the wide acceptance of the habit formation theory defined interference as differences taking place between two languages that cause difficulty and interference. In 2007, Hopkinson published a paper in which he

described factors in linguistic interference. In recent years, researchers have investigated a variety of approaches to language interference and most importantly, errors in EFL that might have been caused by the language interference, e. g.: Antoniou – Tyler – Kroos, (2011); Bloem – La Heij, (2003); Festman – Rodriguez-Fornells – Münte, (2010); Hermans – Bongaerts – De Bot – Schreuder, (1998); Kaushanskaya – Marian, (2009); Mourssi, (2015).

Having defined foreign researchers from the field related to error analysis, it is inevitable to mention authors from Slovak cultural context. In 2005, Chamonikolasová and Stašková highlighted the difficulties facing native speakers of Czech and Slovak in learning EFL: “Other factors influencing foreign language acquisition are differences in the grammatical and lexical systems of the target language and the learner’s native language, cultural differences (...)” (Chamonikolasová – Stašková, 2005, p. 53). Therefore, it is important to remind that non-native cultural context may have a significant impact on errors in learning EFL.

This paper has been divided into seven parts. The first part deals with the introduction of error analysis and theoretical background. The second part is devoted to the background of the research. The third part analyses in detail research methodology, which is followed by data analysis, discussion, limitations and conclusion.

Background of the Research

This project provides an important opportunity to advance the understanding of error analysis in the speech of lower secondary level pupils. Therefore, this study makes a major contribution to research on error analysis by demonstrating various types of errors as well as the background of these errors. Furthermore, the study offers some important insights into the possible causes of errors and suggestions which could help eliminate them. Based on this fluency and accuracy may improve.

The research has been conducted at three primary schools in Presov, Slovakia: Bajkalská, Československej armády and Kúpeľná. The process of data collection began in September 2016 and is still in progress as the research is part of an ongoing project. This project aims to investigate the influence of the time devoted to reading on EFL fluency and accuracy. Numerous research (Therrien, W. J., 2004; Lo Y. – Cooke, N. L. – Peirce Starling A. L., 2011; Meyer, M. S. – Felton, R. H., 1999) has highlighted the existing relationship between reading and other language skills. Based on the result of the research it may be assumed that the amount of regular reading has a positive effect on fluency and accuracy of English language learners. Therefore, the project incorporates a reading programme into the curriculum of the schools which have been participating in the project research. The objective is to compare the level of English of the students in the pre-phase before the incorporation of the reading programme into the curriculum with their level after the reading programme is completed. In the schools mentioned, English language is taught from the age of six. Both qualitative and

quantitative methods have been used in this investigation. The number of students in the research has reached 142 and the participants were divided into two categories: an experimental and a control group. The covered areas consist of two parts: speaking and grammar tests which have been chosen in accordance with the level of English the students are expected to be at. Apart from that the greatest emphasis is put on students' production of linguistic formulations, work with information, reading literacy and the ability to provide arguments. Moreover, it is emphasised that language itself could be understood as a tool of thought and communication among people and this should be reflected in the intentional development of communicative competence (National Institute for Education, ISCED 2, 2015). This term was coined by Dell Hymes (1966) as reaction to Noam Chomsky's notion of "linguistic competence" in 1965. According to Hymes, language should not be used only correctly, but also appropriately. In his concept Hymes provides four components of language competence (linguistic, sociolinguistic, discourse and strategic competence).

Research Methodology

A combination of quantitative and qualitative approaches was used in the data analysis. The partial research was conducted on the sample of twenty students from Primary School Československej armády. This research is only a part of the research project VEGA. The study was conducted in the form of an interview between an interlocutor and a student with data being gathered via audio-recordings which have been transcribed and analysed. In the interview the students were asked various types of questions divided into two categories – general questions and personal question, e.g.:

a) General questions

1. What is your name?
2. What can you see in the picture?
3. What is the woman wearing?
4. What is the man doing?
5. What is the lady doing?
6. What is the boy doing?
7. Where is the lady standing?
8. Where is the snake?
9. Where is the tiger?
10. How many birds are there in the picture?
11. How many bags are there?
12. How many animals are there?
13. What colour is the train?

14. What colour is the cat?
15. What do you think can be in this suitcase?

b) Personal questions

1. Who is your best friend?
2. When is your birthday?
3. What do you do in the morning?
4. What do you do after school or in your free time?
5. When do you watch TV and what do you watch?
6. What subjects do you like at school?
7. What do you do at the weekend or in your free time?
8. What do you like about your English class/school?
9. What is the best thing about school?
10. What can you see from your bedroom window?

During the interview, each of the respondents was asked ten open-ended questions. The interview lasted approximately ten minutes each and took place in the primary schools the students attend. The well-known environment enabled students to feel comfortable and relaxed. The respondents attended the interview one by one whereas the rest of the students were waiting in the appointed classroom. During the waiting time the students provided verbal feedback to two of the assistants. The aim of the verbal feedback was to gain in-depth information about the current state of the students (e.g. their expectations, fears, the content of the interview et cetera). In order to support the natural flow of the conversation, the students were provided with different kinds of activities to lower the stress level and encourage their speaking skills. The activities included: vocabulary games, energizers, warm-up activities, ice-breakers, informal conversation etc. In the section below, the verbal feedback from the students regarding their attitude towards the interview is provided.

“I don't know what to expect.”

“What if I get embarrassed?”

“Is it going to be difficult?”

“I am scared.”

“I am not scared at all.”

“How long is it going to take?”

“Are we going to get grades of this?”

“How many people are there in the classroom?”

“Who is inside the classroom?”

“What are they going to ask us?”

The audio-recordings were transcribed according to the transcriptional rules that are explained in detail in Table 1. One line represents one utterance, there are no commas within the utterances and a new sentence starts with a small letter.

Table 1 Sign description

SIGN	SIGN CHARACTERISTICS
//	long pause
.	end of the sentence
...	unfinished utterance
?	question mark
!	exclamation mark (command, exclamation)
@	hesitation sound
xxx	incomprehensible utterances
traï(n)	ending of a word in brackets – we are sure it is a train
[=! laughter]	non-verbal communication (participants laugh)
[=! sigh]	non-verbal communication (participants sigh)

Based on the analysis of the transcripts a typology of errors was formulated. The typology contains three categories which are the following: transfer from the mother tongue, lack of knowledge and one category with specific types of errors. On the basis of the detailed error analysis and in-depth discussion the particular errors were classified into three categories.

Data Analysis

The study analyses data obtained from interviews with students in order to gain insights into the possible causes of the errors students make and, thus, explore the subsurface of the Slovak cultural context and its effect on speech fluency and accuracy. Based on the analysis of the transcripts, different types of errors occurred. These have been distinguished into three main categories: vocabulary, grammar and speech fluency according to the specific area the errors belong to. Vocabulary errors have been divided into three subcategories: missing letters in words, redundant letters in words and an

incorrect use of words. In the analysis, the emphasis is put on the most frequent error types as well as the error types caused by language transfer. In the process of analysing the errors we took into consideration CEFR document (The Common European Framework of Reference for Languages: Learning, Teaching, Assessment, 2013) which identifies what foreign language students of A1 level are expected to know.

The most frequent set of errors occurred in the third subcategory - an incorrect use of words. To present an example, we provide a short excerpt from the transcripts, e.g.:

An incorrect use of words

- a) T: @ so there are some suitcases.
 T: so what do you think what is in the suitcase?
 T: what did she put in?
 T: what did she pack?
 S: hm //.
 T: hm?
 S: @ **wearing**...
 T: clothes.
- b) T: ok Daniel.
 T: can you see this suitcase?
 T: what do you think is inside the suitcase?
 S: @ xxx in this case is clo... **clotch**?
 T: clothes.
 S: clothes.

From the examples above it may be assumed that both speakers wanted to use the term *clothes*. While in the excerpt a) the speaker used the form *wearing*, which is related to *wear*, the second speaker used a completely different *clotch* in their effort to say the word *clothes*. What is interesting in this data is that both speakers provided different perception of the same issue. According to Possible error typology displayed below, it may be presumed that an incorrect use of words could have been caused by lack of knowledge, therefore, it has been classified into this category.

A wrong / missing preposition

- c) T: very nice.
 T: what is this woman doing?
 S: @ a woman is @.
 T: where is she?
 T: where is this?
 S: **on** train station.

- d) T: hm?
T: what do you think what can she do in the railway station?
S: hm.
T: at the station.
T: hm?
S: @ waiting **on** the train.
T: yes, she is waiting for the train.
T: she is waiting for her...

In the examples c) and d) wrong preposition was used. The first speaker, trying to indicate the location, used the preposition *on* – *on train station*. There is some evidence that the interference with mother tongue has an influence on translating prepositions into English. For instance, in the Slovak language, the speaker would use the preposition “na”, which is translated into English as *on*. In the second example, the same preposition was used inappropriately. Whereas in the Slovak language the translated preposition “on” (na) would be used appropriately, in the English language it is substituted by the preposition *for*. Interestingly, this correlation is related to literal translation of the prepositions. As this case very clearly demonstrates, it is important not to use the literal translation but to identify the preposition from the context given. This finding suggests that the use of the wrong preposition might have been caused by the language transfer.

A missing subject in a sentence

- e) T: ok.
T: what colour is the coat?
S: a pink.
T: and what colour is this?
S: **is @ purple.**
- f) T: so what do you do in the weekend?
T: if you are not at school hm?
S: @.
T: what do you do in your free time at home?
S: @ **run.**

The third set of examples has shown that there is no subject in the sentences. In the first example, there is no demonstrative pronoun *this* at the beginning of the sentence. In the second example, the sentence starts without the subject *I* and it is followed by the hesitation sound and the verb *run*. This category might also be related to language transfer. A possible explanation for this issue is that to start a

sentence without a subject in Slovak language would not be considered as a major error. However, the English language differs from the Slovak language in a number of respects and there is a subject at the beginning of a sentence usually.

An incorrect use of articles

g) T: and what is the best thing about school?

S: **a friends.**

T: friends.

T: have you got a lot of friends?

S: yes.

h) T: Jakubko look this suitcase and tell me what can be inside in the suitcase.

T: what do you think?

S: **@ a T-shirts @ @ @ @.**

T: what else?

S: @ // xxx.

T: what do you think?

T: yeah?

S: **a trousers @ @ @ dress dresses.**

The category displayed above deals with the incorrect use of articles. The speaker in the excerpt g) used an indefinite article “a” with the plural form *friends* and the speaker in the excerpt h) used the same form, however, with the different words: *T-shirts* and *trousers*. There are a number of important differences between the Slovak language and the English language with regard to the use of articles. It is important to emphasize that the Slovak language does not have a system of articles. However, there are parts of speech, mainly demonstrative pronouns, indefinite pronouns and possessive pronouns which may help to indicate whether a noun phrase is definite or indefinite. It could be assumed that that no system of articles in the Slovak language might cause EFL learners possible problems with the correct use of articles in the English language and, therefore, these errors could have been caused by the language transfer.

Missing there is there are

i) T: a boy.

T: and can you see something that is on the train?

S: **on the train is snake.**

T: snake very good.

T: ok look at this woman and tell me what is she wearing.

S: @ she wear pink coat and purple skirt and brown bag and the red shoes.

T: and red shoes.
T: what do you think she is doing?
S: @ // say goodbye.

- j) T: yes.
T: how many birds are there?
S: // @ **two**.
T: two yes.
T: two birds yes?

The examples i) and j) show that none of the speakers used a phrase “there is / there are” correctly, as both of them omitted the word “there”. This might have been caused by the literal translation from mother tongue. Firstly, there is a certain pattern in the English language to use “there is / there are” with the aim of introducing a new topic. On the other hand, a pronoun “there” is not generally used in the Slovak sentence when the speaker introduces a new topic. It is possible, therefore, that this type of errors could also have been caused by the language transfer.

An incorrect use of tenses

- k) T: TV shows.
T: and do you watch fairy tales?
S: yes **I am**.
- l) T: agreement.
T: yes, and how...
T: how do you learn it?
T: do you read or write?
T: or do you speak?
T: xxx.
S: @ **I writing** homework...
T: yes you write homework.
- m) T: what is this man doing?
S: @ **he is @ read**.
T: and what?
S: @ read a papers.
- n) T: do you read newspapers?
S: @ no.
T: no.

T: ok.

S: **I no read.**

T: no.

T: alright.

The extracts displayed above present an incorrect use of tenses. In the example k), the correct answer would be *I do* instead of *I am*, as the teacher asked: “*do you watch fairy-tales?*”. In the example l), the teacher used Present simple, however, the student was trying to answer in the Present continuous and yet he omitted the verb “to be”. In the third example, m), it is visible that some of the students have a problem with the proper form of Present continuous tense. The student omitted the suffix *-ing* which should be placed at the end of the verb *read*. The last example shows an inappropriate form of a negative response. Therefore, not only an incorrect use of tense occurred in this excerpt but it also occurred in the incorrect form. These types of errors could be linked with the lack of knowledge, as the speakers are six graders and according to National Institute for Education, ISCED 2, (2015) they should have mastered Present Simple and Present Continuous tense in the fifth grade.

An incorrect use of dates

o) T: you like story books.

T: ok.

T: what's your best friends name?

S: Nina.

T: Nina.

T: and when is your birthday?

S: **in a twenty-seven @ xxx @ ten.**

T: **Octo...**

S: **October.**

p) T: ok Patricia.

T: when is your birthday?

S: 0 [=! sigh].

T: hm?

S: **twelve.**

T: on the twelveth.

T: and which month?

S: xxx.

S: 0 [=! whispering].

T: pardon?

S: **eight.**

T: so twenty-eight yes?

T: and when?

S: @.

T: is it in September?

S: // hm.

T: so which month then?

T: twenty-eight May July...ok.

As could be seen in the examples above, the students had difficulties with the proper form of dates. In the first example the preposition used is incorrect (*in a twenty-seven*). However, when the student did not know how to say October in English, he / she used the number instead (*ten*). This way the interlocutor knew which of the months the student had meant in the first place. The second example shows the obstacles the student had to overcome in order to express the content required. It is possible to assume that the errors related to expression of dates might have been caused by transfer from mother tongue since in the Slovak language no prepositions are usually used in dates.

An incorrect use of time expression

q) T: it's a train station.

T: and what time is it?

S: //.

T: there is a clock.

T: so what time is it?

S: //.

T: what time is it?

S: laugh // **three?**

T: three yes perfect.

T: it's three o'clock.

As in the previous examples (an incorrect use of dates) errors related to time expression might have been caused by language transfer as well. When expressing time, it is common in the Slovak language to only say the number. The student could have transferred this short version from mother tongue and, therefore, omitted *o'clock*.

A problem to answer fluently

r) T: yes but what is inside?

S: //.

T: some shoes or what?

S: //.

T: hm?
T: what do you put into the suitcase?
S: //.
T: hm?
T: so shoes clothes...
T: what else?
S: //.

As Table 2 shows, a problem to answer fluently was one of the most frequent among the students. This was reflected in a number of long pauses transcribed as //. Since there are numerous possible causes of this problem with fluency (e.g. stress, noise, shyness et cetera), it has been classified into a specific category.

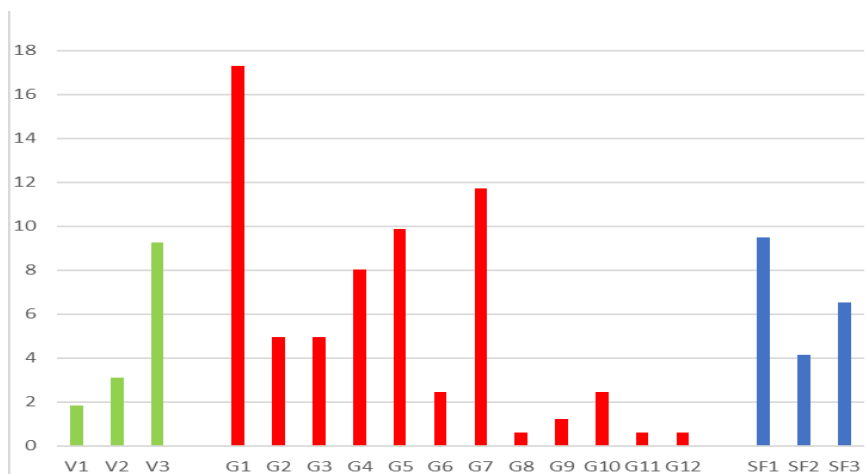
Code switching

- s) T: and what subjects do you like at school... at school...
T: what do you like at school?
S: do you like...
T: hm?
S: **čo to znamená?**
T: what is good for you at school?
S: no.
S: **nemám rád školu.**
T: you don't like school at all?
S: yeah.
S: 0 [=! laughter].
- t) T: what else is in the picture?
T: what can you see?
S: @ // **ešte raz prosím.**
T: what can you see in the train @ in the picture?
T: there is a train.
T: what is this or this?
S: @ people and animals.
- u) T: hm?
T: what is she doing?
T: where is she?
T: where is the picture taken from?
S: **na** train station.

T: yes railway station.

T: very good.

It is apparent from the examples above that the students who participated in the research had to switch to mother tongue from time to time. In the first two examples the students switched to mother tongue in order to ask for clarification of the question (*Čo to znamená?*¹ *Ešte raz poprosím*²). In addition, in the second example the student answered the question in the Slovak language (*Nemám rád školu*³). The third example shows that in case the student knew how to respond in English except for one word (which was in this case a preposition “on”) he / she did not say the whole sentence in Slovak, but only the preposition (*na*⁴). It could be assumed that this code switching resulted from students’ lack of knowledge.



Graph 1 Occurrence of different error types in percentage

Legend

V1-V3 – Vocabulary errors

G1-G12 – Grammar errors

F1-F3 – Speech fluency errors

¹ English translation – What does it mean?

² English translation – One more time, please.

³ English translation – I don’t like school.

⁴ English translation – on.

Table 2 Occurrence of different error types

Code	1-C: CSA	3-C: CSA	5-C: CSA	7-C: CSA	8-C: CSA	9-C: CSA	10-C: CSA	14-C: CSA	17-C: CSA	20-C: CSA	14-E: CSA	10-E: CSA	8-E: CSA	5-E: CSA	3-E: CSA	1-E: CSA	16-E: CSA	18-E: CSA	26-E: CSA	TOTAL	%	
VOCABULARY																						
1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	1.85	
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	3.09	
3	0	3	0	2	0	1	0	1	2	2	0	0	1	0	0	0	1	1	1	15	9.26	
GRAMMAR																						
1	1	2	1	1	0	1	2	1	1	1	1	3	1	1	2	0	2	0	3	28	17.29	
2	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	1	1	1	8	4.94	
3	0	0	0	0	1	0	0	0	0	0	4	0	2	0	0	0	0	1	0	8	4.94	
4	0	0	0	1	0	1	0	1	1	2	1	0	1	0	2	0	2	0	0	13	8.02	
5	0	1	0	2	3	1	0	0	2	1	0	0	0	0	2	1	2	1	0	16	9.88	
6	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4	2.47	
7	0	1	0	1	1	1	0	2	1	2	0	1	1	2	2	1	1	1	1	19	11.73	
8	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.62	
9	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	1.23	
10	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	4	2.47	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.62	
12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.62	
SPEECH FLUENCY																						
1	1	1	2	0	0	1	0	0	0	0	1	2	0	2	0	1	2	2	0	16	9.47	
2	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	1	0	3	7	4.14	
3	0	0	2	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	11	6.51	
TOTAL	5	10	4	8	6	10	4	11	7	13	10	6	1	10	8	10	9	12	10	8	162	100
%	3.09	6.17	2.47	4.94	3.7	6.17	2.47	6.79	4.32	8.02	6.17	3.7	0.62	6.17	4.94	6.17	5.56	7.41	6.17	4.94	100	

Legend

VOCABULARY

- 1 – Missing letters in words
- 2 – Redundant letters in words
- 3 – An incorrect use of words

GRAMMAR

- 1 – No beginning of a sentence
- 2 – A wrong / missing preposition
- 3 – A missing verb “to be”
- 4 – A missing subject in a sentence
- 5 – An incorrect use of articles
- 6 – Missing “there is / there are”
- 7 – An incorrect use of tenses
- 8 – An incorrect use of he / she / it
- 9 – An incorrect use of dates
- 10 – An incorrect use of singular / plural
- 11 – An incorrect use of time expression
- 12 – An incorrect use of have / has

SPEECH FLUENCY

- 1 – A problem to answer fluently
- 2 – Redundant use of hesitation sounds
- 3 – Code switching

Possible error typology:

1) Transfer from the mother tongue

- No subject in a sentence
- An incorrect use of articles
- Wrong/missing preposition – in some cases
- Missing “there is / there are”
- An incorrect use of dates
- An incorrect use of time expression

2) Lack of knowledge

- Missing letters in words
- Redundant letters in words
- An incorrect use of words
- A missing verb “to be”
- Code switching
- An incorrect use of tenses
- An incorrect use of singular/plural
- An incorrect use of have/has

3) Specific category

- A problem to answer fluently
- Redundant use of hesitation sounds
- An incorrect use of he/she/it

Discussion

This section attempts to discuss the current issues in the field of error analysis pointing out the similarities and differences in the current research with regard to this topic. Areas where significant similarities have been found include the interference with mother tongue in EFL classroom. This can be seen in the Possible error typology which lists six types of the errors caused by transfer from mother tongue. According to Hopkinson (2007), who has been dealing with the interference and interlanguage in the field of translation, it is important to highlight the interdisciplinary approach when researching the issue of transfer from mother tongue. Therefore, it might be suggested that there could be possible changes implemented in ESL teaching curriculum so that it reflects the needs of the learners while taking into account their cultural background, which has a significant impact on the errors students make. In the literature on ESL teaching, the relative importance of error analysis has been subject to considerable debate. Much of the current literature on error analysis (Jabeen, A. – Kazemian, B. – Mustafai, M. S., 2015; Darus, S. – Subramaniam, K., 2009; Heydari, P. – Bagheri, M. S., 2012) pays particular attention to the fact that error analysis from the perspective of a teacher is crucial in order to adapt teaching strategies, curriculum and teacher’s

approach to students' needs so that their learning becomes more effective. Recent evidence suggests (Thomas, 2014) that it is essential for students to be exposed to target language adequately with the proper amount of time spent on language practise. A number of researchers (Hussain, Z. – Hanif, M. – Asif, S. I. – Rehman, A. U., 2013) have reported the inevitable need for skilled and well-trained teachers, which can also be achieved by encouraging them to get the feedback from their students on their teaching.

Limitations

The reader should bear in mind that the research was conducted on the smaller sampler of participants and, therefore, the result reported and possible suggestions for future can not be viewed as general statements. It is beyond the scope of this study to examine all the possible causes and the background of errors.

Conclusion

This study has discussed the possible causes of the errors the EFL students of lower secondary level made in their speech. However, the emphasis has been put on the most frequent type of errors as well as the errors caused by language transfer and those influenced by Slovak cultural context. In the process of analysing the errors, The Common European Framework of Reference for Languages (2013) has been used in order to know the exact requirements and expectations related to A1 level.

The findings show different types of errors the students made in the conducted research as well as the possible background of these errors. The investigation has shown that the most frequent types of errors the students made were: no beginning of a sentence (G1), an incorrect use of tenses (G7), an incorrect use of articles (G5), which are classified into the category of grammar errors. Other most frequent errors were: a problem to answer fluently (SF1), an incorrect use of words (V3) and a missing subject in a sentence (G4). As displayed in the graphical representation of different error types, the most frequent errors caused by language transfer were: an incorrect use of tenses (G7) and an incorrect use of articles (G5). The results of this research support the idea that language transfer plays an important role in EFL classroom.

However, some important limitations need to be considered. The investigation was limited by the number of participants, since it had only examined the EFL students of one primary school. Furthermore, the speaking performance of the students might have been influenced by various aspects. According to Tuan, N. H. and Mai, T. N. (2015) there are a lot of factors which affect students' speaking performance (motivation to speak, confidence, anxiety, pressure to perform well, etc.). Therefore, the generalisability of these results is a subject to consider.

Taken together, the research findings of this study suggest that it might be reasonable to create a united regulation within the national documents which would take

into consideration the cultural contexts of different nations, especially those related to Slovak cultural context.

This research has thrown up many questions in need of further investigation. What might be useful is a cross-national study involving not only primary, but also secondary school students. Further research in this field would be of great help in re-designing of educational curriculum with regard to Slovak cultural context.

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Issues in Machine Translation

A case of mobile apps in the Lithuanian and English language pair

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Abstract

Machine translation (MT) is still a huge challenge for both IT developers and users. From the beginning of machine translation, problems at the syntactic and semantic levels have been faced. Today despite progress in the development of MT, its systems still fail to recognise which synonym, collocation or word meaning should be used. Although mobile apps are very popular among users, errors in their translation output create misunderstandings. The paper deals with the analysis of machine translation of general everyday language in Lithuanian to English and English to Lithuanian language pairs. The results of the analysis show that more than two thirds of all the sentences were translated incorrectly, which means that there is a relatively small possibility that a mobile app will translate sentences correctly. The results are disappointing, because even after almost 70 years of MT research and improvement, researchers still cannot offer a system that would be able to translate with at least 50% correctness.

Keywords

Machine translation, mobile apps, types of errors, the Lithuanian and English language pair

1 Overview of machine translation

At the beginning of the 20th century, it was already obvious that fully automated high quality translation was not possible and both pre- and post-editing would be needed (Hutchins, 2010). Dostert claimed that there were 2 main issues in MT: a unit of words in the source language may have more than one possible equivalent in the target language; and the order of source language sentences or units may not be suitable for the output in the target language (1957). Post-editing was considered to be unavoidable, because an MT system would have to deal with flexible syntax, vocabulary and a variety of subjects and different genres of discourse (Vasconcellos, Marjorie, 1988). Due to this, it has been very difficult to transfer a sense from one language to another for MT systems. Nevertheless, Stefcik (2015) points out that “MT is used with caution where a high degree of quality is required, but in translation of certain types of texts MT may be successfully applied” (p. 140).

Some of the most popular MT systems are SYSTRANet (includes 35 pairs of languages), Babelfish (includes 35 pairs of languages), Google Translator (includes 25 pairs of languages), InterTran (includes 29 pairs of languages), and Wordlingo (includes 14 pairs of languages), etc. (Rimkutė & Kovalevskaitė, 2007a). The majority of these MT systems translate single words, sentences, texts, files, websites, emails, etc. in the most popular languages such as English, German, Russian, Polish, French, Czech, Italian, Spanish, Chinese, Japanese, Korean, Arabic, and Swedish (ibid). However, MT development is an ongoing and continuous process because of structural and lexical differences of source and target languages and polysemy.

A technology for intercultural oral communication integrates automatic speech recognition and MT speech translation. A speech translation system consists of an automatic speech recogniser (ASR), a machine translator, and text to speech system. The majority of ASR systems are developed and structured in order to minimise the word error rate (WER). However, WER counts word errors only at the surface level, not considering context and syntax, which are often critical for MT (He; Deng, 2008). Over the last decade, a lot of publications and research projects have demonstrated that ASR and MT could be combined for direct translation of spoken language (Grazina, 2010).

Zheng et al. (2010, p. 113) claim that “large-vocabulary S2S translation system typically uses multiple computing intensive components and requires large memory availability to store models in dynamic data structures, therefore posing significant challenges to developers.” In order to adapt speech recognition system to the purposes of small languages, more advanced techniques have to be developed.

A number of mobile applications have been developed including text-to-text, text-to-speech, and speech-to-text. They are helpful in providing, for example, travellers with a quick and simple way to communicate in an unfamiliar language. The first mobile translation apps have been developed recently (Google Translate App, Duolingo,

Busuu, iTranslate, etc.). Miguel A. Jimenez-Crespo (2016) has made research into mobile apps and translation crowdsourcing, which revealed that smartphones have occupied the place of desktop computers. The goal of mobile translation apps “is to deliver flexible, dynamic and quick translations of varying degrees of quality” (Jiménez-Crespo, 2016). This degree of translation quality is still low and requires more or less of improvement depending on the type of text.

2 Classification of machine translation errors

MT receives a lot of criticism (Labutis, 2005; Rimkutė; Kovalevskaitė, 2007, 2007a). However, cost, speed, and size of dictionaries are the factors that largely determine the quality of machine-generated translations. Flanagan (1994) identifies a few reasons why machine translation quality is difficult to evaluate: a text can have more than one correct translation; errors can involve not only single words but also phrases, discontinuous expressions, word order or relationships across sentence boundaries, and as noted by Vilar et al. (2006) it makes simple counting of the number of wrong words in the translation pointless; one error can lead to another; and the cause of errors in MT output is not always clear, as the evaluator usually does not have ability to trace the tests and actions in the software, making it difficult to identify what went wrong in the text translation.

Flanagan’s well-known classification scheme based on common MT errors was created for the English-French and English-German languages pairs (Hsu, 2014). The taxonomy consists of 19 categories: spelling, not found words, inflection, rearrangement, category, content and function words, agreement, cause boundary, word selection, and expression. However, this classification is applicable in the 21st machine translation as a framework for error identification (Stymne, Ahrenberg, 2012; Elliott, Hartley, and Atwel, 2004; Valotkaitė and Asadullah, 2012, Climent et al., 2003). This paper employs the taxonomy proposed by Vilar, Xu, D’Haro, and Ney (2006) for error identification in machine translation (see Figure 1).

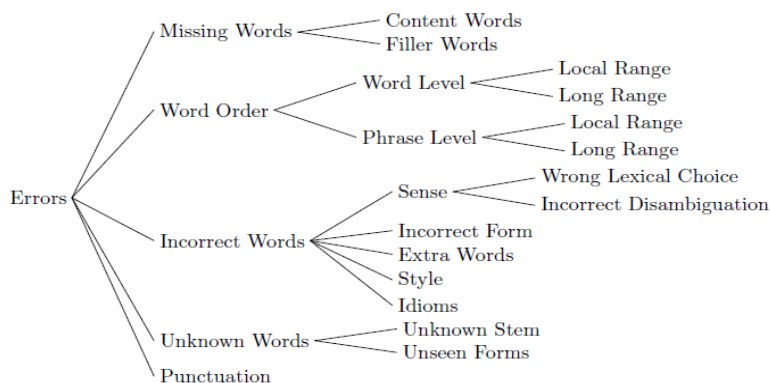


Figure 1. Classification of translation errors by Vilar, Xu, D'Haro and Ney (2006)

Five subcategories are distinguished: sense, incorrect form, extra words, style, and idioms. For highly inflected languages like Lithuanian, where a variety of inflections of the content word classes produces a problem for machine translation, the MT system is not able to generate the correct word form, even though the translation of the base form is correct. Errors of unknown words (further subdivided into unknown words or stems) and unseen forms of known stems are common for the pairs of the majority of European languages, because unknown words can be rendered by copying the input word in order to produce a sentence. Punctuation errors are only important when they interfere with the logical structure of a sentence. This taxonomy has been employed by a number of researchers (Popovich; Ney, 2011; Avramidis; Koehn, 2008; Stymne, 2011) as a framework for error analysis in machine translation.

3 Methodology

The paper analyses 400 sentences (100 compound and 100 simple sentences in English, 100 compound and 100 simple sentences in Lithuanian) recorded into 2 different mobile translation (speech to speech) apps. The sentences were taken from English-to-Lithuanian and Lithuanian-to-English phrase books published for tourists, as they contain the most useful and common sentences, which become of vital importance for a person without basic knowledge of the language spoken in a particular country, if he or she wants to be understood. For the purposes of the research, it was considered that the automatic speech recognition system recognised sentences correctly. Therefore, only MT errors were analysed and identified according to the taxonomy proposed by Vilar, Xu, D'Haro and Ney (2006). Punctuation and style mistakes were excluded, as only individual sentences were used and style errors were covered by the incorrect word category. The word-for-word translation subcategory was added since

some MT output sentences were non-editable due to a large number of mistakes. The analysis was performed in Lithuanian to English and English to Lithuanian language pairs. The apps chosen were developed by international (App 1) and Lithuanian IT developers (App 2).

4 Results

Error rate analysis in simple and compound sentences. The analysis of recorded and translated sentences demonstrated that almost 70% of all the sentences (553 sentences out of 800) were translated incorrectly (see Figure 2 and Figure 3).

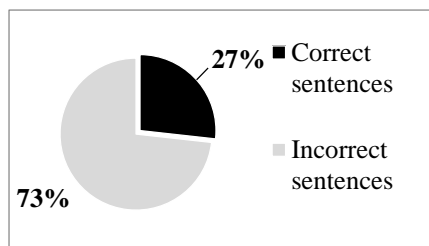


Figure 2. Correct and incorrect sentences translated by Application 1

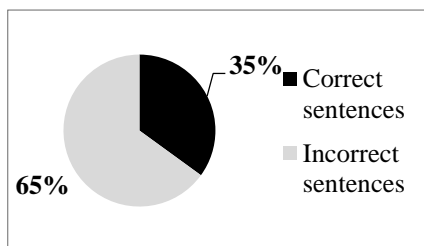


Figure 3. Correct and incorrect sentences translated by Application 2

More than two-thirds of all the sentences were translated incorrectly, which means that there is only a 33% possibility that an MT system will translate sentences correctly, which is too disappointing as such high number of mistakes most probably will lead to misunderstandings. In order to understand what types of sentences and which language pair translations cause the major issues, the results of simple and compound sentence translations were analysed separately. They also were distributed into English to Lithuanian and Lithuanian to English categories (see Figure 4 and Figure 5). It was discovered that the apps made fewer mistakes in translation from Lithuanian into English. It may be assumed that MT systems struggle with the Lithuanian language because it is a synthetic and morphologically rich language. The system fails to understand how relations between words in the sentence work.

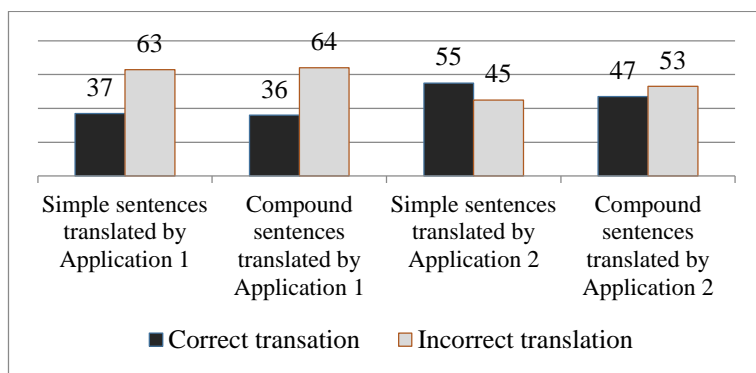


Figure 4. Correctly and incorrectly translated sentences from Lithuanian to English

Figure 4 shows that in translation of simple sentences from Lithuanian into English by Application 2 the number of correct sentences (55 of 100) was higher than the number of sentences translated incorrectly (45 of 100). Meanwhile, Application 1 succeeded to translate only 37 instances of simple sentences correctly, producing incorrect translation in 63 instances. The highest rate of errors in translation from Lithuanian into English was made in compound sentences translated by Application 1 (64 incorrect vs 36 correct), while Application 2 provided almost equal results in translating compound sentences (47 correct vs 53 incorrect).

Figure 5 represents the results of simple and compound sentence translation from English to Lithuanian. Less than 30% of translated sentences were correct (see Figure 5).

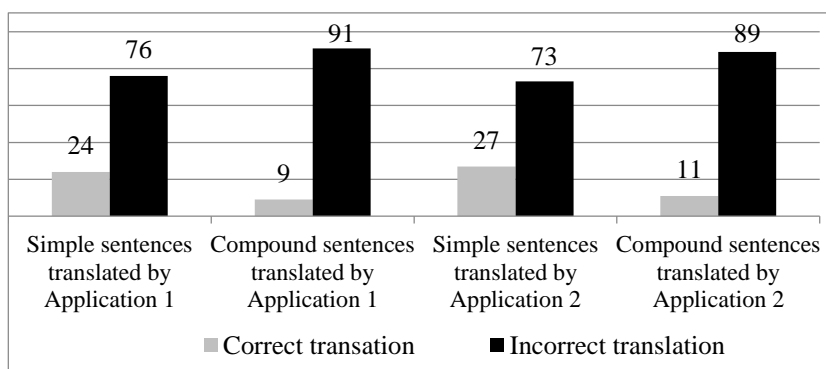


Figure 5. Correctly and incorrectly translated sentences from English to Lithuanian

Like in the Lithuanian to English translation, Application 2 showed slightly better results: only 27 simple and 11 compound sentences were accurate when translating from

English to Lithuanian. Nevertheless, the number of errors made by both applications was approximately equal when translating from English to Lithuanian. However, the Lithuanian to English translations displayed better translation quality, providing the best output by Application 2.

Analysis of missing word errors. All the missing word errors were divided into missing content and filler word errors in simple sentences and missing content and filler word errors in compound sentences. In Lithuanian to English translation, both mobile applications provided similar results. However, slightly better results were observed in the translation by Application 2, e.g.

- (1) Lithuanian: *Atleisk, kad taip užtrukau atrašyti.*
 forgive-IMP that so take-1P-SG-PAST write-INF
 App 1: *Sorry that it took me to write back.*
 App 2: *Sorry it's taken me so long to write.*
- (2) Lithuanian: *Man rodos, Jūs važiuojate ne ta*
 me-DAT seem-3P-PRES you-PL go-2P-PL-PRES not that
kryptimi.
 direction-INSTR
 App 1: *I am afraid you are going in the wrong direction.*
 App 2: *It seems to me, to go in the wrong direction.*

In Example 1, the missing content word *taip* (adverb) may not have other meanings in application memories, that being a cause for error. However, Application 2 recognised the word and rendered it correctly. In Example 2, the mistake made by MT was the missing filler word *jūs*. The pronoun was present in the Lithuanian sentence, and Application 2 failed to render it in the translated version of the sentence.

In the translation from English to Lithuanian, missing content and filler word errors were also present, e.g.

- (3) English sentence: *Sorry to keep you waiting.*
 App 1: *Gaila, kad jus laukia.*
 regrettably that you-PL-ACC wait-3P-PRES
 App 2: *Atsiprašome jus laukia.*
 apologise-1P-PL-PRES you-PL-ACC wait-3P-PRES
 Correct: *Atsiprašau, kad priverčiau laukti.*
 apologise-1P-SG-PRES that force-1P-SG-PRES wait-INF

In Example 3, the verb *priverčiau* (force-SUBJ-1P-SG) is missing. The MT system did not recognise and identify the meaning of the phrase *keep someone waiting* in the source sentence, which is why the MT system failed to translate the sentence correctly.

(4) English: *I would like something for insomnia.*

App 1: *Norėčiau ko nors nemiga.*

want-SUBJ-1P-SG something insomnia-NOM-SG

App 2: *Norėčiau kažką nemigos.*

want-SUBJ-1P-SG something-ACC insomnia-GEN-SG

Correct: *Norėčiau ko nors nuo nemigos.*

want-SUBJ-1P-SG something for insomnia-GEN-SG

As the example above demonstrates, both applications failed to render the preposition in the target sentence due to failure of MT systems to identify the meaning of the phrase *something for*.

The errors of missing words in the target sentences most probably appear due to the inability of MT systems to recognise the relations between words (i.e. subject and predicate). The size of the database may also play a role since the developers of mobile applications normally reduce the size of the database in order to ensure good performance of applications.

Analysis of word order errors. The majority of the mistakes occurred at the phrase level in both Lithuanian to English and English to Lithuanian translations, e.g.

(5) Lithuanian: *Ar galėtumėte man tai suvynioti?*

QPT can-SUBJ-2P-PL me-DAT that wrap-INF

App 1: *Would you mind me wrap this?*

App 2: *Can you tell me it wrapped?*

Correct: *Could you wrap it for me, please?*

(6) English: *Thank you for everything you have done for me.*

App 1: *Ačiū jums už viską, ką tu padarei*

thank you-DAT for everything-ACC that you-SG PREF-do-SG-2P-PAST
man.

me-DAT

App 2: *Dėkojame už viską, ką padarei*

thank-1P-PL-PRES for everything-ACC that PREF-do-SG-2P-PAST
man

me-DAT

Correct: *Dėkoju už viską, ką dėl manęs*

thank-1P-PL-PRES for everything-ACC that for me-GEN
padarėte.

PREF-do-PL-2P-PAST

Examples 5 and 6 indicate that the mistakes of possessor order were made. Both applications failed in translation. This happened because MT systems followed the word order of the source language and not the target language. It might be assumed that MT systems face two challenges: different word order in different languages and sentence sense recognition.

Analysis of unknown words. If the MT system cannot recognise the word in a source sentence, the word is left untranslated in the target sentence. Application 2 was observed to have a richer vocabulary and contained more information about words and word formation, making it more suitable for users. Application 1 in the Lithuanian to English translations produced a greater number of mistakes than in the English to Lithuanian translation; meanwhile, Application 2 failed in fewer cases, regardless of the translation direction.

In a few cases, the MT system did not translate core words, e.g.

- (7) Lithuanian: *Likime draugais.*
 stay-IMP-1P-PL friend-PL-INSTR

App 1: *Likime friends.*

App 2: *Let's stay friends.*

- (8) Lithuanian:
Paskambinkite man kitą kartą kai norėsite,
 call-IMP-2P-PL me-DAT next-SG-ACC time-SG-ACC when want-2P-PL-FUT
kad jus kur nors nuvežčiau.
 that you-ACC-PL where some take-SUBJ-1P-SG

App 1: *Call me next time when you want to make you a nuvežčiau.*

App 2: *Call me the next time when you want to keep you somewhere nuvežčiau.*

Correct: *Call me next time you need a lift anywhere.*

The length of sentences, in fact, does not influence the error rate. Sometimes MT systems are not able to recognise one word, i.e. *nuvežčiau* (take-SUBJ-1P-SG; Example 7) or *likime* (stay-FUT-1P-PL; Example 8). Application 2 managed to recognise the word; however, other mistakes occurred in the target sentence. It is interesting to notice that Application 1 identified the verb *nuvežčiau* (subjunctive mood) as a noun, adding an indefinite article.

In the translation from English to Lithuanian, untranslated words were also frequent in both applications, e.g.

- (9) English: *If you'd like to meet up sometime, let me know!*

App 1: *Jei norite susitikti kažkada, let me know!*
 if want-2P-PL meet-INF sometime, let me know

App 2: *Jei norėtųėte susitikti kada, let me know!*

if want-2P-PL meet-INF when, let me know

Correct: *Jei norėtum kada susitikti, pranešk!*

if want-SUBJ-2P-SG when meet-INF tell-INF

The phrase let me know in Example 9 is a collocation, but it was not recognised and was left untranslated in both applications.

MT systems may not be able to identify single words and lexical units. Sometimes MT systems translate phrases word-for-word. However, the length and the complexity of sentences has no influence on the frequency of this type of errors. Poor vocabulary and insufficient databases may be considered the main factors for appearance of such errors.

Analysis of incorrect word errors. MT error analysis showed that incorrect word errors (wrong lexical choice, disambiguation, incorrect form, extra word, idiom and word-for-word translation) were the most common mistakes in both applications. The correct lexical choice was the greatest challenge for MT translation systems, accounting for the majority of incorrect word errors, e.g.

(10) Lithuanian:

Greitojo **traukinio** **išvykimas** **į**
fast-SG-M-GEN-PRONOM train-SG-M-GEN departure-NOM-M-SG to
Londoną **numatomas** **keturioliktą**
London-ACC schedule-PAST-PTC-SG-NOM fourteen-ACC-SG-FM
valandą.
hour-ACC-SG-FM

App 1: *Speed train departure to London expected the fourteen hour.*

App 2: *High-speed train departure to London expected the fourteenth hour.*

Correct: *The departure of the London express is scheduled for 2 p.m.*

(11) English: *The ferry to Klaipėda is anchored at pier number three.*

App 1:

Kelto **į Klaipėdą** **yra** **įtvirtinta**
ferry-SG-M-GEN to Klaipėda-ACC be-3P-PRES PREF-fix-SG-F-PAST-PTC
priplaukos **skaičius** **numeris 3.**
prier-SG-F-GEN digit-NOM-SG-M number-SG-M-NOM 3

App 2:

Keltas **į Klaipėdą** **yra** **įtvirtinti**
ferry-SG-M-GEN to Klaipėda-ACC be-3P-PRES PREF-fix-PL-M-PAST-
molo **numeris** **trys.**
PTC pier-SG-M-GEN number-SG-M-NOM three-NOM.

Correct:

Keltas *i Klaipėdą* *prišvartuotas*
 ferry-SG-M-GEN to Klaipėda-ACC be-3P-PRES PREF-wharf-SG-M-PAST-PTC
priplaukoje *numerys* *trys*.
 prier-SG-F-GEN number-SG-M-NOM three-NOM

Examples 10 and 11 illustrate that MT systems may choose a wrong synonym due to which the target sentences gain a different or unclear meaning. The users may still guess the meaning, but because of an incorrect word the sentence does not sound natural.

Incorrect form mistakes also posed a greater challenge in translation into Lithuanian than into English. That is because the words and connections between the sentences are managed by word endings in the Lithuanian language. In translation into Lithuanian, MT systems failed to select the correct inflection as they were not able to identify the relations between words accurately and to link them, e.g.

(12) English: I

App 1 and 2: *Ar turite kopūstų sriuba?*
 QPT have-PL-2P cabbage-PL-M-GEN soup-SG-F-NOM
 Correct: *Ar turite kopūstų sriubos?*
 QPT have-PL-2P cabbage-PL-M-GEN soup-SG-F-GEN

In Example 12, the MT-provided translations are incorrect due to disagreement in the inflections required by the Lithuanian language grammatical rules.

Languages under investigation are different in their structure, Lithuanian being highly inflectional. Hence, both applications struggled to choose correct words or word meanings, and forms, due to which target sentences appeared to have unclear meanings or sound unnatural.

5 Final implications

A lot of MT issues still remain unsolved. The analysis of the results of translations in Lithuanian to English and English to Lithuania indicate that MT apps face deep syntactical and lexical issues. Translation from English to Lithuanian is much worse than the one from Lithuanian to English due to a few reasons: Lithuanian is a relatively small language also being a synthetic, highly inflectional language where the relations between elements of the sentence are defined by word endings.

Both apps struggled most in choosing a correct word or word meaning, and a word form. Unknown word, missing word and word order errors were also frequent. The results are disappointing, because even after almost 70 years of MT research, researchers still cannot offer a system that would be able to translate sentences with at least 50% correctness. One of the factors influencing mobile translation apps results is

the type of the chosen text. The analysis and comparison of mobile translation apps output in a variety of texts may be the next step for highlighting the points for improvement of MT apps.

ABBREVIATIONS

ACC – Accusative	P – person
DAT – dative	PAST – past
F –feminine	PL – plural
FUT – future	PREF – prefix
GEN – genitive	PRES – present
IMP – imperative	PRONOM - pronominal
INF – infinitive	PTC – participle
INSTR – instrumental	QPT – question particle
M – masculine	SG – singular
NOM – nominative	SUBJ - subjunctive

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