

Love in Polish and Dutch: A Cultural-Linguistic Perspective

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ABSTRACT

The goal of this study was to compare the phenomena of *love* in Dutch and Polish culture. To investigate both love as basic emotion and love as concept, three different approaches were used, namely an online questionnaire, a series of short interviews and a corpus linguistics. The results of this study, based on qualitative and quantitative data, suggest that emotional and affective experiences of love are universal across cultures, however, it is the culture that causes variation in the conceptualization of love. While the common components of the concepts of Dutch *liefde* and Polish *miłość*, as represented by native speakers, include i.e. “happiness”, “safety” or “long-term”, there were a number culture-specific components. *Liefde* was often described using i.e. “unconditionality” and “acceptance”, *miłość* was defined by “support”, “respect” or “sacrifice”. These findings emphasize the universality of love placing it among other basic emotions, like anger, fear or surprise. On the other side, they prove that the perception of love is strongly embedded and conditioned by culture.

1 INTRODUCTION

What is love? To answer this question quickly, one might consult a dictionary: “*Love, n - 1: strong affection, 2: warm attachment, 3: attraction based on sexual desire, 4: a beloved person, 5: a score of zero in tennis*” [1]. However, if it was so simple, there would not be philosophers, poets, musicians, theologians, psychologists - to name a few - devoting their time, creative thoughts and efforts into attempts to define it. On the one side, love as emotion manifests itself through distinctive signals (e.g. touch), physiological (e.g. quicker heartbeat) and neurological (e.g. activation of caudate nucleus and the ventral tegmental) responses. On the other side, love is conceptualized, which means that humans tend to think of it in terms of elementary components like, intimacy, passion and attachment. Although “love” is a nearly universal phenomenon, it is not always experienced and understood in the same way, because both, as numerous studies suggest, can be influenced and shaped by the cultural settings [2].

The goal of this research is therefore to investigate if and to what extent the experience and conceptualization of the Dutch *liefde* and Polish *miłość* align and differ from each other. The research question is formulated as follows: *What is the emotional experience and conceptualization of love as represented by speakers of Dutch and Polish?* To get a more comprehensive understanding of how love manifests itself in Dutch and Polish culture, three independent studies were set up. Study 1 aimed at comparison of valence, power, arousal and novelty dimensions of love emotion, using data collected via an online survey. Study 2 focused on defining the concepts of love as represented by speakers of both cultures, where qualitative methods were applied to analyze data collected via short online interviews with dating app users. In Study 3, a list of adjectives describing the word love was extracted from created linguistic corpora in Dutch and Polish. Exploration of textual data

written by representatives of both countries had an experimental character and served to establish possible links with the findings from Study 2.

The relevance of this study can be found on both the academic and the societal level. The comparison of Dutch *liefde* and Polish *miłość* allows to i) verify the universality of love as a basic emotion, ii) create the conceptualizations of love in both cultures, iii) investigate the impact of culture on both aspects. To our knowledge, there was no earlier study that directly compared these two cultures by implementing such a broad approach. By this, it contributes to the growing field of cross-cultural research on understanding emotions. On the societal level, with the growing interdependence between those two countries, the results of this study help to close the gap in multicultural communication and possibly sensitize Dutch and Polish speakers that differences between how love is experienced and conceptualized might exist.

This paper is structured as follows. In section 2, the theoretical background and related work is presented. This is followed by the methodology in section 3. Section 4 reports on the analysis and results. The paper ends with the discussion, limitations and suggestions for further research.

2 THEORETICAL BACKGROUND

This study is framed within the cultural-linguistic perspective, which is based on the assumption that cognition is rooted in culture [2, 3]. Everyday language serves here as a tool to communicate emotions and knowledge embedded on the cultural level. Studying the Dutch *liefde* and Polish *miłość* allows to explore the interdependence between cultures, emotions and their conceptualization, and allows to compare those cultural models. In this section, the relevant theories of love emotion, love concepts and culture are presented.

2.1 Love as basic emotion

Love has been considered a basic emotion in the perception of laypeople for over four decades. In 1984, Fehr and Russel conducted a series of experiments to investigate emotions from the prototype perspective [4]. In the first study, when 200 Canadians were asked to spontaneously name examples of emotions. Out of 196 emotions listed in total, love was mentioned as one of the most frequent after happiness, anger and sadness. In a follow-up study, the top 20 emotions were used to create a list of psychological states (e.g. stubbornness, love, dizziness) and served to ask a new group of participants to label them with a category name. Again, love was ranked as the second most frequent (60% of subjects) among sadness (67%), happiness (60%), hate (50%), joy (50%) and fear (47%). In the third study, newly recruited participants were asked to rate the top 20 emotions from the first study on the scale from 1 to 6 indicating whether it was a poor/good example of emotion. Here, the best examples were: love, hate and anger, with the average scores of 5.46, 5.25 and 5.15 respectively.

Despite the fact that laypeople think of love as a basic emotion, the contemporary emotion theorists have for a long time omitted love from the set of basic emotions. The reasons for this were: it was a mix of other emotions, attitude, sentiment, syndrome, it could not occur without the involvement of other person or object [5–8]. Nevertheless, a substantial body of evidence suggests otherwise.

Love, just like other basic emotions has distinctive signals. Darwin described it as tender eyes, touch, smiling cheeks, gentle smile, kissing and touching [9]. Fisher found that a distinctive googly-eyed gaze enchanting the object of one’s love, courting and murmuring were accurately identified as a signal of love by humans and other species [10]. A study on emotional communication by Hertenstein revealed that humans decoded love via touch, in particular stroking, interlocking fingers and rubbing, which as signals were correctly interpreted at much-better-than-chance level [11]. When studying the love phenomenon, it was proven that it triggered physiological responses. A quick heartbeat, hurried breath and blushing face characterize the first stages of romantic love [9]. Love based on trust, support, security and balance, involved autoregulatory processes engaging hormones such as oxytocin, vasopressin, dopamine or endorphins, suggesting love is related with a special neural pathway [12]. From the evolutionary perspective, it is suggested that love helps to focus on one individual exclusively. This develops an emotional bond, which in turn encourages a pair to care together for the young which is needed for its survival. As such, love has a function to connect two emotional systems, namely attachment and sexual attraction [13]. Last but not least, love as basic emotion involves affective experiences being on both sides of the spectrum of valence. The positive one involves elation, delight, happiness, arousal, contentment, while the negative fear, anxiety, dissatisfaction, hatred and shame [14].

2.2 Love as concept

Over the decades, several theories of love have been introduced. The very first one was presented by Rubin in 1970. It encapsulated love in three components - attachment, caring and intimacy - expressed through one’s thoughts, feelings and behavior [15]. The wheel of love, proposed by Lee in 1973, divided love into three primary and three secondary love styles [16]. The primary styles included *eros* (passion, romance and seeking for a beloved one who embodies the image of a perfect partner) *ludos* (playfulness and game-like love) and *storge* (friendship, developed affection and companionship). Configurations of those three gave rise to *mania* (intensely emotional, obsessive and jealous), *agape* (selfless, unconditional) and *pragma* (practical approach that accounts for relevant features of the potential partner to create a compatible match). This was followed by the triangular theory of love by Sternberg in 1984, which proposed that love consisted of three components, namely intimacy, commitment and passion [17]. The strength and relation between those three determined the amount and kind of love one experiences (Table 1). One of the latest concepts was introduced by Lieberman and Hatfield who made a distinction between two love styles, compassionate and passionate [18]. The first one is a result of shared respect between individuals that involves attachment, trust and affection. In contrast, the latter one refers to a temporary experience, characterized by sexual attraction, intense emotions, affection

and anxiety. It could bring fulfillment and elation when returned, or lead to despair and dejection when nonreciprocal. Passionate love should ideally be a starting point for long-term compassionate love. Lieberman and Hatfield claimed also that passionate love emerges from the cultural expectation linked to infatuation when one meets a person who full-filled his or her idea of perfect love and feels physiologically aroused in the company of that person.

Table 1: Forms of love as a combination of intimacy, passion, commitment by Sternberg in 1984.

lovestyle	component
non-love	<i>none</i>
liking	<i>intimacy</i>
infatuated love	<i>passion</i>
empty love	<i>commitment</i>
romantic love	<i>intimacy, passion</i>
companionate love	<i>intimacy, commitment</i>
fatuous love	<i>passion, commitment</i>
consummate love	<i>intimacy, passion, commitment</i>

2.3 Culture

Culture is seen as one of the determinants of how concepts come to existence and how speakers of a given language use it to communicate them [19]. Dutch and Polish cultures, despite relatively close geographical proximity, differ from each other significantly. In this study, the differences are exemplified using Hofstede’s cultural model because it allows to compare both countries qualitatively, i.e. based index scores (Table 2). The six dimensions are: power distance, the uncertainty avoidance, masculinity, individualism, indulgence and long-term orientation [20]

Table 2: Comparison of Hofstede’s cultural dimensions index scores for the Netherlands and Poland.

dimension	Dutch	Polish
Power distance	38	68
The uncertainty avoidance	53	93
Masculinity	14	64
Individualism	80	60
Indulgence	68	29
Long-term orientation	68	38

Power distance describes the extent to which less privileged members of a society accept social inequality. Dutch culture scores on this dimension relatively low and is characterized by independence, equal rights, openness and flat hierarchy. Poland, in contrast, is considered a hierarchical culture, in which society accepts and follows order without a need to justify it. Next dimension, *the uncertainty avoidance* measures a level of feeling uncomfortable with ambiguity and uncertainty about future events. The higher the score, the higher the degree of exhibited control and stricter rules of behavior. Comparing the index scores, there is a small tendency for avoiding uncertainty in the Netherlands and a very strong one in Poland.

Another visible difference is with respect to the division of roles between genders, called *masculinity* dimension. Masculine preferences exhibited in Poland include competitiveness, assertiveness and decisiveness, whereas care, solidary, compromise and modesty constitute feminine preferences common in the Netherlands. A well-known dimension is a differentiation between *individualism* and *collectivism*, which is understood as the extent to which members of society are integrated into in-groups. On one pole of the spectrum, there are individualists who are expected to take care primarily over themselves and a very close family. On the other pole, there are collectivists, who are born into strongly bonded and protecting them in-groups or family. Although the Netherlands scored 20 points higher, both countries are classified as individualist societies. However, there is somewhat a contradiction as Polish society is hierarchical. The *indulgence* dimension refers to the extent to which individuals are in control of their impulses and desires. Dutch culture is considered an indulgent one as its members have an overall optimistic and positive attitude, enjoy life to spend their financial resources as they wish. Poland, in contrast, is a society limited by social norms and therefore considered restrained. This means more pessimism, cynicism and less importance on satisfying one's desires. Lastly, *long or short orientation* towards the past and flexibility in approaching challenges in the present and future leads to the differentiation between normative vs pragmatic cultures. Polish culture belongs to the normative category and is characterized by respect for time-honored traditions, defining the Truth, limited inclination to care for the future and aiming for quick solutions and results. Dutch culture is highly progressive and defined by flexibility and adaptability to the changing situations, shifting the focus on the future and ready to invest in long-lasting sustainable solutions.

2.4 Effect of culture on love as basic emotion

An impact of culture on the affective experience of love can be expected, as it happened when examining pride, happiness and fear. These studies investigated emotions in terms of multidimensional components: valence, power, arousal and novelty. When comparing happiness in Japan and United States, it was found that happiness was linked to low levels of arousal and fulfillment of other's expectations among Japanese, and high levels of arousal and sense of control among Americans. Although feelings of pride and love were both present as components of happiness in both cultures, the scores of love were higher than scores of pride among Japanese and reversed in US [21]. The analysis of the emotional components of *fear* in British English and *strach* in Polish showed that fear scored higher on the power component than its Polish equivalent [22]. Polish speakers tended to evaluate the feeling of pride more positively than British speakers, who linked it more often with negative connotations [23]. These findings suggest that as far as emotions are universal, a small variance in the affective experiences of emotion can be observed due to cultural context. As love has not been studied before in terms of the multi-dimensional components, it seems compelling to give it adequate attention.

2.5 Effect of culture on love as concept

Karandashev presented an overview of various perspectives on how culture influences expression and experience of love. Overall, it was suggested that love as a feeling is universal, however, its manifestation depends on how people feel, act and think in a romantic relationship, which is heavily dependant on culture [24]. Dion and Dion, who researched extensively psychological differences between individualistic and collectivistic cultures, found that love in individualistic cultures means a connection between two individuals, however, does not imply losing freedom. It is common to end the relationship if it does not comply with expectations [25]. In collectivistic cultures, where relationships between family and friends are tighter and decision about romantic relationships involve taking into consideration other, love is often based on altruism and friendship. There is also less need to verbally confirm love. Instead, more attention is given to actions showing and proving this feeling [25]. More recent studies showed that emotions in individualistic cultures are expressed and experienced more strongly [26, 27] and achievement of emotional intimacy is more important than in collectivistic cultures[28].

De Munck et al. studied a structure of love between the United States, Lithuania, and Russia using mixed methodology - questionnaire, association free list and focus group interviews. The results revealed similarities in the following five aspects: engagement in intrusive thinking about the partner, passion, improvement of partner's well-being and importance of altruism. Interestingly, the number of culture-specific differences were detected. Comfort and friendship were named by Americans as the essential characteristic of romantic love. They also perceived love realistically, conversely to Lithuanian and Russian, who defined love as a "fairytale", "unreal" and "temporary". They believed that at some point, love either fades away or develops into a long-term relationship with the element of friendship, however without initial excitement and passion [29]. These findings align with Aronson, who categorized Western countries as cultures favoring Regime of Choice and Slavic countries as cultures favoring Regime of Fate [30]. According to her, an individual growing up in culture favoring Regime of Choice rationalizes her or his emotions as rights and needs, which helps to make rational decisions about who to get intimate with and reject potential partners if they do not seem compatible. In contrast, in Regime of Fate love is treated as "supernatural power, even when it was detrimental to comfort, sanity or life itself".

Underhill studied trilingual corpus-based data to identify the metaphors of love and desire in English, French and Czech. The analysis of the 90 articles about love collected from women's magazines revealed both, a number of overlapping contrast, as well as culture-specific comparisons. The metaphors of love as "journey", "harmony", "transmission" or "madness" was shared across all three cultures. In Czech magazines, however, love was often described in terms of "work" and "years of tolerance" as opposed to French and English, where love was claimed not to require tolerance. While "giving yourself" in Czech was understood as to be given to each other reciprocally, French and English females used this expression in terms of "bedfellows" as giving oneself to her or his lover. French and English speakers referred to "illness" to express their

frustration with men who were too affectionate, clingy or possessive. In their perception "sacrifice" implying losing money, time and freedom, as well as the "sacrifice" of oneself necessary to make a relationship work [31]. The study of Aksan and Dilek, who examined love-related expression in English and Turkish, provided support to the universality of "love as journey" metaphor, however, a few culture-specific descriptions surfaced in Turkish, namely "pain", "suffering", "ineffability" and "deadly force" [32].

3 METHODOLOGY

In all three studies, the division between cultures was based on geographical and language criteria. All of the participants were classified as Dutch if they were born or spent most of their lives in the Netherlands. The same applied to Polish. The research materials were originally prepared in English and translated into Dutch and Polish. The translations were validated by native speakers to ensure the accuracy of meaning. In addition, when preparing research materials, it was accounted for gender, as it was potentially an interesting factor to account for in the analysis.

3.1 STUDY 1 - Quantitative approach

Procedure. The participants were recruited via the researchers' social network using a Qualtrics anonymous link with an invitation to an online survey. After accepting the consent form, they were presented with a deeper explanation and context of the study, followed by a set of questions regarding the emotional and affective experiences of feelings infatuation and love. The data regarding infatuation was discarded from further analysis. The survey ended up with a set of demographic questions: gender, age, country of origin and highest completed level of education and self-reported socio-economical status. The survey was displayed automatically in Dutch or Polish, depending on the device browser settings.

Measurements. An simplified version of the GRID dimensional approach was used to assess the similarities and differences of the emotional experiences of the feeling love, explicitly emphasizing that the study focused on the meaning of emotion words, not one's personal experiences[22]. The questionnaire consisted of selected emotion items, which represented the four dimensions: valence, power, arousal and novelty. Valence defined as appraisals of pleasant emotions and pleasure, was measured using the following features: *felt positive, wanted to sing and dance, in itself unpleasant for the person, felt inhibited or blocked, felt incongruent with own standards and ideals*; power, characterized as appraisals of being salient, was measured by *assertive voice, felt submissive, wanted to take initiative her/himself*; arousal termed as sympathetic arousal, consisted of *breathing getting faster, felt hot, sweat, spoke faster*; novelty defined by appraisals of unpredictability, is measured using *was unpredictable, happened by chance, for a long time, confirmed expectations*. The respondents were requested to rate the likelihood of the presence of every feature on 9-point Likert scale, ranging from 1 - *Extremely unlikely* to 9 - *Extremely likely*.

Preprocessing. Data was pre-processed in Python. All incomplete or missing information (unfinished questionnaire and no indication of gender) were removed. Scale items worded negatively were reversed, so their numerical values run in the same direction: *felt*

inhibited or blocked, felt incongruent with own standards and ideals, in itself unpleasant for the person, felt submissive, confirmed expectations, assertive voice, for a long time.

3.1.1 Reliability analysis. The reliability analysis of the scale items of belonging to the valence-, power-, arousal- and novelty dimensions showed high reliability only for arousal *Cronbach's alpha* = 0.88 and very low reliability for valence *Cronbach's alpha* = 0.38, power *Cronbach's alpha* = 0.09 and novelty *Cronbach's alpha* = 0.27. To ensure that only items that carry information were used for further analysis, highly correlated items were selected to create new scales which increased the scales' reliability. After deleting *positively, wanted to sing and dance* and the reversed *in itself unpleasant for the person*, valence reached *Cronbach's alpha* = 0.73. Power increased reliability to *Cronbach's alpha* = 0.56 after removal of *wanted to take the initiative her/himself*, and novelty went up to *Cronbach's alpha* = 0.76 after deleting *confirmed expectations* and *for a long time*.

Sample. The total sample consisted of 185 subjects, our of which 135 data points were completed and taken for the final analysis. Among them, there was 63 Dutch (51% female) and 72 Polish (54% female) speakers. Demographic variables were approximately evenly distributed among representatives of both cultures (Figure 1).

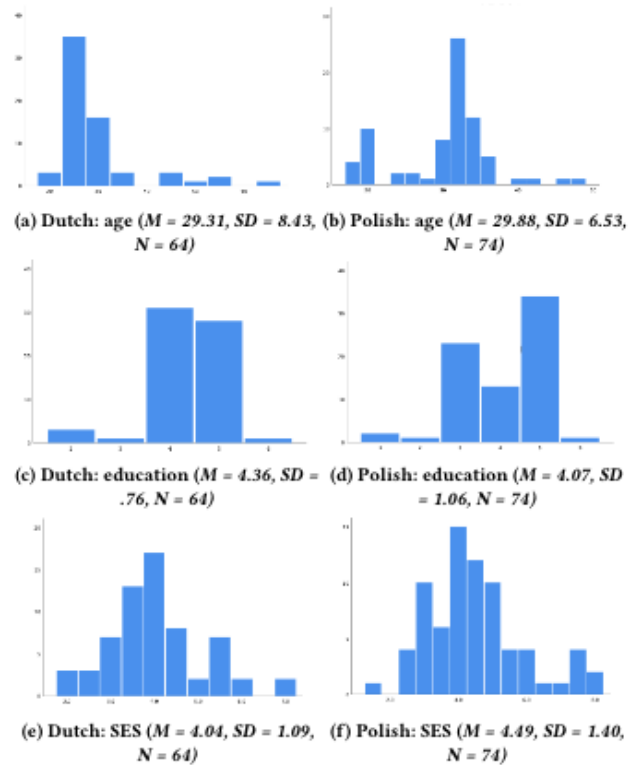


Figure 1: Distribution of the demographic variables among Dutch and Polish participants

3.2 STUDY 2 - Qualitative approach

Procedure. A series of short interviews were conducted via a popular online dating platform available in both countries, where one female and one male user profiles were created. Both included a profile picture, age, place of living and description that user profile was created to gather research data. To keep consistency across all interviews, a script was used and each participant was presented with a simplified informed consent. During a short chat, participants were asked to write down spontaneously what would come up to her/his mind upon the question: "What is, in your opinion, the definition of the word love?". The answers were saved as screenshots with annotated gender and age of the participant.

Coding. To unify the procedure of coding, all of the provided definition were beforehand discussed with native speakers of Dutch and Polish, and carefully translated into English while preserving the original meaning. Firstly, all irrelevant phrases were removed, sentences were cut into shorter chunks containing meaningful information and concepts, which constituted a basis for extracting a list of 63 codes (for example: *unconditionally, trust, acceptance, love to yourself, presence, well-meaning, desire, happiness, complementary, future, fulfilment*). Then, a number of recurring theme references were identified, for instance: *what is love? How does love start? What is the direction of this feeling?*.

Sample. The total sample consisted of 60 Dutch speakers (50% females) and 60 Polish speakers (50% females). The age spread of each subgroup was: Dutch females 18-64 ($M=26$), Dutch males 19-47 ($M=30,5$), Polish females 21-37 ($M=27$) and Polish males 21-44 ($M=29,5$). Polish speakers were recruited in the area of city Poznań, Dutch in the areas of Groningen, Utrecht and Nijmegen.

3.3 STUDY 3 - Corpus-analytic approach

An additional study was conducted to investigate the descriptions of *liefde* and *miłość* in linguistic corpora in Dutch and Polish, derived from an analysis of adjectives associated with both words.

Procedure. The articles were collected using an established online corpus query system SketchEngine [33]. A total number of 12 Dutch lifestyle magazines and 14 Polish magazines were scrapped using built-in software for acquiring text called SpiderLing [34]. It was chosen for those particular titles as we believed that they provided an accurate reflection of contemporary values and opinions on the topics of love (Table 3). The articles were searched based on the keyword *liefde* or *miłość* in combination with two other words: relationship, wedding, Tinder, sex, desire. A selection of articles involving these topics only allowed to extract information from a relatively small amount of data. Both, the Dutch and Polish corpora were explicitly divided into sub-corpora based on whether articles were written by or for women or men to gain more insights into the impact of gender. The built-in 'word search' function was used to look for adjectives that modified the word love, i.e. they appear in sentences directly before or directly after the word love (e.g. "It is beautiful to experience *romantic* love, but it is worth bearing in mind what it is a cost for ourselves").

Preprocessing. Data was annotated automatically using NLWAC POS tagset for Dutch and NKJP tagset for Polish and encoded in

UTF-8. Duplicated content, spam, on-page ads, incomplete sentences, text snippets were removed.

$$\logDice = 14 + \log_2 D = 14 + \log_2 \frac{2f_{xy}}{f_x + f_y} \quad (1)$$

Measurement. To rank the most salient adjectives, the LogDice association score was used (Equation 1). Log Dice is a measure of the collocation strength that expresses the frequency of two co-occurring words (f_x and f_y) in relation to how frequent these words occur in the corpus in general (f_{xy}). Its advantage over other linguistic association scores (e.g. T-test, MI1, MI2) is that its standardized measurements enabled comparison across sub-corpora of different sizes [35, 36]. Moreover, it put more emphasis on collocations that are unique but not rare (e.g. coca cola or femme fatale).

4 RESULTS AND INTERPRETATION

This section presents a statistical analysis of Study 1, the qualitative analysis of study Study 2 and a descriptive analysis of Study 3. Each of them ends with an interpretation of the results.

4.1 STUDY 1 - Statistical Analysis

A series of four statistical tests were run in SPSS, accounting for possible differences between genders.

Results. The Shapiro-Wilk test confirmed normality of distribution for power (Dutch $p = 0.056$, Polish $p = 0.132$), arousal (Dutch $p = 0.59$, Polish $p = 0.199$) and novelty (Dutch $p = 0.088$, Polish $p = 0.126$), however violated for valence (Dutch $p = 0.021$, Polish $p = 0.001$). Pearson correlation statistic was used to confirmed the absence of multicollinearity between the independent binary variables Culture and Gender (*Pearson* $r = 0.017$). The equal population variances were initially assumed due to roughly equal sample sizes, and later confirmed by post-hoc Levene's test (power $p = 0.697$, arousal $p = .887$ and novelty $p = 0.682$). Based on the assumption check, the appropriate statistical tests were conducted.

Arousal. A two-way ANOVA was conducted to examine the effect of culture and gender on the strength of the arousal dimension of love. There was no statistically significant interaction between the effects of gender and education level on arousal dimension, $F(1, 130) = .160, p = .819$. Neither, there were significant simple main effect of culture, $F(1, 130) = 1.033, p = .561$, nor gender present, $F(1, 130) = 1.682, p = .458$. This suggests that culture, gender and interaction between them have no effect on the arousal dimension of love.

Valence. A Kruskal-Wallis H test showed that there was no statistically significant difference in the valence score between the cultures, $\chi^2(1) = 0.201, p = .654$, with a mean rank valence score of 68.09 for Poland, 71.13 for the Netherlands. The same test showed no differences in valence score between genders $\chi^2(1) = 0.346, p = .887$, with a mean rank valence score of 64.17 for male, 70.13 for female. As the valence scores are comparable across the groups, neither culture nor gender has an impact on the valence dimension of love.

Power. A two-way ANOVA was conducted to test the effect of culture and gender on the strength of the power dimension of love. There was no statistically significant interaction between the effects

Table 3: An overview of the magazines included in each sub-corpora

Dutch magazines						Polish magazines					
Women's			Men's			Women's			Men's		
title	tokens	articles	title	tokens	articles	title	tokens	articles	title	tokens	articles
Vrienden.nl	258 645	153	Esquire.nl	94 785	114	Onet.nl/kobieta	164 281	117	Polityka.pl/spoleczenstwo	158 662	59
Elle.nl	205 218	169	MensHealth.nl	29 436	48	Glamour.pl	139 405	224	Logo24.pl	154 243	108
Libelle.nl	92 701	136	MannenStyle.nl	13 005	10	Polki.pl	132 353	30	ElleMan.pl	77 922	64
Glamour.nl	58 552	76	Gewoonvoorhem.nl	1 937	4	Claudia.pl	94 681	77	Jestemfacetem.pl	22 083	7
Linda.nl	49 566	91	MannenMagazine.nl	1 477	2	Vogue.pl	40 659	25	Czasgentelmenow.pl	21 818	3
Vogue.nl	16 276	11	Nu.nl/man	950	2	WysockieObcasy.pl	38 517	19	Szczerydobolu.pl	19 832	10
						Elle.pl	27 909	26	Tataprezes.pl	10 648	9
TOTAL	680 958	636	TOTAL	141 590	180	TOTAL	637 805	610	TOTAL	465 208	266

of gender and education level on novelty dimension, $F(1, 130) = .063, p = .802$, nor main effect of gender, $F(1, 130) = .884, p = .349$. The simple main effect revealed a significant effect of culture on the power dimension, $F(1, 130) = 6.033, p = .015$. The mean score of power dimension was higher for the Dutch culture ($M = 5.8, SD = .20$) than for the Polish culture ($M = 5.13, SD = .19$). This suggests that culture has an impact on how the power dimension of love is experienced. Further, neither gender nor interaction between gender and culture causes any meaningful differences in regards to the power dimension of love.

Novelty. A two-way ANOVA was conducted to examine the effect of culture and gender on the strength of the novelty dimension of love. There was no statistically significant interaction between the effects of gender and education level on novelty dimension, $F(1, 130) = 1.046, p = .308$. Neither, there were significant simple main effect of culture, $F(1, 130) = .460, p = .499$, nor gender present, $F(1, 130) = .899, p = .345$. This means that the novelty dimension of love is not affected by culture, gender or interaction between those two variables.

4.2 Study 1 - Interpretation

The goal of Study 1 was to investigate the differences in emotional experiences associated with the Dutch *liefde* and Polish *miłość* by measurements of valence, power, arousal and novelty dimensions. The results suggest that culture might have an impact on the power dimension of love emotion, as Dutch speakers scored in this respect significantly higher than the Polish speakers. Nevertheless, the overall lack of significant differences for valence, arousal and novelty is not surprising, as it is consistent with the general feature of basic emotions - their affective experiences are uniform across those two cultures.

4.3 STUDY 2 - Qualitative analysis

A series of short interviews with users of an dating app was conducted to investigate similarities and differences between concepts of Dutch *liefde* and Polish *miłość*.

Results. The analysis of the definitions of the word *liefde* as expressed by the Dutch speakers and the word *miłość* by Polish speakers revealed a number of interesting results. Firstly, love was described the most frequently in terms of "a feeling" (33), followed by "a bond" (4) or "a state" (3). The interviewees pointed out at "different types of love" (11), that it was "undefinable or indescribable" (7) or "broadly defined" (4), indicating that the word love was not

easily conceptualized. Further, there was more variety in the named terms across Polish group (11 terms) than Dutch group (7 terms). See Table 4 for more details.

Table 4: Results of the short interviews series with users of an dating app

What is love?	nl_f	nl_m	pl_f	pl_m
a feeling	7	6	12	8
an emotion	-	-	1	1
an bond (eg. emotional	2	1	1	-
a state (eg. emotional, spiritual	-	-	2	1
a power	-	-	-	2
a brain reaction	-	-	1	1
a cultural construct	-	-	-	1
broadly defined	1	-	3	-
undefinable or indescribable	1	2	2	2
love can be anything	-	1	-	2
everything is love	-	1	-	-
different types of love	7	-	2	2
Direction of love	nl_f	nl_m	pl_f	pl_m
giving love	15	1	9	13
receiving love	3	6	2	1
mutual love	4	11	10	1

Secondly, across both cultures and regardless of the speaker's gender, three explanations on how love starts were proposed: it is a bio-chemical reaction ("starts in our heads thanks to chemical reactions", "a reaction of our brain to the need when feeling loneliness", "caused bio-chemical reactions"), it was a sudden and uncontrollable event ("two random individuals suddenly feels love for each other in the same moment", "when you got overwhelmed by affection, attraction, connection with something or someone", "just happens spontaneously", "it appears", "something you feel and it either works or not") or, in contrary, it was a long process ("always moving forward/love is progressing", "you're developing if someone else feels good and safe by the way you're approaching them and how you're treating them", "that is a result of a developed relationship")

Thirdly, clear directions of the feeling were indicated, which was classified in the following manner. Expressions pointing at action from one person towards another ("to give", "to invest", "to make someone feel", "to sacrifice") were classified as giving love; expressions indicating action towards the speaker or passiveness ("to be

yourself", "to be loved", "to have partner that matches you") were classified as *receiving love*; expressions indicating exchange ("each other", "mutual", "reciprocal") were classified as *mutual love*. On the level of culture, there were small differences between the number of speakers referring to *giving love* and *mutual love*. The most visible discrepancy occurred in regard to *receiving love*. Taking the total number of occurrences, as this direction was mentioned three times more by Dutch speakers than Polish speakers. Remarkably, there were clear trends when looking closely at genders. The majority of Dutch females defined love in terms of giving love, in contrast to Dutch males, who put the most emphasis on the mutuality of this feeling followed by receiving love. Mutuality and receiving love were hardly ever mentioned by Polish male speakers, who framed it as giving love. There was a balance of giving love and mutual love among Polish females. More details in Table 4.

The analysis brought interesting insights in regards to elementary components of the definition of love. When comparing both cultures, the following components of love definition, were equally important: "safety", "freedom", "importance", "sharing", "happiness", "lasting feeling" and "common future".

Table 5: Elementary components of the concept love

Common	nl_f	nl_m	pl_f	pl_m
safety	1	3	1	2
freedom	1	3	3	1
importance	2	-	3	-
sharing	1	2	2	1
happiness	1	5	3	3
lasting feeling	3	-	1	2
common future	-	2	2	-
Specific for <i>liefde</i>	nl_f	nl_m	pl_f	pl_m
to love	4	5	2	1
acceptance	4	4	2	1
being yourself	4	4	2	-
affection	7	-	4	-
well-meaning	4	1	1	-
unconditionality	8	3	3	-
trust	5	8	5	2
spending time together	1	8	2	2
presence	-	6	-	2
Specific for <i>miłość</i>	nl_f	nl_m	pl_f	pl_m
support	-	5	5	5
attraction	1	1	3	4
intensity	-	-	1	2
respect	1	3	7	3
friendship	-	1	6	1
partnership	-	-	3	-
faithfulness	-	-	1	5
sacrifice	2	2	3	6
desire	1	1	2	4
devotion	1	-	1	3

Numerous noticeable tendencies in both cultures were detected. Overall, it was much more common among Dutch speakers to use

the verb "to love" to define the word love. Elementary concepts such as "acceptance" and "being yourself", equally represented by Dutch females and males, were more salient than among Polish speakers. In addition, Dutch females gave more importance to "affection", "unconditionality" and "well-meaning", when compared with other groups. Dutch males put clear emphasis on "trust", "spending time together" and "presence". More details in Table 5.

As it concerns the elementary components of the definition of love provided by Polish speakers, "support", "attraction" and "intensity" seemed to be equally important for female and male. "Respect", "friendship" and "partnership" were the most frequent components named by Polish females. Polish male, in contrast, used frequently components such as "faithfulness", "sacrifice", "desire" and "devotion" to define the word love. More details in Table 5.

Interestingly, there were a number of excessively positive or excessively negative comparisons mentioned mostly by Polish representatives, but not exclusively. The emphasis of the positive attributes of love was expressed by phrases such as "love can move mountains", "excellence", "power that heals everything", "a power, only one positive in life" and "a feeling that happens rarer than a lottery win" among Polish speakers, and "anything I have ever searched for, I have dreamed of, is sitting next to me", "a sort of feeling that let things blossom" or "magic" among Dutch speakers. The negative expressions compared love to "a sickness", "a state of drug intoxication", "a heavy misery", "an eternal longing", "a fire and water - endless fight, the bigger, the more intense" and that love "stands close to hatred" were expressed only by Polish speakers.

Lastly, men had the tendency to define love in a romantic way by describing a particular situation or person: "this person belongs to a small group of people (together with Julia Roberts and Katherine Heigl), who I would like to make love on the beach. Of course, with candles stuck in the sand", "by being in her proximity alone, you can already relax and have the feeling that all your worries and stress concerning sports, work, or school are gone for a while", "being genuinely happy when you see this person again", "someone with who you are fulfilled together, as dance or sex partner or someone's present adds to your fulfillment" or "every time you see this person he/she brings a smile on you face".

4.4 Study 2 - Interpretation

There are several interpretations for the above-mentioned results. Firstly, various descriptions of love, ranging from "biochemical reaction" through "social construct" to "power", and lack of coherence to when love starts confirmed the complexity of this concept. Secondly, the elementary components of love shared by both cultures can be clustered into intimacy ("safety", "importance", "sharing" and "happiness) and commitment ("lasting feeling" and "common future"), which refer to styles of love defined in the literature as companionate love, compassionate love, storge or agape. Surprisingly, the passionate love turned to be culture-specific, as it surfaced in the majority among Polish speakers ("intensity", "desire" and "attraction"). Thirdly, when looking at the culture-specific components, there is a clear reflection of values connected to cultural dimensions such as individualism, power distance and indulgence. Dutch conceptualization of love including "acceptance", "unconditionality", "being yourself" and "well-meaning" mirror treating

everyone as an autonomous entity, who searches for a compatible partner to fulfill their needs and expectations without the necessity to overly adapt. This approach is more realistic and implies being aware of what one will give and receive in a relationship, which is also reflected in the defined directions of love. Characteristic of Polish culture “sacrifice” and “devotion” and “support” stand on the opposite side, where the loyalty to in-group members is expressed by actions. Moreover, it might be strengthened by overall attachment to history, tradition and religion, where acts of devotion and sacrifice have been very present. Also, the negative connotation can be linked with the low level of indulgence, pessimism and little importance of fulfilling individualistic desires. Lastly, one might claim, it feels that other culture-specific components such as “respect”, “friendship” and “partnership” are complimentary, as they point at equality and acceptance. It could be that if those values are missing on the society level, it is important to obtain them in close relationships.

4.5 STUDY 3 - Linguistic Corpus

The goal of Study 3 was to examine authentic language expressions in Dutch and Polish to find the most important adjectives collocating with *liefde* and *miłość*. The top 10 adjectives per sub-corpus are presented in Table 6 together with their absolute frequencies (AF) and LogDice score (AM).

Sample. The Dutch corpora consisted of 815 articles (822 548 tokens) in total. The noun *liefde* occurred 1262 times in the sub-corpus made of Dutch women’s magazines and 132 times in the sub-corpus made of Dutch men’s magazines. The Polish corpora consisted of 876 articles (1 103 013 tokens) in total. The noun *miłość* occurred 1959 times in the sub-corpus made of Polish women’s magazines and 553 times in the sub-corpus made of Polish men’s magazines (Table 3).

Results. The adjectives that appeared regardless of culture and gender were “true”, “real”, “unique”, “honest”, “destined” (marked in red) referring to the authenticity of love and “big”, “huge”, “the biggest”, “limitless”, “full” and “everlasting” (marked in orange) pointing at its volume. In both sub-corpora consisting of articles written and/or directed to women the words “new”, “first”, “platonically”, “potential” and “romantic” (marked in yellow) were in the top of most frequent modifiers of love, referring to the freshness of love. The words that clearly differentiate Dutch from Polish sub-corpora are “unconditional”, “free” and “universal” (marked in pink). Further, “obsessive”, “crazy” and “passionate” were words mentioned only in the Polish sub-corpora consisting of articles written and/or directed at women (marked in purple). Last but not least, the only negative description of love occurred in the sub-corpus made of Polish men’s magazines, referring to imperfect love: “unfulfilled”, “lost”, “hopeless” and “rebound” (marked in gray).

4.6 Study 3 - Interpretation

The goal of Study 3 was to extract the most frequently used adjective describing love. Based on the analysis, it can be concluded that across both cultures the authenticity and volume components are common, as those two occurred across all sub-corpora. The common denominator of the data extracted from magazines for women

regardless of the language was the referral to newness of love. Next to it, a number of interesting culture-dependent variation surfaced. One of the most frequent words - among both women and men - describing Dutch *liefde* was “unconditional”, which overlap with the findings of Study 2. In respect to adjectives that emerged from the Polish women’s magazines, there was a clear cluster of words referring to intensity and attraction. It is somewhat surprising because although mentioned by Polish females speakers, the intensity of love was not the most frequent component seen in Study 2. Also, similarly to Study 2, a number of negative adjectives appeared in the sub-corpora written or directed at Polish men. The confirmation of the culture-specific components suggests their strong presence in the conceptualization of love on the culture level.

5 DISCUSSION AND FURTHER RESEARCH

In this section, the results of this study are discussed in light of earlier findings related to love emotion, the conceptualization of love and the impact of culture on both of these.

The goal of this research was to compare the experience and conceptualization of the Dutch *liefde* and Polish *miłość*. Firstly, a quantitative approach was applied to investigate the affective dimensions of love emotion, namely valence, arousal, power and novelty. The only significant difference was seen for the power dimension - Dutch speakers have the tendency to feel more assertive or slightly more dominant than Polish speakers while experiencing love. When taking into account the lack of significant discrepancies for other dimensions, this evidence seems too weak to conclude that culture impacts the way humans experience love emotion. This goes in line with the recent findings of Fisher and Hertenstein that love emotion can be decoded by distinctive signals, points at its generalizability and confirms classification of love as a basic emotion, just like fear, anger, joy [10, 11]. Secondly, two approaches were used to detect common and culture-specific components of the concept of love: a qualitative approach using data from short interviews and a corpus-analytic approach. The common components of love as expressed by Dutch and Polish speakers referred to companionate love based on intimacy and commitment. This is not surprising as the combination of those two components describe love in its broadest and purest sense without differentiation between the various possible objects of love (i.e. parents, child, lover, homeland, animal, etc) [17]. The emphasis on the all-embracing character of love was noticeable in the two overlapping clusters of the most frequent adjectives describing love, namely volume and authenticity. The difference in culture-specific components found in the data went parallel with the differences in Hofstede’s cultural dimensions. Further, the elementary components mentioned by Dutch speakers (i.e. “acceptance”, “affection”, “trust”, “spending time together”) and their more realistic view are comparable to how love was described by American speakers in the study of De Munck et al. [29]. The view of Polish speakers aligned more with Russians and Lithuanians whose views were more romantic and unreal; with Czech, who referred to love as “giving yourself mutually”, “work” and “years of tolerance”; and with French, who believed that “sacrifice” was necessary to make a relationship workable. It is also worth mentioning that gender had a meaningful impact on variation in how love was conceptualized. In general, men show a tendency

Table 6: An overview of the most common adjectives describing Dutch *liefde* and Polish *miłość*

Dutch magazines				Polish magazines			
Women's		Men's		Women's		Men's	
adjective (AF)	AM	adjective (AF)	AM	adjective (AF)	AM	adjective (AF)	AM
big <i>groot</i> (72)	11.66	unconditional <i>onvoorwaardelijk</i> (1)	11.88	true <i>prawdziwy</i> (55)	11.29	romantic <i>romantyczny</i> (20)	11.58
new <i>nieuw</i> (58)	10.95	true <i>waar</i> (3)	11.67	romantic <i>romantyczny</i> (29)	10.49	true <i>prawdziwy</i> (13)	10.56
real <i>echt</i> (30)	10.9	free <i>vrij</i> (3)	11.45	first <i>pierwszy</i> (45)	10.35	limitless <i>bezgraniczna</i> (4)	9.76
true <i>waar</i> (15)	10.49	consistent with <i>overeenkomstig</i> (1)	10.47	platonic <i>platoniczny</i> (17)	10.08	unfulfilled <i>niespełniona</i> (3)	9.34
unconditional <i>onvoorwaardelijk</i> (8)	9.67	fiery <i>wurig</i> (1)	10.47	huge <i>wielki</i> (27)	9.55	huge <i>wielki</i> (10)	9.31
romantic <i>romantisch</i> (7)	9.22	the biggest <i>allergrootste</i> (1)	10.47	old <i>stara</i> (11)	9.09	honest <i>szczerza</i> (3)	9.24
forbidden <i>verboden</i> (5)	9.02	calm <i>rustig</i> (1)	10.35	obsessive <i>obsesyjny</i> (7)	8.82	fiery <i>plomnienna</i> (2)	8.79
potential <i>potentieel</i> (4)	8.6	universal <i>universeel</i> (1)	10.3	unhappy <i>nieszczęśliwy</i> (7)	8.2	destined <i>pisana</i> (2)	8.79
only, unique <i>enig</i> (4)	8.5	everlasting <i>eeuwig</i> (1)	10.24	new <i>nowy</i> (7)	8.68	instant, rebound <i>zastępcza</i> (2)	8.78
full <i>vol</i> (3)	7.89	previous <i>vorig</i> (1)	10.09	passionate <i>namietny</i> (46)	8.57	lost <i>utracona</i> (2)	8.76
old <i>oud</i> (3)	7.76	real, authentic <i>echt</i> (2)	10.07	crazy <i>szalony</i> (6)	8.57	hopeless <i>beznadziejna</i> (2)	8.76

to describe love by exemplifying concrete situations more often than women (e.g. "being genuinely happy when you see this person again"). Both, interview and corpus-based data confirmed that Polish speakers, especially men, hold somewhat a negative view on love, which was seen earlier in the psycho-linguistic study on the love spectrum by Gawda [37].

There are several ways, the results of these studies could be extended in the future. Although the Grid questionnaire has been used to measure the affective dimensions of other emotions, it is questionable whether it was the most accurate means to investigate love emotion. It does not include scale items that would point at signals, as well as physical and mental reactions characteristic specifically for love emotion (googly-eyed gaze, touching, blushing face), making the measurements less accurate. Further, although culture and gender are important determinants of how certain emotions are conceptualized, it would be insightful to investigate how age impacts the choice of components defining love. Samples used in the current study were unified but limited to participants in age category 25-34, for whom love is in great degree associated with romantic love. With increasing life experience and changing priorities, the definitions of love might have become different. Last but not least, analysis of only one linguistic entity in the sub-corpora made of online articles served well as supportive material, however, to draw a stronger conclusion, other cultural products, like movies, books, poems or songs should be taken into account. Despite the study's limitations, we believe that it contributes to the evolving body of research about love as a basic emotion and understanding the role of cultural orientation in explaining the concept of love in general.

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