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Positive-negative asymmetry in the evaluation of political candidates: the study of frames of reference and context in similarity judgements.

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A doctoral dissertation
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Warsaw 2020

Words of Gratitude

Nie ukończyłabym tej pracy, gdyby nie ogromne wsparcie wielu osób, które na przestrzeni lat towarzyszyły mi w mojej drodze do ukończenia rozprawy doktorskiej.

Na wstępie chciałabym serdecznie podziękować Profesorowi Andrzejowi Falkowskiemu oraz Doktorowi Robertowi Mackiewiczowi za liczne dyskusje, sugestie i uwagi krytyczne, które ukierunkowały moje analizy i pozwoliły nadać pracy ostateczny kształt. Dziękuję za Wasze wsparcie, cierpliwość i wytrwałość. Chciałabym również podziękować Profesorowi Wojciechowi Cwalinie za cenne sugestie dotyczące koncepcji pracy doktorskiej.

Ogromne podziękowania składam Rodzicom i Rodzinie, w szczególności mojemu Bratu Błażejowi oraz Wujkowi Jankowi. Rodzicom dziękuję za umożliwienie mi realizacji mojego marzenia o pracy naukowej, a całej Rodzinie za wierne towarzyszenie mi w drodze. Jestem przekonana, że bez Waszych ciepłych słów, wsparcia i wiary w to, że podołam, nie byłabym w stanie ukończyć tego, co sobie zamierzyłam.

Podziękowania kieruję również do wszystkich, którzy na różnych etapach towarzyszyli mi w mojej podróży: Sylwii, Ninie, Jadzi, Moni, Marcelinie, Magdzie, Joanie, Justynie, Rafałowi, Krzysztofowi i wielu innym, których nie sposób wymienić z imienia. Wszystkim Wam z całego serca dziękuję.

Bez Waszej miłości, mądrości, życzliwości i cierpliwości, nie byłabym w stanie ukończyć prac nad tą rozprawą. Jestem wdzięczna, że mam Was w moim życiu.

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Abstract

The following doctoral project focuses on different instances of positive-negative asymmetry observed in the evaluation of political candidates. First, I analyse how additional positive and negative information about candidates affect their evaluation, depending on whether the candidate is generally favourable or unfavourable. Second, I investigate valence framing effects. More precisely, I test how comparisons to an ideal and bad politician as well as the framing of a decision in terms of support or rejection influences candidate preference. I also analyse how well people differentiate among a few favourable and unfavourable options. Finally, I compare theoretical and observed similarities of political candidates to the categories of an ideal and bad politician.

The research is theoretically grounded in Tversky's contrast model of similarity which assumes that objects can be perceived as the collections of features that are common to all objects in a category and distinctive for only one particular object. Based on the model, it is possible to predict how changes in common and distinctive features affect similarity judgements, depending on the ratio between these features. More precisely, the model predicts that operations on common features are more effective if two objects are generally dissimilar (i.e. have more distinctive features than common ones), whereas operations on distinctive features lead to greater changes in similarity if two objects have more common features than distinctive ones. Adopting this framework to the effect of additional positive and negative information about candidates, it can be predicted that additional positive features will increase the evaluation of unfavourable candidates but will not change the perception of favourable ones. For negative features, I expect that they will decrease the evaluation of a "good" candidate but will not change the appraisal of a "bad" one.

The results of seven empirical studies generally provide evidence for the theoretical assumptions of the model, showing that the effectiveness of additional positive and negative features is moderated by the favourability of candidate image. Overall, negative attributes were found to lead to greater changes in candidate perception and be a better predictor of affective evaluation and voting intention than positive attributes. Furthermore, as expected, respondents differentiated better among positive options than the negative ones, although typically the perception of difference was limited to situations in which candidates were evaluated with regard to their similarity to an ideal politician and was not present for similarity to a bad politician. Finally, the comparison of theoretical predictions of similarity values with empirical findings showed that although the predicted similarities fit well the evaluations of negative candidates, there were significant deviations for positive candidates who were evaluated less favourably than it would be expected.

The findings of my doctoral research add to the discussion on positive-negative asymmetry in the evaluation of social objects as well as studies on similarity judgements. The results of my findings are interpreted with regard to such psychological effects as the ratio-difference principle, contrast effects, feature diagnosticity, density hypothesis as well as cognitive and motivational factors in the evaluation of positive and negative objects. Although the research is set in the political context, the results can be generalized to other settings and have many theoretical and practical implications.

Streszczenie

W niniejszej pracy analizowane są różne przykłady asymetrii pozytywno-negatywnej obserwowanej w ocenie kandydatów politycznych. W swoich badaniach skupiam się m.in. na tym, jak dodatkowe pozytywne i negatywne informacje o kandydacie wpływają na jego ocenę w zależności od tego, jak przychylnie bądź nieprzychylnie postrzegany jest polityk. Dodatkowo, przedmiotem moich badań są pozytywne i negatywne ramy interpretacyjne (*valence framing*), gdzie analizuję to, jak porównania do idealnego i złego polityka oraz przedstawienie kontekstu wyborczego jako wyboru lub odrzucenia wpływają na preferencje wyborcze. Dodatkowym obiektem badań są dysproporcje w różnicowaniu pomiędzy kilkoma mniej lub bardziej pozytywnymi i kilkoma negatywnymi opcjami. W pracy porównuję także teoretyczne i obserwowane podobieństwa kandydatów politycznych do kategorii idealnego i złego polityka.

Podstawą teoretyczną pracy jest kontrastowy model podobieństwa Tversky'ego, który opisuje podobieństwo między dwoma obiektami jako zależność między cechami wspólnymi i różnymi charakteryzującymi dwa zbiory. Model pozwala przewidzieć wpływ cech wspólnych i różnych na podobieństwo pomiędzy obiektami w zależności od proporcji tych cech. Zgodnie z przewidywaniami cechy wspólne mają silniejszy wpływ w sytuacji, gdy obiekty są mało podobne, natomiast cechy różne są silniejsze w sytuacji, gdy obiekty są do siebie podobne. Przekładając te zależności na wpływ cech pozytywnych i negatywnych na ocenę kandydatów politycznych, można zakładać, że dodatkowe cechy pozytywne podniosą ocenę kandydata postrzeganego nieprzychylnie, ale nie wpłyną na ocenę kandydata pozytywnego. W przypadku cech negatywnych zakładam, że obniżą one ocenę „dobrego" kandydata, ale nie zaszkodzą kandydatowi „złemu".

Wyniki siedmiu badań eksperymentalnych ogólnie potwierdziły przewidywania teoretyczne, wykazując że siła oddziaływania dodatkowych informacji pozytywnych i negatywnych na ocenę kandydata jest zależna od jego wyjściowego wizerunku. Dodatkowo cechy negatywne okazały się silniejsze w porównaniu do cech pozytywnych oraz były lepszym predyktorem oceny afektywnej i poparcia wyborczego. Zgodnie z przewidywaniami badania wykazały także lepsze różnicowanie pomiędzy kilkoma mniej lub bardziej korzystnymi opcjami niż pomiędzy opcjami niekorzystnymi. Efekt ten był jednak zazwyczaj ograniczony do ocen dotyczących podobieństwa do idealnego polityka i nie występował w sytuacji, gdy punktem odniesienia był zły polityk. Dodatkowo porównanie teoretycznych i obserwowanych podobieństw wykazało, że o ile oceny kandydatów negatywnych są zgodne z przewidywaniami modelu, o tyle kandydaci pozytywni są oceniani mniej przychylnie niż wynikałoby to z modelu.

Wnioski oparte na przeprowadzonych badaniach doktorskich poszerzają wiedzę z zakresu asymetrii pozytywno-negatywnej w ocenie bodźców społecznych oraz badań nad podobieństwem. Wyniki badań interpretowane są w świetle takich zjawisk psychologicznych jak reguła różnicy proporcji (*ratio difference principle*), efekt kontrastu, diagnostyczność cech, hipoteza gęstości, jak również procesów poznawczych i motywacyjnych towarzyszących ocenie bodźców pozytywnych i negatywnych. Mimo że badania dotyczą oceny kandydatów politycznych, wyniki z powodzeniem mogą odnosić się do innych bodźców oraz mają szereg implikacji teoretycznych i praktycznych.

Acknowledgements

Publications:

Some of the studies described in the following dissertation have been already published or accepted for publication in two research journals. The descriptions of the studies presented in this dissertation are to a some extent a paraphrase of these papers.

The Preliminary Study described in the methodological section was published in *Frontiers in Psychology* (Falkowski & Jabłońska, 2018).

The discussion of different types of framing presented in the Literature Review section was published in *Journal of Political Marketing* (Falkowski & Jabłońska, 2019).

The results of Study 1 were submitted and accepted for publication in *Journal of Political Marketing* (Jabłońska & Falkowski, in press).

The findings of Study 2 were partially published in *Frontiers in Psychology* (Falkowski & Jabłońska, 2018).

Funding:

The conducted research was to a large extent funded by the PRELUDIUM grant sponsored by the National Science Centre, Poland, grant number 2015/19/N/HS6/00767. The title of the grant: *Positive-negative asymmetry in preference judgements. Valence framing and contrast model of similarity in the evaluation of political and consumer brand*

Introduction

The question of good and bad is probably one of the most important questions asked by people of all times, denominations, professions and worldviews. The ability to differentiate between positive and negative stimuli, safe and potentially threatening situations as well as friendly and unfriendly people are the skills that individuals develop early on and use throughout their lives. The evaluation of valence is probably the first and most basic dimension of any judgement and the "good" and the "bad" seem to be two symmetrical poles of this dimension. However, as research suggests this symmetry seems not to hold. Plethora of evidence indicates that depending on various factors positive and negative entities can have a stronger or weaker effect on such aspects of human functioning as information processing, attitude formation, social perception, persuasion and others. A disproportional effect of favourable and unfavourable stimuli (comparable in their size but having the opposite valence) is called positive-negative asymmetry. Research in that domain concentrates mostly on two opposite phenomena. The first one is the much-publicized negativity effect, well-captured in Baumeister and others' seminal article "Bad is stronger than good" (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001) or Kahneman and Tversky's byword that "losses loom larger than gains" (1979, p. 279). The second one – positivity bias – seems to be slightly less prominent, but still highly relevant in research on social judgements (Fiske, 1980; Peeters, 1991).

Typically, negative information is assumed to be more informative. For instance, negative information was found to have a greater effect on first impressions (Richey, McClelland, & Shimkunas, 1967) and political support (Lau, 1982) than their positive counterparts. However, there is enough evidence to challenge the universality of this effect.

For example, an extensive body of research on morality and competence dimensions have shown that people focus on negative traits if they pertain to morality but find positive information to be more diagnostic of one's competence (Cwalina & Falkowski, 2016; Lau, 1982; Wojciszke, Brycz, & Borkenau, 1993).

As research on contrast effects, expectancy-contrast theories and figure-ground hypothesis predict, more diagnostic is a feature that is less expected, typical or usual in a particular context. Regardless of its valence. For instance, if a person expects politicians to be dishonest, he or she will find positive information to be more meaningful compared to a voter who generally trusts his or her party. Those who trust their candidates will, on the other hand, react stronger to negative information as it is less expected (Lau, 1985).

As a matter of fact, it can be argued that any judgement or evaluation is a matter of comparison. This observation was already noted by William James who said that "this sense of sameness is the very keel and backbone of our thinking" (James, 1890/1950, p. 459). Indeed, comparisons and similarity judgements have been shown to be important elements of such cognitive processes as problem solving, categorization, decision-making, memory retrieval, inductive reasoning and others (Goldstone, 1999).

Furthermore, a final or, so to say, global evaluation of a particular object as bad or good may depend not only on a set of features that can be attached to this object but also on contextual cues. For instance, the same politician can be evaluated differently depending on whether he or she is compared to some great political figure who inspires masses or a dictator who torments a nation. His or her evaluation can also differ if the candidate is presented among other candidates who are generally similar to him or her or different. The object to which a politician would be compared (so called "referent" or "comparison standard") may be the result of one's individual characteristics, such as previous knowledge, expectations or

social norms. Alternatively, the activation of a particular referent (for instance an image of an ideal politician or a bad politician) may be the result of conscious endeavours of politicians or PR and marketing specialists who will try to present (or "frame") the message in the way that is most beneficial for their interests. Finally, the evaluation of a politician may be task dependent. People may evaluate political candidates differently depending on whether they are asked to choose or reject a candidate, frame their opinion in terms of support or opposition, or select a person they like or dislike most. All of these factors are likely to constitute certain reference points and frames that will influence the evaluation process.

Positive-negative asymmetry assumes that comparable in their strength favourable and unfavourable information will have a disproportional effect on object evaluation. Typically, all things being equal, negative information is said to have a more prominent effect on final evaluation compared to the effect of positive information. However, there are exceptions to that rule and the final effect of a new piece of information about an object (positive or negative) is likely to depend on whether this object is generally perceived as favourable or unfavourable. Imagine two candidates: one of them is honest, hardworking and devoted. The other one is dishonest, lazy and inattentive. The rumour that a politician has been involved in a money scandal is much more likely to shatter the image of the first candidate than the second one. It may also significantly lower the perception a "good" candidate but not necessarily deteriorate the appraisal of a candidate who already is deemed as inadequate for the post. The effect can be explained with the ratio-difference principle according to which the same changes in terms of their magnitude are more prominent if they take place within smaller sets than if they pertain to bigger sets. The effect of additional positive information, however, is less certain. On the one hand, additional positive information is likely to enhance the evaluation of an unfavourable candidate, making him or

her slightly less negative. On the other hand, new favourable characteristics may also increase the appraisal of a favourable candidate, making him or her even better for the post. Thus, the effect of negative information may be more radical and lead to more extreme judgements, whereas the effect of positive information is likely to be gradual.

Thus, the aim of my research is to investigate how various modifications in the way a particular object is presented affect its perception. More precisely, I will analyse how the addition of positive and negative features to the description of a politician will change his or her perception depending on whether they are added to a candidate with a favourable or unfavourable image. Additionally, I will investigate how well people differentiate between positive candidates and the negative ones. I will also test how comparisons to a positive and negative frame of reference (for example an ideal or bad politician) will change the perception of real-life and fictitious political figures. Finally, I will investigate how the framing of a decision in terms of choice and rejection modifies the preference for a selected candidate. The completion of these research aims will offer a new insight into positive-negative asymmetry in candidate evaluation by showing how the effect of positive and negative features is modified by valence framing (such as reference points) and favourability of candidate image. Additionally, in order to provide a better understanding of the investigated effects, I will test a potential mediating role of affective evaluation in the relationship between framing and candidate preference.

The differential effect of positive and negative information can be explained by Tversky's contrast model of similarity (1977). In his seminal paper, *Features of similarity*, Tversky proposed a new set-theoretical approach in which he analysed similarity between objects defined as sets of features. These sets consisted of some features that were shared by two objects as well as features that belonged only to one of the objects but not the other.

Tversky described the similarity between two objects as a function of their common and distinctive features. People would perceive two objects as more similar when these objects have more common features and less similar when they have more distinctive features. Using the distinction into common and distinctive features as well as manipulating the valence of the referent (so that it is either positive or negative), I can predict based on the model how additional positive and negative features influence similarity between an object (that is a particular politician, be that favourable or unfavourable) and its referent (that is an image of an ideal or bad politician). The empirical verification of the predictions of the ratio model of similarity will be one of the aims of my research.

The results of conducted empirical studies will be used to explain positive-negative asymmetry observed in the evaluation of political candidates, which may be a valuable contribution to the research on this effect as well as studies on similarity judgements, framing and person perception. Furthermore, the findings are likely to have many practical implications and provide suggestions on how to present a person or a brand most effectively. For instance, the conclusions may help to decide which of the strategies – the promotion of one's positive features or the neutralisation of one's negative characteristics – will be most beneficial, depending on how favourably or unfavourably the candidate is perceived by his or her electorate. If the predictions of the model are correct, it would mean that increasing one's strengths is more likely to help a relatively bad candidate than a rather positive one. Furthermore, the findings may advise on which of the politicians (perceived rather favourably or unfavourably) is more likely to benefit from the use of negative advertising, an inglorious advertising strategy on whose effectiveness research is rather equivocal. Finally, although all of my studies will be restricted to the political context, I believe that their results may be generalised to other settings and objects.

1 Positive-negative asymmetry

Positive – negative asymmetry refers to two complimentary tendencies in the way people respond to positive and negative objects, information and events. Typically, negative information contributes more strongly to decisions and behaviours than positive information. The effect is known as negativity effect or negativity bias. On the other side of the fence, there is positivity bias which accounts for a general tendency of people to focus on positive aspects, keep positive memories and expect positive outcomes. However, as it will be shown below the opposing findings on positivity bias and negativity effect are not so contradictory as it seems and may be reconciled with contrast effects, expectancies and the research on feature diagnosticity. As a result, general tendency to treat positive objects as natural reference points leads to situations in which negative stimuli stand out in a harsh contrast to the expected positive background. Consequently, the stronger effect of positive or negative events is not fixed but rather malleable and dependent on contextual factors.

1.1. Negativity effect

Negative entities have a stronger effect compared to positive ones of the same value. Such an observation was found in the perception of social and non-social stimuli (Hoehl, Hellmer, Johansson, & Gredebäck, 2017; Lau, 2007; Öhman, Flykt, & Esteves, 2001; Peeters, 1991), impression formation (Czapinski, 1986; Fiske, 1980; Hamilton & Zanna, 1972; Lewicka, Czapinski, & Peeters, 1992; Peeters & Czapinski, 1990; Skowronski & Carlston, 1989), consumer decisions (Ahluwalia, 2002; Yang & Unnava, 2016) as well as economic and political behaviour (Akhtar, Faff, Oliver, & Subrahmanyam, 2011; Kahneman & Tversky, 1979; Soroka, 2006).

Studies on marital satisfaction conducted by John Gottman showed that in order to make a marriage work the ratio of positive to negative interactions in a couple should equal 5: 1 (e.g. Gottman, Coan, Carrere, & Swanson, 1998). The research on social perception has also found that person evaluation is more dependent on negative features than the positive ones (Czapinski, 1986; Fiske, 1980; Hamilton & Zanna, 1972; Peeters & Czapinski, 1990; Skowronski & Carlston, 1989). Negative information was also shown to be remembered better (Pratto & John, 1991) and negative first impressions were found to be hard to change with subsequent positive information (Richey, McClelland, & Shimkunas, 1967).

The extensive research on negativity effect shows that the phenomenon is not homogenous and it can have various origins, manifestations and explanations (Kellermann, 1984; Koch, Alves, Krüger, & Unkelbach, 2016a; Rozin & Royzman, 2001). The main distinction of negativity effect falls broadly into two categories: an affective and informational one (Lewicka, 1993; Lewicka et al., 1992; Peeters & Czapinski, 1990), however, other typologies can be found (Rozin & Royzman, 2001). The affective negativity effect refers to an emotional reaction to negative objects. If an object is perceived as negative, it will trigger a natural fight or flight mechanism. Such affect-driven responses are generally impulsive and restricted to a very simple evaluation of an object. A simple example of affective negativity effect would be a stronger dislike of a sardine milkshake compared to a desire for a chocolate shake or one's dissatisfaction over a dull movie compared to a delight with a good comedy. The informational negativity effect assumes that negative entities carry more information and thus are a better cue for decision-making and behaviour. For instance, a couple looking for a new apartment will find information that their real estate broker is dishonest and overprices apartments as more important and relevant than an information that he has many attractive apartments in his portfolio. It will happen because negative

information, as potentially threatening, has more significance and thus is more carefully processed and analysed.

Generally, two alternative explanations for negativity effect are typically provided, which correspond well to the distinction into the affective and informational negativity effect. The affective negativity effect is often described with regard to theories pointing to a higher adaptive value of negative stimuli as well their greater effect on motivational tendencies compared to the effect of positively valenced situations (Rozin & Royzman, 2001). According to these explanations, people react stronger to negative entities (such as a potential attacker) compared to the positive ones (such as a potential friend) because if they did not, they would sooner or later pay a price with their life, health or property. The bias is primarily explained with cost-orientation hypothesis according to which people are more motivated to avoid costs than to approach gains (Lau, 1982).

Another explanation is provided by Taylor (1991) who argued in her mobilization-minimization hypothesis that negative events lead to fast and strong reactions on the physiological, cognitive and emotional level because they present a threat or a problem that needs to be tackled and addressed immediately. Pleasant events do not trigger such responses because, if omitted, they would lead to less harmful potential outcomes. According to the mobilization-minimization hypothesis, this initial mobilization of the organism for negative situations is then followed by opposite positive physiological, cognitive, and behavioural processes aiming at neutralizing the negative effect of the initial stimulus. The aim of these processes is to keep the organism in equilibrium and adapt to changing circumstances.

The informational negativity effect on the other hand has been often attributed to higher diagnosticity and salience of negative information. Negative features carry more information and thus are better cues in a decision-making process. According to Rozin and

Royzman (2001), “negative entities are more varied, yield more complex conceptual representations, and engage a wider response repertoire” (p. 296). Research on the differences in the processing of positive and negative information indicates that unpleasant information leads to more complex cognitive processing (Ito, Larsen, Smith, & Cacioppo, 1998; Smith, Cacioppo, Larsen, & Chartrand, 2003). For instance, Pratto and John (1991) showed that in a colour naming task, participants were slower to name colours of words that represented undesirable traits (such as “greedy”). Likewise, Wentura, Rothermund and Bak (2000) found that the processing of negative words interferes with the processing of other information more than the processing of positive words.

Repeatedly linguistic studies have also shown negative categories to be more diverse and complex than positive ones (Rozin, Berman, & Royzman, 2010). For instance, Averill (1980) found that more than 60% of words describing emotions pertain to negative emotional states and affects, corroborating earlier studies by Carlson (1966) who came up with an even higher number. To a similar conclusion came Claeys and Timmers (1993) when stated that “the universe of different negative behaviours is cut in smaller pieces than the universe of different positive behaviours” (p. 118). Analysing the category breadth of various positive and negative words, the scholars found that unfavourable traits were seen as more different from each other, pointing to a linguistic sign of greater importance of negative information, parallel to the higher dominance of words pertaining to bad emotions than the good ones.

The difference between positive and negative entities was also a subject of studies of Unkelbach and others (Alves et al., 2015; Koch et al., 2016a; Unkelbach, 2012; Unkelbach, Fiedler, Bayer, Stegmüller, & Danner, 2008). The scholars challenged the affective and motivational underpinnings of negativity effect and instead proposed density hypothesis, according to which longer processing of negative entities was a result of ecological

differences between positive and negative information. The hypothesis states that a piece of positive information is more similar to another piece of positive information (and thus dense), while the structure of negative information is more differentiated. This hypothesis was corroborated by the studies using multidimensional scaling (Unkelbach et al., 2008) and other spatial arrangement methods (Koch et al., 2016a). Their findings showed that positive words were more closely related to each other than negative words. Experimental research on the topic has provided some further evidence, showing not only shorter latency time for the correct categorization of positive words as positive (Unkelbach et al., 2008) but also their lower discriminability in recognition memory task (Alves et al., 2015).

1.2. Positivity effect

On the other side of the fence, there is a positivity bias which accounts for a general tendency of people to focus on positive aspects, keep positive memories and expect positive outcomes in their lives. Positivity effect, also known as the "Pollyanna principle", optimism bias or positivity bias, predicts that people tend to construe, perceive and remember reality in a positive manner, including a tendency to approach unknown entities (be that other people, events or objects) with positive rather than neutral expectations (Hoorens, 2014). Most often, the positivity effect is explained with range-frequency hypothesis which rests on the assumption that the majority of events and outcomes in life are positive (Parducci, 1963). As summarized by Kellerman (1984), "in essence, individuals often perceive themselves as existing in a world of positive expectations" (p. 39).

For example, people tend to overestimate the probabilities of positive outcomes such as positive interpersonal relationships (De Soto & Keuthe, 1959), winning bets (Page, 2009) or living a happy life (Chambers, Windschitl, & Suls, 2003), while underestimating the

probability of negative outcomes such as having a heart attack, being robbed, losing a job, attempting suicide or having unwanted pregnancy (Burger & Burns, 1988; Chambers & Windschitl, 2004; Chambers et al., 2003; Helweg-Larsen & Shepperd, 2001). Furthermore, research shows that people are predominantly happy with their lives (Cummins & Nistico, 2002) and tend to remember their past through rose-coloured glasses (Bower, 1981; Walker, Skowronski, & Thompson, 2003). Interestingly, the effect seems to be independent from such factors as culture and country (except for extremely poor countries) or even income and health (except for depressed people) as well as it is visible in surveys on both general life satisfaction and satisfaction with a great variety of specific aspects of it (Hoorens, 2014).

1.3. Positive-negative asymmetry in impression formation and political candidate evaluation

The literature on impression formation and person perception provides ample proof for positivity and negativity effects. Although contradictory evidence can be found, there is a convincing body of research suggesting that people tend to perceive others in a rather positive manner, unless proved otherwise. For instance, the research on first impressions showed that when asked to evaluate unknown people on five dimensions such as attractiveness, likeability, trustworthiness, competence, and aggressiveness, people displayed a far higher positivity in judgments made after 100-ms exposure (Willis & Todorov, 2006). Such a result gives grounds to the assumption that the person positivity bias (Sears, 1983) may be a default option for conditions of minimal information in situations which do not pertain to the evaluation of threatening (or potentially threatening) stimuli.

Despite the overall positivity bias, the research on impression formation has been also one of the areas in which negativity effect was found most often (Baumeister et al., 2001). The effect seems to be especially true for the evaluation of political candidates who are

generally very much distrusted by the public (Fiske & Durante, 2014). For instance, the results from wide national election surveys showed that when talking about their voting behaviour, people were twice more likely to focus on negative information about their candidates compared to the positive ones (Lau, 1982). They also mentioned far more negative affects towards their politicians (such as anger, fear, disgust, and fear) than their positive counterparts (like hope, pride and sympathy). Using historical data and analysing how the perception of presidents Carter and Regan was influenced by positive and negative traits ascribed to them, Lau (1982) also showed that people were more likely to attribute far more negative attributes to their heads of state than the positive ones.

However, even in the distrusted realm of politics, some traces of positivity bias can be found. For instance, Lau (1985) argued that even though the public held a rather negative view of politicians as such, people might still expect individual politicians to be like everyone else, that is positive and good. Quoting a research conducted by Sears and the results of Gallup polls from years 1935 to 1975, Lau (1985) asserted that 76 percent of all politicians evaluated during that time were perceived positively. However, as shown by Nilsson and Ekehammar (1987) this general tendency seems to be moderated by the perceived similarity to the person who makes the evaluation, that is positive traits were shown to be more often attributed to those who were similar to people making the judgments. Another moderator of this general positivity bias is the nature of the feature itself. For instance, the tendency to attribute positive traits was found to be far more dominant in the domain of competence than morality (Lau, 1982; Skowronski & Carlston, 1989; Wojciszke et al., 1993).

The differential effect positively and negatively valenced words related to competence and morality are yet another example of positive-negative asymmetry. Many studies have shown that people place more importance on favourable traits related to

competence but give greater value to negative information if it concerns morality dimension (Fiske, Cuddy, & Glick, 2007; Wojciszke, 2005). The effect is often attributed to different informativess (Fiske, 1980) and diagnosticity (Skowronski & Carlston, 1987, 1989) of these features. Negative information about one's morality is more indicative of one's wickedness than positive information about his or her virtue. For instance, information that a particular political candidate had an affair or lied in his testimony is more diagnostic of his moral behaviour than the fact that he or she supports charitable causes. The effect can be interpreted as an example of informational negativity effect and it arises due to a social norm that expects people not to cheat or lie. Such a presumption constitutes a positive but natural state, at the background of which a betrayal or a lie would seem to be extreme and rare. In a similar vein, positive traits and behaviours were found to be more diagnostic in competence domain, so that a success is perceived as more indicative of one's capabilities than a failure of one's inaptitude. Thus, an information that a candidate received an acclaimed award or pushed through a difficult bill is more informative about his/ her abilities than the news that s/he did not do that.

The positive-negative asymmetry with regard to traits related to morality and competence has been also found in political studies which showed that when asked about politicians' positive features, voters typically mention traits related to competence (such as strong leader and knowledgeable), whereas asked about negative features they focus on traits from morality category (such as dishonest or power-hungry, Lau, 1982). Furthermore, although both domains have been shown to be good predictors of voting behaviour (Cwalina & Falkowski, 2016; Leary, 1996; Miller, Wattenberg, & Malanchuk, 1986; Wattenberg, 1991), morality-related traits seem to take some privilege (Cwalina & Falkowski, 2016; Mondak, 1995; Wattenberg, 1991). For instance, in their studies on the image of Polish

presidential candidates, Cwalina and Falkowski (2016) found honesty to be the most important characteristics both in 1995 and 2000 (80.3% and 89.6%, respectively), followed by competence in the second place in 1995 (47.3%) and in the fourth place in 2000 (24.2%).

1.4. Positivity bias and negativity effects at different levels of psychological explanation

Neither of the effects – positivity bias and negativity effect – seems to be universal. Variety of explanations provided for each of the effects shows that the effects are not homogenous, with more than one phenomenon involved and more than one theory to account for them all (Rozin & Royzman, 2001; Taylor, 1991). Moreover, it seems that both claims that "bad is stronger than good" (Baumeister et al., 2001) as well as that "in essence, individuals often perceive themselves as existing in a world of positive expectations" (Kellermann, 1984, p. 39) are true.

Positivity bias can be reconciled with negativity effect as shown in numerous works that instead of focusing on one of the effects examine the circumstances which moderate the prevalence of each type of information (Blanz, Mummendey, & Otten, 1995; Mummendey, Otten, Berger, & Kessler, 2000; Peeters, 1971; Peeters & Czapinski, 1990; Soroka, 2006). Of many possible interpretations discussed, expectancy-contrast theories and figure-ground hypothesis (Lau, 1982, 1985; Skowronski & Carlston, 1989) as well as the expected normativity and diagnosticity of positive and negative features (Fiske, 1980; Kellermann, 1984; Reeder & Brewer, 1979) seem to be best explanations of that differential effect. According to these assumptions, at the benevolent and positive background, any negative entity will stand out in stark contrast and thus will seem to be stronger.

The stronger effect of negative information presented at the positive background can be also explained with regard to global and local processing. A global processing style

describes situations in which an object is analysed from a broader perspective, whereas a local processing style pertains to a narrower and more detailed analysis (Navon, 1977). Typically, positive emotions and moods are associated with the first style, whereas negative moods and emotions with the latter (Gasper & Clore, 2002; Ji, Yap, Best, & McGeorge, 2019; Srinivasan & Hanif, 2010). Using this distinction to explain the figure-ground hypothesis, it can be said that global processing encourages people to see "the bigger picture" and perceive the figure as not different from the ground, whereas local processing promotes a more careful analysis in which the figure is separated from the ground. If so, negative information about an object is likely to stand out more than the positive one.

The arguments for figure-ground hypothesis and contrast effects are also delivered by Lau (1985) who, using presidential election surveys, showed that negative information was a much stronger predictor of presidential support for voters who generally trusted politicians. The effect can be explained with the fact that unanticipated unfavourable information (e.g. a politician took a bribe) stood out (i.e. was figural) against a general expectation about politicians to be honest and incorruptible (i.e. the ground). To further support figure-ground hypothesis, Lau also tested the effect that positive information had on voters who distrusted political figures. In line with the argument, positive features should be stronger among voters who did not believe in politicians' honesty. The findings provided evidence for this claim. Interestingly, however, the effect of negative information on the attitudes of trusting voters was more than twice as strong as the effect of positive information on the attitudes of voters who doubted in politicians' honesty. In a similar vein, Craig and Rippere (2014) found that negative campaign ads were especially damaging to political candidates who were perceived by the public as trustworthy.

2. Framing and frames of reference

So far, I have provided empirical evidence that the effect of features of equal value but opposite valence is dependent on various factors such as feature characteristics (e.g. whether it is related to competence or morality), the individual characteristics of a person making the evaluation (e.g. previous knowledge or one's expectations) and context (e.g. other features presented). Additionally, the way a particular feature or an object is evaluated depends also on the manner in which it is presented. For instance, an evaluation of a political candidate may be affected by such factors as the topics mentioned in political debates or the way politicians are presented in mass media. All these elements will create the so called frames of reference that will build the context of the decision-making process and affect the final decision. Additionally, it is likely that the selection of a candidate will depend on whether the choice situation is presented in a positive (the choice of a better candidate) or negative manner (the rejection of a worse candidate). All these elements are instances of framing – a process that modifies the way in which an issue is presented.

2.1. Defining the terms: loose and strict approach to framing

The essence of frame theory was well explained by Minsky (1975) who said:

> "When one encounters a new situation (or makes a substantial change in one's view of a problem), one selects from memory a structure called a frame. This is a remembered framework to be adapted to fit reality by changing details as necessary" (Minsky, 1975, p. 212)

Understood in such a way, a frame can be defined as a mental construction of an object or a person on the basis of memory schemata and previous experience (Cwalina,

Falkowski, & Newman, 2015). Numerous schemata are available and serve as possible frames of reference that can shape the perception and interpretation of a given person or an event. By activating some concepts, values or emotions rather than others, framing changes the underlying considerations used in one's evaluation (Chong & Druckman, 2007b; Price, Tewksbury, & Powers, 1997). Most often the activation of particular frames is a result of changes in the way how the message is structured or the selection of a certain topic that becomes a focal point of communication (Newman, Cwalina, Falkowski, Newman, & Jabłońska, 2020).

Different types of framing have been identified. They can be divided into loose and strict definitions of the effect (Chong & Druckman, 2007b; de Vreese, 2005; Falkowski & Jabłońska, 2019). The loose definition describes framing as "an internal event that can be induced not only by semantic manipulations but may result also from other contextual features of a situation and from individual factors" (Kühberger, 1998, p. 24). It can be exemplified with the use of such terms as "pro-choice" and "pro-life" in discourse on abortion, where both parties present the same issue from different standpoints. The loose approach to framing is most often adopted by researchers in the field of political communication and discourse who focus on such topics as issue and emphasis framing or agenda setting which refer to the importance that a communicator chooses to place on particular aspects of a given message (Chong & Druckman, 2007b; Druckman, 2001).

The strict understanding of framing pertains to the wording of formally identical problems which present the same information in a semantically different manner. This type of framing is often referred to as equivalence framing or valence framing. An example of such a frame may be a situation in which voters are presented with two candidates and asked to either choose the better candidate or reject the worse or state whether they support or

oppose a particular candidate (Bizer, Larsen, & Petty, 2011; Bizer, Žeželj, & Luguri, 2013; Bizer & Petty, 2005). Another famous example is the Asian Disease Problem described by Kahneman and Tversky (1979) who showed that people preferred safe options if a matter was presented in a positive frame (lives saved), whereas chose a riskier option in a negative frame (lives lost). Importantly, the effect held although compared situations were logically equivalent and had the same expected utility. Various types of valence framing such as risky choice framing, attribute framing and goal framing have been distinguished (Kühberger, 1998; Levin, Schneider, & Gaeth, 1998) and studied in such domains as risk perception (Kahneman & Tversky, 1979; Shafir, Simonson, & Tversky, 1993), health decisions (Gong et al., 2013; Krishnamurthy, Carter, & Blair, 2001; Marteau, 1989) or ethical issues (Kern & Chugh, 2009; Levin, Schnittjer, & Thee, 1988).

The topic of valence framing has been also extensively studied in the field of political behaviour, where the framing of a certain issue in terms of either support or opposition seems to be quite natural, especially in two-party political systems like for instance in the United States of America. For instance, in a series of experiments Bizer and collaborators (Bizer et al., 2011, 2013; Bizer & Petty, 2005) showed that thinking in terms of opposition to an unwanted candidate resulted in a more favourable attitude toward a preferred politician compared to a situation in which the evaluation was simply framed as the support of a preferred candidate. In further studies, Bizer, Žeželj and Luguri (2013) showed that the effect was moderated by a higher depth of information processing of negatively valenced information.

2.2. Framing effects in prospect theory

Framing effects are commonly taken as evidence for incoherence in human decision-making as they tend to demonstrate systematic reversals of preference in situations in which the same issue is presented in two different but logically equivalent manners. This violation of invariance was also an area of much research conducted by Amos Tversky and Daniel Kahneman which led to the development of prospect theory (1979), now regarded as one of the cornerstones of cognitive psychology and behavioural economics. Prospect theory provides also some insight into the mechanisms responsible for framing effects as well as negativity effect.

The theory describes two phases: the editing phase and the evaluation phase. In the editing phase, a decision-maker can gather the outcomes into gains or losses, finds what is common in different gambles and simplifies the values or probabilities. Next is the evaluation phase, which incorporates a value function and a weighting function. The weighting function concerns the subjective perception of probabilities and points to two important effects: 1) overweighting of small probabilities and underestimating of large probabilities; 2) increased sensitivity toward changes in probabilities near 0 and 1. The value function is defined in terms of gains and losses relative to a psychologically neutral reference point, which can be affected by such factors as past experiences, future experiences (or their anticipation), the present state or social comparisons. Additionally, the value function is S-shaped: concave for gains and convex for losses. Finally, the value function is steeper for losses than for gains, which means that a loss of $100 reduces satisfaction more than a gain of $100 increases it. Generally the ratio between the steepness for losses is 2.5 higher than the steepness for gains. Figure 1 presents the value function in its original version from Kahneman and Tversky (1979).

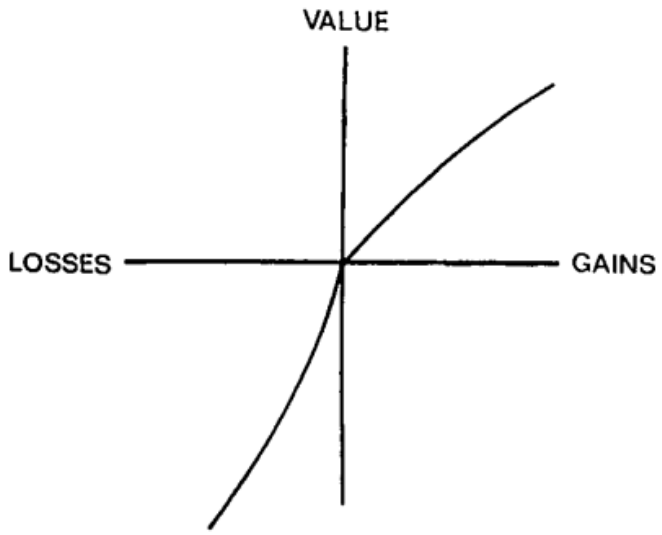

Figure 1: Prospect theory: hypothetical value function
Source: Kahneman & Tversky, 1979, p. 279

The premises of prospect theory and findings on loss aversion have been also employed to the research on political behaviour. Contrasting rational and psychological analyses of political choice, Quattrone and Tversky (1988) showed that when making decisions about political candidates or their manifestos, participants chose different options depending on contextual cues with which they were presented such as the economic condition of a fictitious country in question, the situation in neighbouring countries or differences in numerical scales presenting equivalent information.

Risk-seeking in the domain of losses and risk aversion in the domain of gains has been applied to explain why people prefer a program that eliminates a discrimination (a negative frame, the avoidance of negative consequences) over the one which improves rights of a selected social group (a positive frame; seeking positive consequences) as shown by Quattrone and Tversky (1988) in their study on the support for Equal Rights Amendment. Additionally, it can shed light on why voters tend to choose incumbent candidates under normal or improving conditions (i.e. a "safer" option in the domain of gains) but prefer the

challenger if a situation is deteriorating (i.e. a risk-seeking option in the domain of losses) as found in the research on the so-called incumbency-oriented voting hypothesis (Dassonneville & Lewis-Beck, 2013; Kramer, 1971).

Although probably none of other theories brought so much to the research on judgement and decision-making as prospect theory, the theory did not escape certain criticism, especially with regard to political research. For instance, analysing various political decisions such as Roosevelt's response to the Munich crisis or the Soviet's reaction to the Arab-Israeli war, Shafir (1992) points to the limitations of prospect theory, when explaining complex political decisions. One of his main arguments is that political decision-making typically takes into consideration multiple criteria and is motivated by conflicting considerations such as values, reputation, coalition formation, reciprocity and power which are not accounted for in the theory.

Prospect theory has been also criticised for its exclusive focus on cognitive processes and omission of emotions which have been shown to be an important component of decision-making (Adolphs & Damasio, 2001). For instance, Druckman and McDermott (2008) investigated how emotional states affected risky choice framing and resulting decisions in the Asian disease problem and an investment problem. The researchers found that positive and negative emotions changed responses of participants presented with the tasks and, more interestingly, that negative emotions had opposite effects, so that whereas anger increased propensity to risk, distress reduced it. None, of the effects, according to Druckman and McDermott (1998) is accounted for in prospect theory.

Finally, the research of Kahneman and Tversky has been also criticised for its oversight of context (McDermott, 2004), however, this criticism seems to be rather unfair as the authors of prospect theory provided much evidence for its importance (Kahneman &

Tversky, 1979; Tversky & Kahneman, 1981, 2017). Still, it is possible that the theory does not account for all complexities of political decisions and more research is needed, especially with regard to different values, motivations involved in political decisions as well as the effect of emotions on that process.

3. Similarity judgements in object evaluation

Following William James who stated that "this sense of sameness is the very keel and backbone of our thinking" (James, 1890/1950, p. 459), it can be said that any type of judgement cannot happen without at least some kind of comparison involved. The comparison process is obvious when a task consists in selecting one or more options from an array of alternatives. In political behaviour, a good example for such a decision is any type of elections when voters are asked to choose the candidate they prefer the most.

However, even if the action does not involve the act of choosing or rejecting, a comparison process is still incorporated in a decision-making and evaluation process (Goldstone, 1999). For instance, imagine a situation in which citizens are asked to decide in a referendum whether their president should be impeached or not (as it was the case in 2007 in Romania) or they are asked to evaluate how happy they are with the incumbent president. Both of these situations involve some kind of comparison process in which citizens compare the president to a certain category such as "a typical politician", "an extremely bad politician" or "an ideal politician". Whereas the selection of a particular category depends on framing effects, the final evaluation of the candidate will be based on the appraisal of how close the candidate is to the selected category.

3.1. Geometric models of similarity

Various theoretical models of similarity such as geometric, feature-matching, alignment-based, and transformational have been proposed (Goldstone, 1999). Geometric models – one of the oldest and most popular approaches – describe similarity between objects in terms of distance between them in a common coordinate space. One of the methods to calculate such distances is multidimensional scaling (MDS, Nosofsky, 1991; Torgerson, 1965) which provides researches with quantitative measures of the similarity among sets of items based on similarity and dissimilarity measures (e.g. direct similarity judgements, confusion matrices and other). The result of MDS, after using various data-reduction procedures, is a geometric model of similarity, represented in a visual form with each item of the set represented as a point in a multidimensional space (Goldstone, 1999; Hout, Goldinger, & Brady, 2014).

Geometric models rely on such axioms as minimality, symmetry and the triangle inequality and have been often used to describe cognitive processes. For instance, it is the basis for the universal law of generalization (Shepard, 1987) according to which the probability that a response to one stimulus will be generalized to another is a function of the distance between the two stimuli in a psychological space and it follows an exponential gradient. Both the geometric approach and the law of generalization are applied to models of categorization, such as exemplar and prototype theory. Despite its merits and popularity, geometric models have come under severe criticism by for instance Tversky (1977), who having identified limitations of similarity based on simple metric data, proposed a new set-theoretical approach to similarity.

3.2. Tversky's *Features of Similarity* and the contrast model of similarity

Tversky's (1977) paper on features of similarity was an important contribution to the literature on similarity judgements. Contrary to earlier works which evaluated similarity based on metric distance, Tversky argued that objects are better presented in terms of qualitative features rather than a few quantitative dimensions. Not excluding the possibility that features can take a form of dimensions measured with ordinal or cardinal variables (such as age, income or political engagement), the author argued that they are more often represented with discrete, often binary or nominal variables such as for instance gender, eye colour or party affiliation. If so, then the judgement of similarity between two objects may be better described as a comparison of features rather than the calculation of metric distances between values. Using theoretical arguments and empirical research, Tversky (1977) showed that similarity judgements violate the principles of minimality, symmetry and triangle inequality which were cornerstones of geometric models. Additionally, he provided evidence that the same two objects can be perceived as more similar or different depending on the context in which they are presented (so called diagnosticity effect).

In explaining why some pairs of objects seem to be more similar to each other than other pairs of objects, Tversky (1977) proposed the **contrast model of similarity**. In the model, similarity between two objects is defined as a linear combination of the measures of their common and distinctive features. The approach can be visually presented with a picture of two objects (see Figure 2) which to some extent share certain features (the overlapping part) and differ with regard to others. The similarity between two sets is expressed as a function of three arguments: $A \cap B$, features that are common for *a* and *b* ; $A - B$, features that belong to *a* but do not belong to *b*; $B - A$, features belonging to *b*, not shared with *a*.

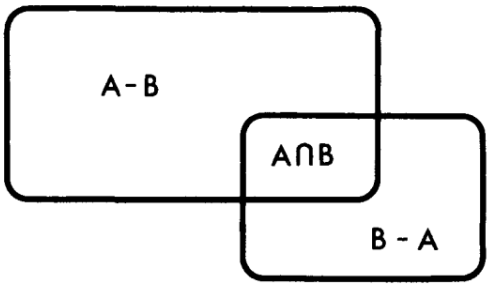

Figure 2: A graphical illustration of the relation between two feature sets
Source: Tversky, 1977, p. 330

According to the model, the similarity (*S*) between two objects can be defined by the following formula:

$$S(a,b) = \theta f(A \cap B) - \alpha f(A - B) - \beta f(B - A),$$

Equation 1: Contrast model of similarity

where *a* and *b* represent objects and *A* and *B* represent sets of features. In the formula, $f(A \cap B)$ stands for the number of features that belong both to object *a* and object *b*, *f* (A – B) features that belong to *a* but not *b* and *f* (B – A) features that belong to *b* but not *a*. The terms θ, α, and β are weighting coefficients and reflect salience, that is the importance that a person assigns to a particular subset of features. In Tversky's model, they are free parameters that can take a value ranging from 0 to 1. Therefore, if $\theta = 1$ and $\alpha = \beta = 0$, the similarity of two sets is entirely determined by their common features, whereas if $\theta = 0$ and $\alpha = \beta = 1$, the similarity will be entirely dependent on their distinctive features. Additionally, the function *f* must be fixed and is most naturally construed as a salience function, so that some sets of common or distinctive features contribute more to similarity than others, and thus are more salient in the comparison of objects (Decock & Douven, 2009). If so, the formula proposed by Tversky describes in fact not one but many similarity scales that differ in the form of the matching function *f* and the weights assigned to its arguments. Importantly, however, in order

to test his predictions Tversky sometimes assumed the symmetry between common and distinctive features (so that as $\alpha = \beta$; see Tversky, 1977 p. 338).

The contrast model can be normalized so that *S* lies between 0 and 1 using the **ratio model** which can be described with a formula:

$$S(a,b) = \frac{f(A \cap B)}{f(A \cap B) + \alpha f(A - B) + \beta f(B - A)}$$

Equation 2: Ratio model of similarity

The ratio model of similarity allows to calculate the extent to which two objects are similar, with 0 – no similarity and 1 – two objects are identical.

Having laid down the assumptions of the contrast model of similarity, Tversky (1977) uses his approach to tackle some problems in similarity judgements that could not be addressed by earlier geometric models. One of them is the asymmetry observed in judgements of similarity between two objects. According to geometric models, the similarity of *a* to *b* equals the similarity of *b* to *a*, so that *S(a, b) = S(b, a)*. However, as shown by Tversky and Gati (Tversky, 1977; Tversky & Gati, 1978), it is not always the case. For instance, a daughter will be more similar to her mother than *vice versa* or a man will look more similar to a famous actor than the actor to that man. The effect may be attributed to the differences in the direction of comparisons, so called focusing hypothesis. If *a* is compared to *b*, then *a* is the subject of the comparison and *b* is the referent and in such a situation features of the subject are more salient than the ones of the referent. Thus, focusing hypothesis implies that the direction of asymmetry is determined by the relative salience of the stimuli so that the less salient stimulus is more similar to the salient stimulus than *vice versa*.

Tversky's approach addresses also another argument often raised against geometric models (e.g. Goodman, 1972), that is the context-dependence of similarity judgments. According to metric models, the similarity between *a* and *b* is constant and not dependent on different criteria used for their evaluation or the presence of other objects. In most basic terms, similarity between Jane and Kate should be the same regardless of whether the judgment concerns their height, weight or friendliness. However as shown by Tversky, objects are compared based not on all features but only some of them and these subsets are selected with regard to their diagnosticity which is context-dependent. Furthermore, even given a fixed set of salient features, their diagnosticity is relative to one another and may change from one context to the other (as in the famous study with happy and frowning faces in which the presence of other faces changed the perception of similarity between objects). Finally, as illustrated by Tversky and Gati, the selection of the domain may be context-sensitive. The extension effect is yet another of Tversky's contribution to the research on context-dependence of similarity judgements. If all compared objects share a particular feature such a feature is non-diagnostic. However, if an object not sharing that feature is added to the comparison task, the feature becomes diagnostic. For instance, if a politician who has anti-capitalist views becomes one of election candidates, he or she may lead people to revise their previous similarity judgments regarding other candidates who are in favour of capitalism.

3.3. Going beyond the feature-based model

Tversky's model of similarity is a major contribution to similarity judgements, relevant not only for psychologists but also computer scientists who develop more and more advanced algorithms to measure similarity between shapes, pictures, texts or collections of

objects (Pothos, Busemeyer, & Trueblood, 2013; Veltkamp, 2001). Since the influential works of Tversky, other models of similarity have been proposed that verified or extended general premises of the contrast model.

The alignment-based model determines similarity between objects based on interdependent correspondences between the parts of compared entities (so called alignment). The refined model added to the research on similarity judgements by accounting for violations of monotonicity which were not accommodated in Tversky's feature-based approach (Goldstone, 1996). The other group of similarity models are the transformational models of similarity. In such models similarity between objects is based on the ease with which one object can be transformed into another (Hahn, Chater, & Richardson, 2003; Hodgetts, Hahn, & Chater, 2009). Finally, other researches focused on the importance of context in similarity judgements, so that a judgement of similarity between two objects can happen only if one specifies the domain or dimensions of comparison (Goodman, 1972; Medin, Goldstone, & Gentner, 1993; Medin & Shoben, 1988). However, the new models of similarity generally have built upon the original or refined Tversky's theory rather than questioned its main assumptions which are still accepted today, as indicated by the large number of citations (9768 in Google Scholar as of May, 2020).

3.4. The inclusion/ exclusion model in social evaluation

The inclusion/ exclusion model developed by Schwarz and Bless (1992a, 1992b) assumes that the evaluation of various social objects requires a mental representation of the object of judgement (referred to as the target) and of an object that serves as the standard of comparison. Both representations comprise of elements that are chronically accessible (context-independent) and those that are only temporarily accessible and thus context-

dependent. The manner in which accessible information affects the evaluation depends on the way it is used. Information that is added (included) to the temporary representation of a target will lead to assimilation effects. For instance, an evaluation of an unknown candidate X from a particular party will increase if one supports the party and will decrease if one has a negative opinion of the organization. The information that is used to form a representation of the standard will result in contrast effects. Importantly, this information is not a part of the target and thus it is excluded from its representation. Two instances of contrast effects can be differentiated. The so called subtraction-based contrast effects happen if the exclusion of a positive attribute leads to a less favourable representation of the target and hence a less positive judgment and the exclusion of negative attribute results in a less unfavourable representation and hence a less negative judgment (Bless & Schwarz, 2010). Comparison-based contrast effects on the other hand take place if the information excluded from a target representation is used to construct a representation of the standard. If this attribute is positive, it increases the favourability of the standard, relative to which the target is evaluated less positively. If the attribute is negative, it leads to a less favourable perception of the standard, relative to which the target is perceived as more positive.

A good example of the subtraction-based contrast effect may be a generally good politician who does not speak any foreign language among those who are fluent in other languages (a lack of this ability is a distinctive feature setting the candidate apart from the others). Whereas the comparison-based contrast effect may be exemplified with a politician with moderately conservative beliefs who is perceived as rather liberal if compared to radical right-wing extremists. Providing empirical evidence for their model, Schwarz and Bless (1992b) showed that a mention of scandal-ridden politicians (e.g. Richard Nixon) decreased the perceived trustworthiness of politicians in general (assimilation effect) but increased the

trustworthiness of other specific politicians (contrast effect) as the accessible information (untrustworthy politician) was excluded from the representation of other politicians.

The inclusion/ exclusion model allows to predict not only the direction of the effect (i.e. assimilation or contrast effect) but also its size. For assimilation effect, its size will increase with the extremity of included information and the amount of contextual information added to the representation of the target but it will decrease with the amount and extremity of other information included in the representation of the target. Thus, the more shocking the immoral behaviour of a particular politician or the more frequently it happens in politics, the lower the perceived trustworthiness of politicians in general. The same principles will be also present in subtraction-based contrast effects, so that the elimination of a group of shady politicians from the party would be better than the elimination of only one. Likewise, the dismissal of the most controversial and scandalous exemplar would be more effective than the removal of the one who is also immoral but to a lower extent. The size of the comparison-based contrast effects increases with the amount and extremity of positive (negative) information used in constructing the standard, so for example the more immoral the opposing candidate is (comparison standard), the higher will become the perceived trustworthiness of a "our" candidate (target).

The inclusion/ exclusion model proposed by Schwarz and Bless (Bless & Schwarz, 2010; Schwarz & Bless, 1992b, 1992a) provides a comprehensive framework that joins together some of the elements covered in my research. First, it concentrates on feature-based evaluative judgements about social stimuli. Second, it addresses the effect that the inclusion or exclusion of positive and negative information has on the subsequent evaluation of analysed objects, taking into consideration the affective component of these attributes. Third, it takes into consideration contextual cues and frames of reference that serve as standards of

comparison. Fourth, although, the model does not focus on direct similarity judgements, its authors mention such concepts as similarity and typicality as important determinants of categorization and use the distinction into assimilation and contrast effects to explain asymmetries in similarity – dissimilarity judgements (Bless & Schwarz, 2010). Finally, the described predictions concerning the size of assimilation and contrast effects are in line with the set-size principle of models of information integration described by for instance Anderson (1965, 1974) and can be reconciled with the ratio-difference principle (Quattrone & Tversky, 1988) or the predictions of the ratio model of similarity concerning the effect of common and distinctive features on similarity (Tversky, 1977).

4. Research problem statement

Tversky's *Features of Similarity* provide a comprehensive framework that allows for the analysis of how positive and negative pieces of information affect a candidate's evaluation as well as how this evaluation is dependent on context in which a decision-making process takes place. Adopting the distinction into common and distinctive features, it is possible to analyse how additional favourable and unfavourable features affect similarity to such categories as an ideal politician or a bad politician.

4.1. The effect of additional positive and negative features and the number of these features on object evaluation and similarity judgements

Although highly influential, Tversky's theory of similarity leaves several questions unanswered, which open interesting avenues for further research. For instance, although the contrast model of similarity defines similarity as the ratio between common and distinctive features, Tversky's research did not actually address the problem of the number of features, nor did it directly test how the addition or deletion of these features may affect similarity judgements. The only exception is the so called extension effect which predicts that a non-diagnostic feature may become diagnostic if a new object not sharing this feature is added to the comparison task. For instance, if a politician who speaks fluently English becomes one of election candidates, the fact that other candidates do not speak any foreign language becomes relevant. However, the effect does not concern the effect of additional features on similarity between two objects but rather illustrates how an additional feature changes the salience of previously non-salient features shared by all objects in a comparison task.

Furthermore, although the model can be applied to objects whose sets are specified as well as natural stimuli whose features cannot be readily specified (see Tversky, 1977, p.

333), the original studies described in *Features of Similarity* concentrated generally on the latter and provided qualitative predictions about similarity judgements. A few experiments that pertained to objects whose sets of features were fully specified concentrated mostly on such objects as schematic faces, letters or strings of symbols which are generally characterized by very limited sets of features. Furthermore, the manipulations on common and distinctive features applied by Tversky Gati (1978) typically consisted in exchanging features, so that a common feature became distinctive or *vice versa*. For instance, a smile becomes a sad face (☺ → ☹) or straight brows turn into a frown. Thus, features were not added or deleted but instead replaced, which is characteristic for closed sets of features.

Falkowski, Sidoruk-Błach, Bartosiewicz and Olszewska (2018) identified this research gap and extended the contrast model of similarity to open sets, that is sets whose features are potentially limitless (as in the case of natural stimuli). Furthermore, they provided predictions about how the addition or deletion of common and distinctive features affects similarity judgements. More precisely, they predicted that if two objects had more distinctive features than common ones, the changes in the set of common features (i.e. their addition or deletion) would affect similarity to a greater extent than the same changes introduced to the set of distinctive features. If, however, the number of common features exceeded the number of distinctive features, changes within the sets of distinctive features would influence similarity to a greater extent than a comparable manipulation within the set of common features. Importantly, these similarities did not result from judgments about real objects but from mathematical modelling based on the ratio model. In other words, derived similarities were only a theoretical demonstration of how the model works. Thus, the authors did not provide empirical findings which would verify their predictions.

The effect of positive and negative attributes characterising people have been extensively studied in the research on impression formation (Pratto & John, 1991; Willis & Todorov, 2006) and social evaluation (Bless & Schwarz, 2010; Peeters & Czapinski, 1990). From various studies conducted, the research on the inclusion/ exclusion model of evaluative judgment (Bless & Schwarz, 2010; Schwarz & Bless, 1992a, 1992b) seems to be especially important as it focuses on how comparison standards and the inclusion or exclusion of favourable or unfavourable information in the representation of an evaluated object and/ or a comparison standard affect the evaluation of social objects. Although the model provides a comprehensive framework which allows to predict whether a particular feature will increase or decrease object evaluation depending on assimilation and contrast effects, these predictions are rather qualitative. However, as the inclusion/ exclusion model and the contrast model of similarity address similar problems (such as context dependence, common and distinctive features of analysed categories and the extent of similarity between these categories), the adoption of the latter may provide interesting and novel perspective to the effect of additional positive and negative information in social judgements, especially as the contrast model of similarity has been rarely if at all adopted to the realm of social evaluation.

The effect of additional positive and negative information has been researched in the domain of consumer research. For instance, Yang and Unnava (2016) investigated how additional positive or negative reviews influenced consumer decisions and found that people generally regarded unfavourable information as more informative and useful. Other researchers looked on how additional novel attributes affect product evaluation, showing that the effect is dependent on product complexity, so that additional positive features increase preference for low complexity products but have a detrimental effect on more complex goods (Mukherjee & Hoyer, 2001).

Finally, Dhar and Sherman (Dhar & Sherman, 1996) analysed how additional features affect the differentiation between products, depending on whether the compared products differed with regard to their positive or negative attributes. In their studies, the scholars found that people were more willing to defer their choice if products differed with regard to their negative features than if the unique features were positive. Such a finding may suggest that people are less certain of their opinions if the decisions concern negative options compared to a better differentiation between positive options.

A similar pattern of results was also found in a study on comparison shifts conducted by Dhar, Nowlis and Sherman (1999). In the study, participants were asked to elaborate on the differences between two positive or two negative options and the researchers analysed how the direction of an initial comparison task affected the relative attractiveness of analysed options in a subsequent preference task. The study found that preference shifts were slightly greater for decisions concerning positive rather than negative options (17% of preference shifts for positive options *vs* 12% for negative options, in Study 1). Such a finding shows that people see more difference between favourable items and less of a difference between unfavourable ones. The observation is also interesting because it runs against density hypothesis (Alves, Koch, & Unkelbach, 2017; Koch, Alves, Krüger, & Unkelbach, 2016b) which predicts that negatively-valenced features are more internally differentiated than their positive counterparts (so that one negative feature is less similar to other negative features compared to the similarity of a positive feature to other positively-valenced features). However, the assumptions of density hypothesis have been rarely (if at all) investigated with regard to the differentiation between two or more favourable (or unfavourable) objects. Finally, the interesting effect observed by Dhar and Sherman (1996) as well as Dhar, Nowlis and Sherman (1999) concerning a better differentiation of positive and not negative options

was not addressed in their research as the differences in valence were not the main concern of the study.

Furthermore, although these and other studies conducted by Sherman and others (Agostinelli, Sherman, Fazio, & Hearst, 1986; Beike & Sherman, 1998; Dhar et al., 1999; Herr, Sherman, & Fazio, 1983) directly tested the predictions of Tversky's feature-matching model in consumer context, in most of them the manipulations with particular features were typical for operations on closed sets (i.e. exchanging features so that positive became negative and *vice versa* or keeping the same number of features in the sets) and the researchers did not analyse how additional positive or negative features change product evaluation (instead concentrating on choice or choice deferral decisions). An exception to this study design was an experiment in which scholars investigated the sensitivity to change between the addition *versus* deletion of features, however, in that study the authors did not manipulate the valence of added or removed features (Agostinelli et al., 1986). Finally, the researchers typically focused on choice and choice deferrals and not direct similarity judgements, with an exception of a study which investigated comparison effects depending on comparison focus (Dhar et al., 1999). In the study, however, participants were presented with product descriptions that had the same number of positive and negative features, so researchers did not address the problem of addition or deletion of differently valenced information.

4.2. Similarity evaluations in social domain

As it was already mentioned, most of the research testing the predictions of feature-based models has been conducted on relatively simple objects such as schematic faces, strings or letters or at best short object descriptions or lists of features (Dhar et al., 1999;

Pothos et al., 2013; Tversky, 1977). Typically, these studies were also limited to the evaluation of non-social stimuli such as consumer products, apartments or holiday destinations (Shafir et al., 1993). A notable exception here is a study conducted by Galesic, Goode, Wallsten and Norman (2018) who used the contrast model of similarity to measure the similarity of fictive citizens of 15th century Florence. Using descriptions of characters who differed with regard to positive and negative personality features, they showed that likelihood judgements (here the probability of belonging to the same family) were affected by the same factors as similarity measures. However, as the authors' main focus was on the relationship between similarity and likelihood judgements, they did not address the problem of feature valence in similarity judgements. Despite using favourable and unfavourable personality traits, they did not take into consideration the emotional or social component that was likely to affect similarity judgements.

Thus, although Tversky's feature-based approach is still relevant and popular today, as shown by the present research in such domains as machine learning, image recognition or new technologies (Chen, Garcia, Gupta, Rahimi, & Cazzanti, 2009; Rorissa, 2007; Tenenbaum & Griffiths, 2001), it has been rarely if at all adopted to the analysis of social and emotion-laden objects. The adoption of the contrast model of similarity to these domains may provide a novel perspective on that topic, especially as similarity is an important part of the research in the field of social perception (Horton, 2003; Liviatan, Trope, & Liberman, 2008), self-evaluation (Thornton & Arrowood, 1966) or relationship satisfaction (Broemer & Diehl, 2004). The valuation of similarity between people is especially important if it leads to decisions about the choice between particular options as in the case of political elections.

4.3. Affective component in similarity judgements

Most of the studies on the relationship between similarity judgements, frames of references and contextual cues focus on cognitive biases responsible for such effects as preference reversals, non-complementarity of judgments of similarity and difference or comparison shifts. Any affective component involved in such judgements is rarely, if at all, taken into consideration (Druckman & McDermott, 2008; McDermott, 2004). However, the evaluations of political candidates and additional favourable and unfavourable information items are likely to be infused with some kind of affective valuation. Thus, I believe that the incorporation of the affective evaluation in the relationship between framing effects and candidate preference may provide some interesting findings to the research problem in question.

For instance, as valence framing has been linked to changes in the affective responses towards framed issues (Gross, 2008; Stark, Baldwin, Hertel, & Rothman, 2017; Young, Shuster, & Mikels, 2018), it is interesting to investigate how the affective evaluation of a candidate affects voting intention in situations in which the candidate is compared to a positive frame of reference (ideal politician) and when he or she is compared to the negative category (bad politician). Furthermore, although the relationship between framing, affect and preference has been investigated in consumer context (Bagozzi, 1982; Sherman, Mathur, & Smith, 1997; Shiv & Fedorikhin, 1999), the literature on the connection between these variables in political setting is rather limited. Finally, there are relatively few studies that investigate potential mediators of framing effects (Stark et al., 2017) but the existing ones suggest a potential role of affect as a mediating variable between framing and preference (Seo, Goldfarb, & Barrett, 2010; Stark et al., 2017; Young et al., 2018).

4.4. Research aims

The first aim of my research is to adopt Tversky's feature-based model to studies on the evaluation of political candidates and analyse how the changes in the proportion of bad and good features describing a politician influence his or her similarity to someone who might be considered as the best or the worst possible candidate for a post. Doing that, I will also provide an empirical verification of the theoretical predictions put forward by Falkowski and others (2018) who described the asymmetrical effect of additional common and distinctive features on similarity depending on the proportion of these features in a particular set.

My second aim is to investigate the effect of contextual cues and frames of reference on a candidate's evaluation. More precisely, I want to analyse how favourable and unfavourable information affects similarity judgements concerning the candidate's similarity to such categories as "an ideal politician", a "bad politician" or other candidates presented as potential opponents in a decision task. Furthermore, I will look on how the framing of a decision in terms of choice or rejection influences candidate evaluation. Finally, I will research how well people differentiate among a few positive and a few negative options. For instance, I will investigate whether participants see more similarity between a favourable candidate and its "upgraded" version or an unfavourable candidate and its "downgraded" version.

My third aim will be to test the relationship between positive and negative frames of reference, affective evaluation and preference. I will investigate how the similarity to an ideal and bad politician affect candidate perception as well as how voting intention is predicted by positive and negative features. Furthermore, my intention is to investigate affective evaluation as a potential mediator between valence framing and voting

intention. In order to do that, I will build models in which affective evaluation will be a mediator in the relationship between similarity to either an ideal or bad politician and voting intention.

4.5. Research predictions – formal derivations

4.5.1. The effect of additional positive and negative features

Generally, according to the contrast model similarity, similarity between objects *a* and *b* is defined as (Equation 1):

$$S(a,b) = \theta f(A \cap B) - \alpha f(A - B) - \beta f(B - A)$$

Under this formula similarity *S* is a non-linear function of common and distinctive features. Changes in the similarity between *a* and *b* can be obtained by adding or removing either common or distinctive features. Therefore, the following operations are possible.

- Adding common features of *a* and *b* to *a* – increases similarity between *a* and *b*
- Deleting common features of *a* and *b* from *a* – decreases similarity between *a* and *b*
- Adding to *a* features not present in *b* – decreases similarity between *a* and *b*
- Deleting from *a* features that are not present in *b* – increases similarity between *a* and *b*.

The operations described above are symmetrical, that is the changes may be also applied to object *b*. However, as it often happens in the domain of political marketing a person wanting to change his or her image can only influence how people perceive him or herself with a limited access to the changes in the set of features characterizing other candidates. It is even less possible if this politician is compared to some more or less abstract "ideal candidate" whose features form the point of reference in the process of comparison. The same also applies to the comparison to a "bad politician". Certainly one would like to be

more similar to an ideal politician than to a prototype of a bad one. It is therefore obvious that with positive points of reference a rational strategy would be the one that increases similarity, while with the negative point of reference a rational strategy is to decrease similarity.

In order to apply the contrast model of similarity to the framework of my research, some assumptions about comparison process and feature structure must be made. First, the candidate will always be compared to the image of an ideal or bad politician, so that the candidate will always constitute an object of the comparison (target), whereas the good or bad politician (real or imagined) will be the referent (comparison standard). Such an assumption is necessary to account for focusing hypothesis which predicts that the direction of comparison affects similarity judgements. Second, the valence of the referent (i.e. either an ideal or bad politician) will determine whether the addition or deletion of positive and negative features pertains to the set of common or distinctive features. In other words, if the referent is positive, additional positive features will belong to the set of common features, whereas additional negative features will belong to the set of distinctive features. Parallelly, if the referent is negative, additional positive features will be distinctive, whereas negative ones will be common. Third, I assume that all features characterising an ideal politician are positive and that all features characterising a bad politician are negative. Furthermore, I assume that parameters α and β (i.e. weighting coefficients attributed to common and distinctive features) are equal, so that $\alpha = \beta$ (see Tversky, 1977, p. 338).

The ratio model can be simplified into

$$S(a, b) = \frac{x}{x + y}$$

Equation 3: The simplified formula for the ratio model of similarity

where *x* is the number of common features and *y* is the number of distinctive features.

People may differ with regard to particular features that are included in the sets of an "ideal politician" and a "bad politician". In order to account for that, a preliminary study will be conducted in which I will determine the inner structure of the concepts. Taking into consideration that people within the same cultures share similar representations of categories (Rosch, 1975b; Rosch & Mervis, 1975) and that I will use most representative features for both categories, I can assume that people will have a similar understanding of the categories of an "ideal politician" and "bad politician". Still, it would be extremely difficult to determine the number and the content of particular characteristics included in these sets. Therefore, when calculating the similarity according to the ratio model of similarity, I will be using the simplied model from Equation 3. It leads to the assumptions that if a politician is described with eight positive and eight negative features he will have eight features common with the best possible and eight features common with the worst possible candidate. In both cases the other eight features (positive for an ideal standard of comparison, and negative for the bad standard) will be treated as distinctive features. This assumption is in accordance with a more general heuristics that people use only information available to them. The specific version of this availability heuristic has been named as WYSIATI bias (an acronym for "what you see is all there is") (Kahneman, 2011). In the case of research presented below it will simply mean that people take into consideration only the features available to them in the presented descriptions of candidates.

Having made these assumptions, let us apply the model to a candidate who has eight positive and eight negative features. According to the contrast model, the similarity of the candidate to an ideal politician will equal 0.5 and will be equal to his similarity to a bad politician, $S = 0.50$ $(8/ (2\times8) =0.5)$. This is because we can safely assume that all eight

features are set as positive in the case of an ideal candidate and as negative in the case of a bad candidate. Now let us analyse two situations: in the first, the candidate wants to increase his/ her similarity to an ideal politician (a positive referent); in the second, he or she wants to reduce similarity to a bad politician (a negative referent). In both situations, the candidate can either add positive features or remove negative ones. However, in the first situation (positive referent), additional positive features will pertain to the set of common features and the negative ones to the set of distinctive features. In the second scenario (negative referent), positive features belong to the set of distinctive features and negative features to the set of common features. Figure 3 illustrates how the addition of positive features and the deletion of negative features affects similarity to the positive and negative referent.

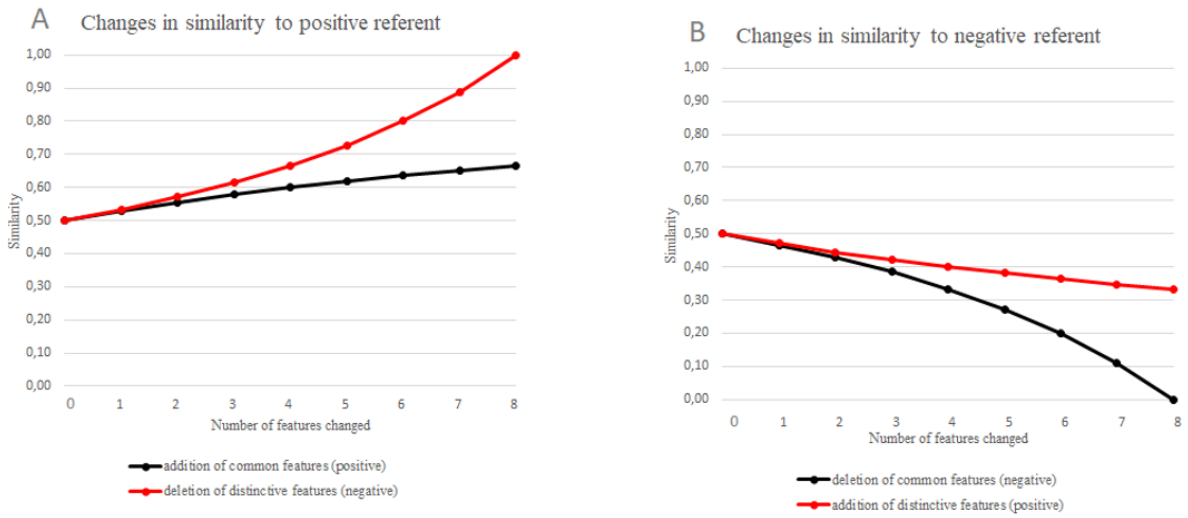

Figure 3: Changes in the similarity of a candidate as a function of gradual addition or deletion of common and distinctive features: (A) ideal politician as a referent (positive); (B) bad politician as a referent (negative). Initial similarity is set to 0.5, that is a candidate has eight positive and eight negative features. The positive referent is assumed to have 16 positive features and 16 negative features.

Looking at panel A of Figure 3, we can see how the manipulation with the number of positive and negative features affects similarity to the positive referent. Initially, the candidate has eight common and eight distinctive features. A gradual increase in the number of common features (from 8 to 16; black line) leads only to a relatively small increase in similarity. However, a decrease in the number of distinctive features by the same value (from 8 to 0; red line) leads to a greater increase in similarity. Thus although common and distinctive features are either increased or decreased by the same value (that is 8), the operations result in different similarity values.

Now let us analyse a situation in which the same candidate is compared to the negative referent. As presented on panel B of Figure 3, a gradual decrease in the number of common features (in this case – negative, from 8 to 0; black line) leads to a significant drop in similarity, eventually leading to $S = 0$. On the other hand, when the number of distinctive features is gradually increased by the same value (from 8 to 16; red line), an increase in similarity is only marginal.

The above described relationships present a differential effect of common and distinctive features depending on the valence of the referent for an object whose initial similarity to an ideal and bad politician equals 0.5. However, the same principles can be applied to objects whose initial similarity is not equal 0.5 but instead is below or above that point. For instance, if a candidate has more positive features than negative ones, his or her similarity to the positive referent will be above 0.5, while his/ her similarity to a negative referent will be below 0.5. If, however, a candidate has more negative than positive attributes, the reverse will be true. Importantly, the principles described when analysing a situation for the candidate who is equally similar to the best as well as to the worst possible candidate *(S* = 0.5) can be used to predict the effect of common and distinctive features for similarity of

candidates who have more positive than negative features or *vice versa*. For low similarity between an object and a referent, operations on common features (their addition or deletion) lead to greater changes in similarity (compared to a parallel manipulation in the set of distinctive features), whereas for high similarity between an object and a referent, operations on distinctive features (their addition or deletion) have a more profound effect on similarity.

The predictions of the contrast model of similarity on the differential effect of common and distinctive features are in line with the research on psychophysics which analyses relationships between the physical characteristics of stimuli and their subjective sensation and perception (Gescheider, 1997). One of the important findings of psychophysics is the Weber-Fechner Law which predicts that an increase in stimulus intensity leading to a noticeable difference is proportional to the initial value of that stimulus (Payne, Bettman, & Johnson, 1993; Weber, 2003). The same predictions are also formulated in the ratio-difference principle (Quattrone & Tversky, 1988) also known as the principle of diminishing sensitivity (Tversky & Kahneman, 1992).

4.5.2. The effect of framing and contextual cues

So far, I have shown how additional positive and negative features will affect similarity depending on 1) whether the referent is positive or negative as well as 2) the ratio between positive and negative features characterising an object. However, the valence of the frame of reference and the ratio between favourable and unfavourable features are not the only factors that determine similarity.

Looking on Figure 3 which presents how additional positive and negative features affect similarity to an ideal and bad politician for an object with the initially equal number of common and distinctive features ($S = 0.5$), an interesting effect can be observed. Although there is an asymmetry in the effect of additional common and distinctive features for both

referents, the functions for similarity to the positive referent are inversely symmetrical to the functions for similarity to the negative referent. If so, the effect should be symmetrical, so that any addition of negative features should have the same effect on similarity to the positive referent as the addition of positive features on similarity to the negative referent. If any of the features was stronger, it would point to a positive-negative asymmetry.

Additionally, an increase in similarity to the positive referent by for instance $\Delta = 0.2$ should lead to a comparable decrease in similarity to the negative referent. However, as shown in studies on similarity and dissimilarity judgements (Tversky & Gati, 1978), similarity and difference are not symmetrical due to focusing hypothesis and the relative weight of common and the distinctive features attributed to both judgements. Thus, although high similarity to an ideal politician implies low similarity to a bad politician, the effect of additional favourable and unfavourable features may be different, depending on the valence of the referent.

Furthermore, the final evaluation of an object may depend on the way in which the judgement is framed, as shown by studies of Tversky and Kahneman on preference reversals (1979). If so, the difference between a candidate and its more positive or negative version (resulting from the addition or favourable and unfavourable features) may be perceived differently, depending on whether the decision is framed in terms of choice or rejection.

Finally, the effect of additional positive and negative features is likely to be dependent on such factors as 1) the overall positivity or negativity of the object as well as 2) the overall positivity or negativity of the referent. In order to illustrate that, I will refer to two folk wisdoms. As an old proverb goes, “A spoonful of tar can spoil a barrel of honey, but a spoonful of honey does nothing for a barrel of tar.” This rather sensual adage captures well

a stronger effect of negative entities[1]. However, another folk wisdom says that "one swallow doesn't make a summer", which means that in order to be able to predict something, it is better two have more than one piece of evidence. Thus, although a spoonful of tar can spoil a barrel of honey, it may go unnoticed if added to a glass of hop extract or a quinine solution, both of which are extremely bitter. Similarly, the arrival of the second, third or fourth swallow may initially hint the coming of a warmer weather, however, if there are hundreds of birds, any additional one will make no difference. Thus, the extent to which two positive or negative features will change the perception of a candidate is likely to depend on his or her overall image favourability.

Thus, accounting for all these factors, I predict that the final evaluation of an object will depend on various factors such as its positivity/ negativity, the presence of other objects or other contextual cues as well as the framing of an evaluation task. Thus, the final evaluation of an object may be described as:

$$\text{eval2}\,(a) = f_1\,(\text{sim}\,(a, b)) + f_2\,(\text{eval}\,(a)) + f_3\,(\text{eval}\,(b)) + f_4\,(\text{context})$$

Equation 4: The predicted final evaluation of an object as a function of its initial favourability, similarity to a comparison standard and contextual cues

where eval2 (a) is the final evaluation of an object a after it has been compared to a comparison standard b. The final evaluation of a is a link function of:

f_1 (sim (a, b)), similarity between a and b according to the contrast model of similarity

f_2 (eval (a)), the evaluation of a (e.g. the extent of its positivity or negativity measured with the ratio of positive or negative features)

[1] In a similar vein, Kahneman noted that "a single cockroach will completely wreck the appeal of a bowl of cherries but a cherry will do nothing at all for a bowl of cockroaches" (Kahneman, 2011, p. 302).

f_3 (eval (*b*)), the evaluation of *b* (e.g. the extent of its positivity or negativity measured with the ratio of positive or negative features)

f_4 (context), contextual effects such as decision framing, other objects in evaluation task.

Indices *1, 2, 3, 4* account for different salience or importance that can be attributed to the aforementioned functions.

4.6. Hypotheses

The hypotheses tested in the this dissertation can be divided into four categories. At the beginning, I will analyse whether valence framing leads to changes in candidate evaluation and preference (Hypothesis 0). Later, I will discuss hypotheses pertaining to the effect of additional positive and negative features on similarity judgements depending on the ratio of positive and negative features used in candidate description (Hypothesis 1). The third group of hypotheses will focus on negativity effect and the effect of additional positive and negative features on the differentiation among a few favourable and unfavourable options (Hypothesis 2, 3, 4, 5). Hypothesis 6 will test whether similarity to an ideal politician is a better predictor of voting intention than similarity to a bad politician. The last hypothesis will address the mediating role of affective evaluation in the relationship between framing effects and voting intention (Hypothesis 7). All those research hypothesis are presented in details below:

The effect of frames of reference

Based on research on valence framing (Kahneman & Tversky, 1979; Shafir et al., 1993; Tversky & Simonson, 1993), I expect that the way in which a decision task is formulated as well as the reference point to which an object is compared influence its evaluation. As the majority of these studies point to a stronger effect of negative valence

framing (Bizer et al., 2011, 2013; Bizer & Petty, 2005; Krishnamurthy et al., 2001; Levin et al., 1998), the following is predicted:

> **Hypothesis 0: Frames of reference do matter: the evaluation of the same candidate will be different depending on whether the candidate will be compared to an ideal or bad politician and whether the decision is presented as a choice or rejection of one of the candidates. Negative framing will lead to greater differences in candidate perception.**

As the hypothesis has been already well documented (Bizer & Petty, 2005; Schwarz & Bless, 1992b), it is not one of main research interests. However, as I will use these types of manipulation in my further research, I want to test how comparisons to a positive and negative reference point and the formulation of a decision task in terms of choice or rejection affects candidate evaluation.

The effect of additional positive and negative features

The same positive or negative information can to a different extent influence candidate evaluation, depending on whether the candidate a) has more negative features than positive ones b) has more positive features than the negative ones c) has the same number of favourable and unfavourable characteristics. Thus, the following is predicted:

> **Hypothesis 1: The effect of additional positive and negative features on candidate evaluation is dependent on initial image favourability.**

The contrast model of similarity predicts that operations on common and distinctive features (such as their addition or deletion) will have a differential effect on similarity between two objects, depending on the ratio between these features. Thus, if the focal object has more distinctive than common features of its referent ($S < 0.5$), operations on common features (such as addition and deletion) will have a stronger effect compared to operations on distinctive features. However, if a focal object and its referent have more common

features than distinctive ones ($S > 0.5$), operations on distinctive features (such as addition and deletion) will have a stronger effect compared to operations on common features. Based on that, the main hypothesis can be split into the following two:

> **Hypothesis 1a: For candidates whose image is unfavourable, additional positive features will increase similarity to an ideal politician to a greater extent than negative features will decrease it. For candidates whose image is favourable, additional negative features will increase similarity to a bad politician to a greater extent than additional positive features will decrease it.**
>
> **Hypothesis 1b: For favourable candidates, additional negative features will decrease similarity to an ideal politician to a greater extent than additional positive features will increase it. For unfavourable candidates, on the other hand, additional positive features will decrease similarity to a bad politician to a greater extent than additional negative features will increase it.**

The predictions of the contrast model for objects who have half of positive and half of negative features, that is are equally similar to the best or to the worst possible referent are not that straightforward. As it can be derived from Equation 1, the effects of adding common or distinctive features should be symmetrical regardless of the fact if those features are positive or negative. However, on the basis of contrast effects, the following can be predicted:

> **Hypothesis 1c: Additional negative features will decrease similarity to an ideal politician to a greater extent than positive features will increase it, whereas additional positive features will decrease similarity to a bad politician to a greater extent than negative features will increase it.**

Differentiation between positive and negative options

The research on negativity effect suggests that negative features are stronger than their positive counterparts due to their higher salience and diagnosticity. Therefore, it could be generally predicted that negative information will have a stronger effect on candidate evaluation than positive information. This leads to the next hypothesis:

> **Hypothesis 2: Negative information will have a greater effect on a candidate's evaluation than positive information.**

Furthermore, negative stimuli were also found to provoke stronger as well as more extreme reactions as shown in behavioural studies on approach-avoidance tendencies (Brown, 1948). From that follows that even relatively few negative information items about a candidate could make him or her inadequate for the post. If so, negative features are likely to deteriorate the image of a candidate who is perceived as neutral or positive but will not harm a candidate whose image is already unfavourable. This observation is in line the contrast model of similarity. Additionally, the effect of negative information is likely to be more extreme, so that even a moderately bad candidate will be perceived as inadequate for the post.

However, a different pattern of results can be predicted for the effect of additional positive information. Although found to be generally weaker and less salient than their negative counterparts (Fiske, 1980; Koch et al., 2016a; Peeters & Czapinski, 1990; Skowronski & Carlston, 1989), positive features may be more meaningful in situations in which people have to determine which of the available options is the best or at least "good enough". In such situations, people are more likely to focus on positive features that differentiate alternatives. Furthermore, as shown by Dhar, Nowlis and Sherman (1999) in their study on preference shifts, people are also more likely to see more difference between

favourable items and less of a difference between unfavourable ones. Thus, although negative information may deem a candidate unsuited for the post, positive characteristics are likely to determine the final preference. Additionally, whereas the effect of negative features may lead to more extreme judgments, the effect of additional positive features is likely to be gradual. Thus, the following two hypotheses can be derived:

> **Hypothesis 3: For candidates whose image is unfavourable, additional negative features do not affect their evaluation. For candidates whose image is favourable, additional positive features will influence candidate evaluation.**
>
> **Hypothesis 4: The differentiation between a good and better candidate will be greater than the differentiation between a bad and a worse candidate.**

The differentiation between better and worse candidates will be tested in a study in which participants will have to make a decision about a choice of a better candidate from the pair or the rejection of the worse one. As shown by studies on preference reversals (Shafir et al., 1993; Tversky, Slovic, & Kahneman, 1990), the framing of the decision in terms of choice and rejection is likely to lead to preference reversals, so that the decision to select one candidate may not necessarily equal the decision to reject the other candidate from the pair. Similarly to the previous hypothesis which predicted a better differentiation between positive options, I assume that the differentiation between two candidates will be better if the decision is framed positively (i.e. choice) than if options are framed negatively (i.e. rejection). This leads to the next hypothesis:

> **Hypothesis 5: The certainty to choose a more positive candidate from the pair will be higher than the certainty to reject a more negative candidate from the pair.**

Finally, as positive features are more likely to differentiate between good and better candidates, it is also probable that they will determine which option is the best. Thus, the next hypothesis can be predicted:

> **Hypothesis 6: Voting intention will be better predicted by the candidate's similarity to an ideal politician than by his/ her similarity to a bad politician.**

Mediating role of affective evaluation in the relationship between similarity judgements and voting intention

Affective evaluation may be an important mediator in the relationship between framing (i.e. positive and negative frame of reference) and preference. So far, most research has focused on affect understood as short-term affective states and emotions (such as anger, fear, interest or distrust) resulting from framing manipulation. For such situations, mood congruent effects based on affect heuristic were typically found (Slovic, Finucane, Peters, & MacGregor, 2007). However, investigations on affective evaluation such as liking or preference (rather than fleeting emotional responses) have suggested appeal ratings to be a stronger mediator of the relationship between framing and preference for options framed in a positive manner rather than in a negative one (see Study 2 in Stark et al., 2017). Thus, the following will be tested:

> **Hypothesis 7: Affective evaluation of a political candidate will mediate the relationship between similarity judgment and voting intention. The mediating effect will be stronger for similarity to an ideal politician.**

The presented hypotheses will be tested in a series of seven experimental studies. However, due to the fact that the same research problems will be addressed in more than one study as well as accounting for various study designs, the order in which the hypotheses will

be tested will not follow the above described hypotheses. Table 1 presents the outline of hypotheses that will be studied in particular empirical studies.

Table 1: The hypotheses that will be studied in particular empirical studies.

Hypothesis	Study	Additional information
0	Study 1 Study 7	The effect of positive and negative comparison standards Framing of a decision in terms of choice and rejection
1	Study 2 Study 3 and Study 4	Hypothesis 1c (for S = 0.5) Hypothesis 1a and 1b (for S < 0.5 and S > 0.5)
2	Study 3 Study 4	The effect of number of positive and negative features on candidate evaluation The effect of positive and negative morality and competence features on candidate evaluation
3	Study 5 and Study 6	Differentiation between a few positive and a few negative candidates
4	Study 5 and Study 6 Study 4 and Study 7	Differentiation between a few positive and a few negative candidates (Study 5 and Study 6 on closed sets, Study 4 and Study 7 on open sets)
5	Study 7	Candidate differentiation in choice/ rejection framing
6	Study 5	Similarity to an ideal and bad politician as predictors of voting intention
7	Study 3	Mediating role of affective evaluation in the relationship between similarity judgements and voting intention

5. General methodology

5.1. Overall description of experimental designs

I designed seven experimental studies in which I will analyse how candidate evaluation and similarity judgements will be affected by 1) additional positive and negative features added to candidate description, 2) candidate favourability (as measured by the ratio of positive and negative features characterising a candidate), 3) the valence of the frame of reference (i.e. comparison to an ideal or bad politician), 4) framing of the decision in terms of choice or rejection.

In Study 1 I will investigate whether the activation of a positive and negative comparison standard (i.e. the category of an ideal and bad politician) will change the evaluation of an authentic, relatively well-known and popular politician. This study will test ***Hypothesis 0***.

In Study 2 I will analyse how additional positive and negative features affect the perception of a candidate whose image is neutral, that is who is characterized by an equal number of positive and negative features. This study will test ***Hypothesis 1c***.

In Study 3 and Study 4 I will investigate how additional positive or negative information affects the perception of candidates whose image is either favourable or unfavourable (***Hypothesis 1a*** and ***1b***). Furthermore, in Study 3 I will look at how the number of positive and negative features affect candidate liking and voting intention (***Hypothesis 2)*** as well as I will test the mediating role of affective evaluation in the relationship between similarity judgements and voting intention (***Hypothesis 7***). In Study 4, I will additionally test the asymmetrical effect of positive and negative features in the domain of morality-related

and competence related features (***Hypothesis 2)*** and a differentiation between a few positive and a few negative options (***Hypothesis 4)***.

In Study 5 and Study 6 I will test how an increase in feature positivity and feature negativity influence the perception of candidates whose image is either favourable or unfavourable ***(Hypothesis 3***) as well as how well people differentiate among a few positive and a few negative candidates (***Hypothesis 4)***. Furthermore, in Study 5 I will investigate how well similarity to an ideal politician and bad politician predicts voting intention (***Hypothesis 6***).

In Study 7, I will analyse how additional positive and negative information affect a decision to choose or reject one of the candidates presented in the pair. Furthermore, I will test the effect of valence framing and investigate the differentiation between neutral, more positive or more negative options. This study will test ***Hypothesis 0*** as well as ***Hypothesis 4*** and ***Hypothesis 5.***

In four out of seven studies, candidate profiles will be presented in a narrative form (Study 2, Study 3, Study 4 and Study 7). In these studies, candidate profiles will differ in the number of positive and negative features that characterize them. In two other studies (Study 5 and Study 6) candidates will be presented in a chart-like form of a matrix with six different criteria (such as education, experience, or morality). Candidates will differ in the extent to which they fulfil particular criteria (ranging from -10 s*coring extremely low on this feature* to +10 *scoring extremely high on this feature*). Thanks to such a presentation I will be able to investigate how well people differentiate among candidates, depending on whether their profiles are presented in a narrative or numerical manner. Furthermore, this type of presentation will represent either objects that can be described as open sets of features (a narrative presentation) or closed sets of features (a matrix presentation).

5.2. Selection of features used to create candidate profiles

In order to determine that the observed effects were solely attributed to the valence of features used to create candidate profiles and not their content, I had to make sure to exclude potential confounding variables such as feature dominance, potency or salience (Baumeister et al., 2001; Rozin & Royzman, 2001). The first step in doing so was to determine features that people perceive as typical for categories of "an ideal politician" or "a bad politician". Numerous models of concept structures such as classical theory (Armstrong, Gleitman, & Gleitman, 1983), a prototype model (Rosch & Mervis, 1975), exemplar model (Medin & Shoben, 1988) or theory-based models (Murphy & Medin, 1985) investigated criteria or features that a particular object should have to be included into a given category. From various possible methods to measure concept structure, I decided to adopt MOCOM, *A Measure of Consumption Object Meaning*, proposed by Kleine and Kernan (1988, 1991), as it has been previously successfully used in political marketing (Cwalina & Falkowski, 2015). The method was designed to determine the "meaning" or "inner structure" of particular objects based on responses that people provided during a continued-association task. Thus, it allows to derive a subjective representation of an object which is based on respondent's knowledge and previous experience. Additionally, using the order in which each association was written down, the measure gives information on salient elements of the object. In order to do that, each association is assigned a dominance score (DS) based on the rationale that more salient features come to mind as first (and thus get higher dominance scores), whereas less relevant elements are produced later in the association task. Based on these dominance scores, all features characteristic for a particular object or a category are organized from the most to the least typical.

For the selection of features to all experiments I used the results of a preliminary study with ninety six students (55.2% female, M_{age} = 24.937, SD_{age} = 5.307) recruited at three Polish universities. The participants were randomly divided into two groups depending on whether they were asked to think about an ideal or a bad politician. The instructor asked respondents to write down within sixty seconds all associations that came to their mind when they were thinking about an ideal or a bad politician. Participants were told that there were no right or wrong answers and that the researcher was interested only in each respondent's opinions. It was emphasized that participants should write down all associations exactly in the order that they came to their minds.

In total, participants provided 358 associations to the category of an ideal politician and 296 for a bad politician. Each association rendered by individual participants was assigned a dominance score according to Szalay and Deese's recommendations (Kleine & Kernan, 1988; Szalay & Deese, 1978). The first response written by a respondent was given 6 points, the second 5 points, the third 4 points, the fourth to seventh response 3 points, the eighth and ninth response 2 points and all subsequent responses were assigned 1 point. The values reflect the salience of particular features as subjectively perceived by each respondent in the study.

In the following stage, all associations rendered by individual participants were analysed. All responses mentioning the same feature (e.g. intelligent) were grouped together and their dominance scores were summed across all respondents. Synonymous expressions (e.g. speaks well, is a good speaker, eloquent) were merged together and their dominance scores were added. All ambiguous characteristics were agreed upon based on judgements of three independent competent judges (Cronbach, 1948). The inter-rater reliability was excellent, ICC (3, k) = 0.924, CI [0.866, 0.955] (Cicchetti, 1994). The analysis yielded 171

unique features for the “ideal politician” category and 194 unique features for “bad politician” category. Three items from the set of “ideal politician” and two from “bad politician” had to be removed as they referred to proper names of popular politicians and could not be generalized to other politicians.

Table 2 presents thirty features with the highest values for both categories translated into English with their correspondent dominance scores. Appendix 1 provides a full list of all features characterizing the categories of “ideal political politician” and “a bad politician” in Polish, that is a language in which the features were produced.

Table 2: Thirty most salient features for the category of "an ideal politician" and "a bad politician" with their dominance scores (DS).

Ideal politician		**Bad politician**	
Feature	DS	Feature	DS
intelligent	54	liar	63
truthful	51	corrupted	48
honest	49	incompetent	37
just	31	uneducated	26
sincere	30	stupid	21
well-educated	20	quarrelsome	20
direct	16	left-winger	20
keeping promises	15	radical	19
lowering taxes	15	intolerant	19
right-winger	15	dishonest	17
good	13	greedy	16
open	13	lazy	14
committed	13	thinking only about him/herself	13
cares for citizens	12	despotic	11
emphatic	12	not interested in the state	11
competent	12	not keeping election promises	11
charismatic	11	crook	11

good speaker	11	populist	11
stable in his/ her beliefs	11	lacking culture	9
loyal	10	egoistic	9
impartial	9	Hollow (makes empty promises)	9
caring	9	nepotistic	9
altruistic	8	freak	9
trustworthy	8	nut	8
powerful	8	disloyal	8
ensuring security	7	non-empathic	8
eloquent	7	arrogant	7
consistent	7	fraudulent	7
active	6	not interested in voters' opinions	7
liberal	6	can't talk well	7

Derived features correspond well with the research on features attributed to an ideal president and main candidates in Poland's 2000 presidential elections (Cwalina & Falkowski, 2000, 2006) and have been validated in other countries (Cwalina, Falkowski, & Kaid, 2005; A. H. Miller et al., 1986). Such features as competence, honesty, fairness, intelligence, education, activity and openness seem to be universally accepted as important for a good political candidate. Although the research on negative features in the candidate's profile is less abundant, there is some evidence for validity of unfavourable traits as well (Miller, Wattenberg & Malanchuk, 1986). Additionally, provided features represented both dimensions of morality (warmth) and competence universally used when describing other people and political candidates (Cwalina & Falkowski, 2016; Fiske, Cuddy, & Glick, 2007; Peeters & Czapinski, 1990; Wojciszke, 2005). Features pertaining to morality category include for instance such characteristics as honesty, justice, fairness, trustworthiness or goodness, whereas those pertaining to competence contain such features as competence,

higher education, eloquence, wisdom or stupidity. As Table 2 suggests overall respondents used both dimensions to describe the characteristics and behaviour of an ideal and a bad political candidate, although there was a slight inclination for morality dimension.

Features derived in the preliminary study were used to construct candidate profiles which differed in the number of positive and negative features characterizing candidates. Dominance scores were taken into consideration while preparing candidate profiles for all conducted studies. Additionally, when necessary, further pilot studies were conducted which will be presented in the description of particular studies.

5.3. Ethics statement

The research project was approved by the Ethics Committee for Scientific Research on Human Subjects at SWPS University of Social Sciences and Humanities (approval number 27/2016 and 12/2020) and was conducted in compliance with APA ethical guidelines (APA, 2010).

5.4. Participants and Sampling

All participants took part in the study voluntarily and were not remunerated for their participation. All participants were recruited either at various Polish universities or came from American population (recruited via MTurk platform). As only those participants who volunteered to take part in the study were investigated, non-probability convenience sampling was used. Although such sampling has its limitations (which will be discussed in the Limitations section), it is common and generally accepted in social and psychological research (Leiner, 2014; Wilkinson, 1999).

6. Empirical investigations

Study 1

In Study 1, I analysed how the activation of the categories of an ideal and bad politician influenced the evaluation of a real-life and well-known political figure, as measured with the affective evaluation of the candidate and willingness to vote for him. Based on the research on valence framing I predicted that the evaluation of the same candidate would be different, depending on whether the candidate was compared to an ideal or bad politician. Although this prediction has already been demonstrated in many studies on the negativity effect in valence framing (Bizer et al., 2011; Bizer & Petty, 2005; Levin et al., 1998; Tversky & Kahneman, 2017), it is still important if it holds in the domain of evaluating political candidates. Moreover, the assumption that the standard of comparison plays an important role in the evaluation of candidates is a cornerstone of all other studies in this dissertation. In sum, the aim of Study 1 was to verify the following:

> ***Hypothesis 0*:** The comparisons to a bad politician will result in a more favourable candidate evaluation than if the candidate is compared to an ideal politician.

1. Method

1.1. Participants

Participants (N = 151; 57% women; M_{age} = 25.06, SD_{age} = 5.169) were recruited from the student population. On average, participants were moderately interested in politics (M = 4.497, SD = 2.532, as measured with a 11-point Likert scale from 0 *not at all interested in politics* to 10 *extremely interested in politics*) and were neither extremely left- or right-wing

oriented (M = 5.291, SD = 2.021, as measured with a 11-point Likert scale from 0 *extreme left* to 10 *extreme right*).

1.2.Procedure

In the first stage of the experiment, participants were asked to think about a relatively well-known and favourably perceived politician. Based on the pilot study (more in Materials section), a figure of Barack Obama, an American president at that time was selected. Participants were asked to reflect upon the features that he possessed and write them down, following mental imagery instruction (Sujan, Bettman, & Baumgartner, 1993). The instruction read: *Please write down all associations that come to your mind when you think about Barack Obama – the president of the United States. Please write the associations in the exact order as they come to your mind and do not omit any association*. Participants were given one minute to complete this task. When the time passed, the participants were asked to what an extent they liked the politician and how recognizable he was to them.

In the second stage of the experiment, valence framing procedure followed, which aim was to activate in participants the categories of "an ideal politician" or "a bad politician". Again, mental imagery instruction (Sujan et al., 1993) was used. Depending on the condition, participants were asked to reflect upon and write down all associations that came to their mind when they were thinking about an ideal politician (positive framing) or a bad politician (negative framing). Again, they were reminded to write down the associations in the order they were thinking about them and instructed that they had one minute to complete this task. When the time passed, participants again evaluated Barack Obama with regard to their overall evaluation of him and intention to vote for him. Finally, participants had to write down a post that in their opinion the politician was most likely to run for (*Please write down the post that first came to your mind when you read the question on voting intention*). The

aim of the question was to make the evaluation more realistic. After the experiment finished, participants were debriefed.

1.3.Materials

The selection of Barack Obama as an object of evaluation in the study was justified with the fact that the experiment took place shortly after the parliamentary and presidential elections in Poland (May and October 2015), which left the Polish electorate polarized (Buras, 2015; Sanecka-Tyczyńska, 2015). Therefore, the American president of that time was selected in order to avoid a potential confounding effect of participants' political views or attitudes toward a selected Polish politician. As the pilot study showed, Barack Obama was a generally recognizable and favourably perceived political figure (recognisability: *How recognizable is the politician to you?* with answers ranging from 0 *I don't know the politician at all* to 10 *I know the politician very well; M* = 5.333, *SD* = 1.175) and overall evaluation (*How much do you like the politician?*, with answers ranging from 0 *I dislike the politician a lot* to 10 *I like the politician a lot, M* = 5.468, *SD* = 1.457).

The following measures were used to evaluate Barack Obama in the actual experiment. All answers were provided on a 11-point Likert scale. The overall evaluation was assessed with a question *How much do you like the politician?* (with 0 *I dislike the politician a lot* and 10 *I like the politician a lot*), recognisability was assessed with a question *How recognizable is the politician to you?* (with 0 – *I don't know the politician at all* and 10 *I know the politician very well*) and the voting intention was assessed with a question *If the politician ran for an office, how likely are you to vote for him?* (with 0 *I would definitely not vote for the politician* and 10 *I would definitely vote for the politician*).

2. Results

The results confirmed the findings of a pilot study and showed Barack Obama to be a recognizable (M = 6.748, SD = 2.15) and relatively liked political figure (M = 5.338, SD = 2.185). Asked to write down the office that Barack Obama was most likely to run for, participants mentioned most frequently the office of the president. Such positions as an ambassador, a leader of an international organization, the Secretary of the United Nations or an advisor to international organizations were also stated.

The framing effect turned out to be significant, showing that participants who were asked to think about features characteristic for a bad politician evaluated Barack Obama more positively than those who were asked to reflect about an ideal politician, $t(149) = 2.161$, $p = .032$, $d = 0.351$. For voting intention, the result was marginally significant, $t(149) = 1.673$, $p = .096$, $d = 0.272$, showing that participants were more willing to vote for the politician after he was juxtaposed with a bad politician than the ideal one. The means for the overall evaluation and voting intention are presented in Table 3.

Table 3: Means for overall evaluation and voting intention for Barak Obama as a result of the activation of a positive or negative frame of reference..

	Activated category			
	Ideal politician		Bad politician	
	M	SD	M	SD
Overall evaluation	5.125	2.313	5.886	2.013
Voting intention	4.972	3.067	5.759	2.713

Additionally, in order to determine the direction of a change (i.e. whether the negative category increased the evaluation of a politician or the positive one decreased it), I ran a (2)

× 2 mixed ANOVA, with the evaluation as a within-factor (before *vs* after framing) and the frame of reference (positive/ negative) as a between-factor.

Although the analysis showed a significant effect of frame of reference, $F(1, 149) = 4.028$, $p = .047$, $\eta^2 = .026$ ($M_{positive} = 5.027$, $SD_{positive} = 2.361$;, $M_{negative} = 5.125$, $SD_{negative} = 2.313$), the main effect of the evaluation was only marginally significant, $F(1, 149) = 3.035$, $p = 0.084$ $\eta^2 = .020$ ($M_{pre\text{-}test} = 5.027$, $SD_{pre\text{-}test} = 2.361$;, $M_{post\text{-}test} = 5.125$, $SD_{post\text{-}test} = 2.313$) and the interaction effect was non-significant, $F(1, 149) = 0.655$, $p = 0.420$ $\eta^2 = .004$. As the interaction effect did not reach required significance, there was no statistical reason to conduct further analyses. The inspection of simple effects suggested, however, no attitude change as a result of the activation of a positive frame of reference, $F(1, 149) = 2.804$, $p = .096$, $\eta^2 = .018$, and an increase in affective evaluation after the activation of a negative frame, $F(1, 149) = 4.672$, $p = .032$, $\eta^2 = .030$). Table 4 presents the means for overall evaluation of Barack Obama before and after framing manipulation.

Table 4: Means for overall evaluation of Barack Obama before and after the activation of a positive (ideal politician) or negative (bad politician) frame of reference.

	Activated category			
Overall Evaluation	Ideal politician		Bad politician	
	M	SD	M	SD
Before	5.028	2.362	5.620	1.983
After	5.125	2.313	5.886	2.013

3. Discussion

The results supported the predictions about a higher evaluation of a politician after the activation of a category of a bad politician (***Hypothesis 0***) compared to the one resulting from the activation of the positive category. The effect was statistically significant for overall

evaluation and marginally significant for voting intention. Additionally, in order to investigate the direction of change, I compared the evaluation of a politician before and after he was juxtaposed with a prototypical ideal or bad politician. Although the interaction model was non-significant, the post-hoc comparisons suggested that the difference in the evaluation was rather a result of an increase in evaluation after the activation of a negative category.

The fact that a politician is rated higher when he is compared to a bad politician than to an ideal politician can be interpreted with regard to the inclusion/ exclusion model proposed by Bless and Schwarz (Bless & Schwarz, 2010; Schwarz & Bless, 1992a, 1992b). The model highlights the role of categorization processes in the construction of targets and standards and predicts how the inclusion or exclusion of certain information leads to assimilation and contrast effects and resulting differences in target evaluation. Using this framework to explain the findings of Study 1, it can be said that a higher evaluation of Barack Obama after the activation of a negative category was a result of the exclusion of features characteristic for a bad politician from the description of a former American President. The observation is similar to the one found by Schwarz and Bless (1992b) where a mention of a scandal-ridden politician decreased the perceived trustworthiness of politicians in general but increased the trustworthiness of other specific politicians.

Study 2

The aim of Study 2 was to provide evidence for ***Hypothesis 1*** which predicted that the effect of additional positive and negative features on candidate evaluation is dependent on the initial image favourability. ***Hypothesis 1*** is divided into three parts (a, b and c), providing predictions for the effect of additional favourable and unfavourable information added to objects who are rather favourable or unfavourable (***Hypothesis 1*****a** and ***1b***) or have the same number of positive and negative features (***Hypothesis 1c***). Before analysing how additional positive or negative features affect the perception of candidates who have either more negative or more positive features, I wanted to test this effect for a candidate who is initially characterized by the equal number of positive and negative features. Additionally, I wanted to investigate the magnitude of these changes depending on whether the candidate was juxtaposed with an image of an ideal or bad politician. In order to do that, I designed three profiles that differed in the number of favourable and unfavourable characteristics that were used to describe a candidate. The neutral condition consisted of five positive and five negative features, while the positive candidate had five additional favourable traits and the negative candidate had five additional unfavourable information. In the study, I compared which of the features had a stronger effect on candidate evaluation, depending on the valence of the frame of reference that was activated.

According to the predictions of the contrast model of similarity, when two object have half of the features in common, that is their similarity $S = 0.5$, operations on distinctive features (such as addition and deletion) have a stronger effect compared to operations on common features. Therefore, if we describe a politician with five positive and five negative features and ask the participants to compare him/ her to an ideal politician, the candidate will have five common (positive) features and five distinctive (negative) features. However, if we

compare the same candidate to a bad politician, then the candidate will still have five common features and five negative features but this time unfavourable features will be common and favourable will be distinctive. The effect of adding more positive or negative features to the description of a "neutral" candidate will be different depending on the frame of reference. Assuming that for an object characterized by the same number of common and distinctive features, distinctive features are stronger, then additional negative features should have a stronger effect after the activation of a positive frame of reference (an ideal politician), while additional positive features should be more effective in the negative frame of reference condition (bad politician). The following hypothesis was tested in the study (the wording was changed to account for three dependent variables):

> ***Hypothesis 1c***: For the positive frame of reference, additional negative features will decrease candidate evaluation more than additional positive features will increase it, whereas for the negative frame of reference, additional positive features will increase candidate evaluation more than additional negative features will decrease it.

1. Method

1.1.Participants

One hundred sixty one psychology students (75% female, M_{age} = 29.174, SD_{age} = 9.366) took part in the experiment. On average, participants were moderately interested in politics (*M* = 4.34, *SD*= 2.579, measured on a 11-point Likert scale with 0 *not at all interested*; 10 *very much interested*) and were neither extremely left- or right-wing oriented (*M* = 4.29, *SD* = 2.036, measured with a 11-point Likert scale from 0 *extremely left-wing* to 10 *extremely right-wing*). The group was randomly divided into six research conditions. Table 5 shows the number of respondents in each group and the outline of the study.

Table 5: Research conditions depending on the number of positive and negative features used in candidate description and the valence of the frame of reference

	N	Number of positive features	Number of negative features	Type of operation
	92		**Positive frame of reference**	
Group 1	35	5	5	Control group
Group 2	34	10	5	Additional positive (common) features
Group 3	23	5	10	Additional negative (distinctive) features
	69		**Negative frame of reference**	
Group 4	22	5	5	Control group
Group 5	23	10	5	Additional positive (distinctive) features
Group 6	24	5	10	Additional negative (common) features

1.2.Procedure

In each of the conditions, respondents were presented with descriptions of a fictitious political candidate that consisted of a different number of positive and negative characteristics (see Table 5). Each participant read only one candidate profile. Depending on the group, respondents were asked to think about and reflect on features, abilities and behaviour characteristic for either and ideal or bad politician. Additionally, they were provided with a list of 15 positive (or negative) adjectives and asked to rank them from the most typical for an ideal (or bad) politician to the least characteristic for that category. The aim of this task was to make sure that participants engaged in thinking about a prototypical politician (either good or bad) for each category. Following this manipulation, participants were presented with a candidate profile (positive, negative or neutral) and asked to evaluate him. After the experiment finished, respondents were debriefed.

1.3.Materials

The experiment was presented in Polish, the language native to the participants of the study. Three candidate profiles, differing in the number of positive and negative features, were created based on features characteristic for categories of "an ideal politician" and "a bad politician" generated in the preliminary study. The first of those profiles, the neutral one, consisted of five positive and five negative features. The second and third profile used the same sets of positive and negative features but the second profile (called "the positive candidate" below) also included additional five positive features, while the third profile (called "the negative candidate") included additional five negative features. The three descriptions are presented below in English translation

> ***Neutral candidate (5 positive, 5 negative features)****: The politician has an opinion of being intelligent and truthful. His supporters praise him for his honesty, sincerity and justice, whereas his opponents criticize him for his intolerance, incompetence and lack of education. He is also considered to be quarrelsome and too radical.*
>
> ***Positive candidate (10 positive, 5 negative features)****: The politician has an opinion of being intelligent and truthful. His supporters praise him for his honesty, sincerity and justice. He is said to be open-minded, empathic and committed . He keeps his promises and cares for citizens. His opponents criticize him for his intolerance, incompetence and lack of education. He is also considered to be quarrelsome and too radical.*
>
> ***Negative candidate (5 positive, 10 negative features)****: The politician has an opinion of being intelligent and truthful. His supporters praise him for his honesty, sincerity and justice, whereas his opponents criticize him for his intolerance,*

incompetence and lack of education. He is also considered to be populist, despotic, quarrelsome and too radical. He is described as stupid, greedy and lacking culture.

Constructing candidate profiles, I made sure to include features that had comparable dominance scores and the affective value of individual characteristics (see the preliminary study). In order to ascertain that additional positive features were not more positive than additional negative features were negative, the features were tested in a pilot study. In the pilot study, 20 participants were presented with the list of 46 various traits describing political candidates (selected based on the preliminary study). Respondents were asked to evaluate on a 21-point Likert scale the extent to which a particular feature was either positive or negative, with -10 as *very negative* and +10 *very positive*, with 0 in the middle. All features analysed in the pilot study are presented in Appendix 2, along with their descriptive statistics. In order to select adequate features for candidate profiles, I chose attributes that had similar affective loadings (measured in absolute values) and ran a (2) × (5) repeated measures ANOVA for five positive and five negative features, with valence (positive/ negative) and feature as within-subject variables, testing whether there were significant differences between positive and negative characteristics. The results turned out to be non-significant for base features, $F(1, 19) = 3.630$, $p = 0.072$, showing no differences between positive ($M = 7.580$, $SD = 2.664$) and negative ($M = 6.64$, $SD = 3.647$) features, when measured in absolute values. Similarly, the analysis conducted for additional features yielded non-significant results, $F(1, 19) = 0.692$, $p = 0.416$, showing no differences between additional positive ($M = 7.677$, $SD = 2.390$) and negative features ($M = 7.380$, $SD = 3.212$), when measured in absolute values. Features used in the study together with their dominance scores and affective loadings are presented in Appendix 3.

Each participant read only one of the above profiles and each profile was presented to two different groups of participants. The groups differed with one of the questions in the experimental questionnaire. Half of the participants evaluated the candidate's similarity to an ideal politician, and the other half evaluated the candidate's similarity to a bad politician. The specific question read: *How similar is the political candidate to an image of an ideal (bad) politician?* and the participants answered on a 11-point Likert scale, with 0 *very dissimilar* and 10 *very similar*. All participants then evaluated the candidate with regard to his affective evaluation. The question read: *How much do you like the politician?*, with answers ranging from 0 *I dislike the politician a lot* to 10 *I like the politician a lot*, and voting intention assessed with a question *If the politician ran for an office, how likely are you to vote for him?*, with possible answers ranging from 0 *I would definitely not vote for the politician* to 10 *I would definitely vote for the politician*.

2. Results

The experiment followed a 3 x 2 between groups design with the candidate description (neutral, positive, negative) as one independent variable and the valence of the frame of reference (ideal or bad politician category activated) as the second independent variable. There were three dependent variables analysed in the study. Table 6 presents means for all dependent variables and conditions analysed in the study.

Table 6: Means for candidate perception (measured with similarity to an ideal and bad politician, affective evaluation and voting intention) for three candidate profiles (neutral, positive and negative) analysed in Study 2.

Dependent variable	***Frame of reference (category activated)***	***Candidate profile***	***M***	***SD***
Similarity to either the ideal or bad politician	Positive frame (ideal politician)	neutral	5.000	2.326
		positive	5.147	2.524
		negative	3.391	2.350
	Negative frame (bad politician)	neutral	5.545	2.176
		positive	5.071	2.292
		negative	6.421	2.194
Affective evaluation	Positive frame (ideal politician)	neutral	4.457	2.501
		positive	5.088	2.527
		negative	4.217	2.335
	Negative frame (bad politician)	neutral	3.455	1.819
		positive	4.250	1.917
		negative	3.474	2.458
Voting intention	Positive frame (ideal politician)	neutral	4.514	2.790
		positive	4.824	2.779
		negative	3.174	2.657
	Negative frame (bad politician)	neutral	3.000	2.268
		positive	4.000	2.749
		negative	2.842	1.951

A 3 × 2 ANOVA was conducted for each dependent variable: similarity (either similarity to an ideal or a bad politician depending on the condition), affective evaluation and voting intention. To test the effect of additional positive and negative features, the simple main effect of candidate profile was analysed in which I compared the neutral condition (5+ 5-) against the more positive description (10+ 5 -) and the more negative one (5 + 10-). The difference between the negative and positive candidate was not interpreted as it was not relevant for hypothesis-testing.

The analysis conducted for similarity measure showed a significant frame effect, $F(1, 155) = 9.564$, $p = .002$, $\eta^2 = 0.058$, showing that overall for three candidate descriptions

the similarity to a bad politician was higher (M = 5.594, SD = 2.646) than the similarity to an ideal politician (M = 4.652, SD = 2.492). The candidate profile effect was non-significant, $F(2, 155) = 0.290$, $p = .749$, $\eta^2 = 0.004$, showing no differences between three candidate profiles with regard to their similarity to either ideal or bad politician, for the neutral candidate (M = 5.273, SD = 2.266), for the positive candidate, (M = 5.113, SD = 2.403), for the negative candidate, (M = 4.762, SD = 2.721).The interaction effect was significant, $F(2, 155) = 5.820$, $p = .004$, $\eta^2 = 0.070$.

The further analysis of simple effects yielded a significant simple effect of candidate profile for similarity to an ideal politician, $F(2, 155) = 4.513$, $p = .012$, $\eta^2 = 0.055$, showing a significant difference between the description of a neutral candidate (M = 5.00, SD = 2.326) and the negative one (M = 3.391, SD = 2.350), $p = .033$, as well as no difference between the neutral candidate and the positive one (M = 5.147, SD = 2.525), $p = .991$. The analysis conducted for similarity to a bad politician as a dependent variable yielded a non-significant simple main effect of candidate profile, $F(2, 155) = 1.901$, $p = .153$, $\eta^2 = 0.024$, showing no differences between all three candidate profiles, for the neutral candidate (M = 5.545, SD = 2.176), for the positive candidate, (M = 5.071, SD = 2.292), for the negative candidate, (M = 6.421, SD = 2.194).

For affective evaluation as the dependent variable, only a frame effect was significant, $F(1, 155) = 5.362$, $p = .032$, $\eta^2 = 0.033$, showing that overall all three candidates were evaluated more favourably when the positive frame of reference was activated, (M = 4.630, SD = 2.471) compared to the activation of the negative frame of reference, (M = 3.783, SD = 2.057). The main effect for candidate profile, $F(2, 155) = 2.074$, $p = .129$, $\eta^2 = 0.026$, was non-significant, showing no differences between three candidate profiles, for the neutral candidate (M = 4.070, SD = 2.299), for the positive candidate, (M = 4.710, SD = 2.293), for

the negative candidate, (M = 3.881, SD = 2.391). As the interaction effect was non-significant, $F(2, 155) = 0.040$, $p = .961$, $\eta^2 = 0.001$, simple main effects of candidate profile were not analysed.

For voting intention, the analysis showed a significant frame effect, $F(1, 155) = 4.449$, $p = .037$, $\eta^2 = 0.028$, showing a higher willingness to vote for candidates after the activation of the positive frame of reference, (M = 4.293, SD = 2.803) than the negative one (M = 3.362, SD = 2.425). The effect for candidate profile was also significant, $F(1, 155) = 3.609$, $p = .029$, $\eta^2 = 0.044$, indicating a higher voting intention for the positive candidate, (M = 4.452, SD = 2.774) compared to the neutral (M = 3.930, SD = 2.685) and negative candidate, (M = 3.024, SD = 2.343). No differences between the neutral and negative candidate were found. As the interaction effect was non-significant, $F(2, 155) = 0.625$, $p = .537$, $\eta^2 = 0.008$, , simple main effects of candidate profile were not analysed.

3. Discussion

The aim of Study 2 was to test the effect of additional positive and negative information on the evaluation of a candidate whose image was neutral (i.e. who had the same number of positive and negative features). Based on the predictions of the ratio model (Tversky, 1977), a stronger effect of operations on distinctive features (their addition or deletion) was expected compared to operations on common features. More specifically, it was hypothesized that for comparisons to the positive frame of reference, additional negative features would reduce candidate evaluation more than additional positive features would increase it; the opposite effect was predicted for the negative frame of reference, where additional positive features were expected to lead to greater changes compared to additional negative features.

The results only partially supported predicted effects, showing that additional negative features were more effective in changing candidate evaluation if the candidate was presented after the activation of a positive frame of reference. A parallel effect for a stronger influence of positive features after the activation of a negative frame of reference was not observed. Importantly, the effect of negative features was limited to the similarity measure and was not present in affective evaluation and voting intention.

Once again, the effect can be interpreted with regard to the inclusion/ exclusion model (Bless & Schwarz, 2010; Schwarz & Bless, 1992a, 1992b) so that the activation of the category of an ideal politician as a standard of comparison provided a stark contrast to added negative features. However, the model does not account for the lack of the effect of added positive features when compared to the image of a bad politician. The fact that additional negative features were strong enough to change the candidate's perceived similarity to the category of an ideal politician, whereas positive characteristics were not with regard to the category of a bad politician may be interpreted as a further evidence for negativity effect, which points to a stronger effect of unfavourable information compared to its positive counterpart (Baumeister et al., 2001).

However, the result can be also attributed to framing manipulation. More specifically, the predicted effect was observed only in a situation when the image of an ideal politician was activated (a positive frame of reference) and not when participants were asked to reflect upon the negative characteristics of a bad politician. If so, the effect may not depend so much on the valence of additional features but also the valence of the activated category. More specifically, it is possible that the image of bad politician that people had to reflect on was more unfavourable than the image of an ideal politician was favourable. Thus, due to the extremity of the negative frame of reference, candidate profiles that were presented later were

evaluated as more similar to each other. In other words, the difference between candidate profiles which were positive (10 + 5-), negative (5+, 10-) and neutral (5+ 5-) was smaller when they were evaluated after the activation of an image of bad politician than when the activated frame of reference was positive.

Furthermore, it is possible that the activation of positive and negative frames of reference changed the mind-set with which participants approached the evaluation task. More specifically, the activation of a positive frame might have led to an increased focus on favourable attributes and a choice mind-set in which participants were motivated to search for the best option, whereas the activation of a negative frame resulted in a focus on unfavourable attributes and a rejection mind-set in which participants looked for the least attractive option. If so, it would be reasonable to assume that people were more motivated to see differences in positive rather than negative framing condition. This assumption was tested in Study 7.

Study 3

So far, Study 2 tested the effect that additional positive and negative information had on the evaluation of a candidate who was characterized by an equal number of positive and negative features. Thus, the aim of Study 2 was to verify the predictions of the contrast model of similarity for $S = 0.5$. As stipulated in ***Hypothesis 1c***, for such a situation a greater effect of distinctive features is expected, so that if a candidate is compared to an ideal politician, additional negative information should decrease candidate evaluation more than additional positive information would increase it, whereas for comparisons to a bad politician, additional positive features should lead to greater changes in candidate evaluation. The results of Study 2 provided evidence for the stronger effect of additional negative features but did not corroborate the predictions for additional positive features.

The aim of the next study was to verify the predictions of the contrast model of similarity for situations in which objects have a different number of common and distinctive features. More precisely, I wanted to investigate how the same favourable and unfavourable features such as "good education" or "lack of culture" would change candidate evaluation depending on how many other positive and negative traits a politician had. The ratio of favourable and unfavourable features used in a candidate profile would determine his or her image favourability. Based on the predictions of the contrast model of similarity, for unfavourable candidates, additional positive features were expected to increase candidate evaluation to a greater extent than negative features would decrease it (***Hypothesis 1a***), whereas for favourable candidates, additional negative features were expected to decrease candidate evaluation to a greater extent than positive features would increase it ***(Hypothesis 1b*)**. These general predictions were slightly modified to fit the study design and were tested in the following form in Study 3:

Hypothesis 1a: Additional positive features will lead to a greater increase in candidate evaluation for candidates whose image is unfavourable but will not change the evaluation of candidates whose image is favourable.

Hypothesis 1b: Additional negative features will lead to a greater decrease in candidate evaluation for candidates with a favourable image but will not change the evaluation of candidates with an unfavourable image.

Additionally, the aim of the study was to analyse how well the theoretical predictions of the contrast model of similarity fit the observed measures of similarity coming from the empirical study.

In order to test the predicted effects, I designed candidate profiles that differed in the number of positive and negative features that characterized them. The unfavourable candidates had either two or four positive features as well as seven or nine negative features, whereas the favourable candidates were characterized by either seven or nine positive features and two or four negative features. Respondents were asked to evaluate a randomly assigned candidate description. Candidate profiles were later organized into pairs and compared in such a way that the second candidate (Level 2) had either two additional positive or two additional negative features more than the first candidate (Level 1). Table 7 presents the pairs of candidates compared in the study and the number of features characterizing each candidate.

Table 7: Pairs of candidate profiles analysed in the study depending on the number of positive and negative features characterising candidates. Numbers followed by „+" refer to a number positive features used in the candidate description while numbers followed by "-" refer to a number of negative features.

		Candidate pairs			
2 features added to Level 2		Image favourability (Level 1)[2]			
		very unfavourable	unfavourable	favourable	very favourable
positive	Level 1	(**2+**, 9–)	(**2+**, 7–)	(**7+**, 4–)	(**7+**, 2–)
	Level 2	(**4+**, 9–)	(**4+**, 7–)	(**9+**, 4–)	(**9+**, 2–)
negative	Level 1	(2+, **7–**)	(4+, **7–**)	(**7+**, **2–**)	(9+, **2–**)
	Level2	(2+, **9–**)	(4+, **9–**)	(**7+**, **4–**)	(9+, **4–**)

To verify the predictions concerning the effect of positive features, the candidates presented in upper rows of Table 7 were compared. As the table shows, the operations were performed only on positive features, so that candidates from Level 2 had two additional positive features compared to candidates from Level 1, while the number of negative features stayed constant. For instance, a candidate characterized by four positive and nine negative features (Level 2) had two additional positive features compared to the candidate characterized by two positive and nine negative features from Level 1. To verify the predictions concerning the effect of negative features, the candidates presented in lower rows of Table 7 were compared. Analogically to the previous situation, candidates differed in the number of additional negative features added, so that a candidate from Level 2 had two

[2] The terms "very unfavourable", "unfavourable", "favourable" and "very favourable" are not always accurate as sometimes the same candidate (e.g. 2+ 7-) is once described as "very unfavourable" or "unfavourable". However, if applied to the pair of compared candidates, the terms rather accurately depict the extent of candidate favourability.

additional negative features compared to the candidate from Level 1. The number of positive featured remained unchanged.

Apart from testing ***Hypothesis 1a*** and ***Hypothesis 1b***, the aim of Study 3 was to verify the predictions of ***Hypothesis 2***:

> ***Hypothesis 2:*** Negative information will have a greater effect on a candidate's evaluation than positive information.

Finally, the aim of Study 3 was to test the mediating role of affective evaluation in the relationship between similarity judgements and voting intention (see ***Hypothesis 7***). Typically, most research on similarity focuses mainly on cognitive mechanisms involved in such judgements. However, comparisons to the images of an ideal and bad politician as well as the effect of additional positive and negative information on candidate evaluation is likely to be infused with some kind of affective valuation. Thus, based on rather limited literature on mediators of framing effects, I expected affective evaluation to be a mediator between similarity judgements and voting intention (Seo et al., 2010; Stark et al., 2017; Young et al., 2018). Furthermore, as shown in studies on the differential processing of positively and negatively valenced information (Abele, 1985; Rozin & Royzman, 2001), it is likely that the final decision to vote for a candidate will be more influenced by affective evaluation for a situation in which the focus is on the similarity to an ideal politician (positive frame of reference) than if the negative category is the activated. Thus, the following hypothesis was tested:

> ***Hypothesis 7***: Affective evaluation of a political candidate will mediate the relationship between similarity judgment (a similarity to an ideal candidate and similarity to a bad candidate) and voting intention. The mediating effect will be stronger for similarity to an ideal politician.

Two mediating models with similarity to an ideal politician or bad politician as an independent variable, affective evaluation as a mediator and voting intention as a dependent variable were tested separately for favourable and unfavourable candidate profiles to investigate whether image favourability mediated the effect.

1. Method

1.1. Participants

One hundred twenty participants, aged 18 – 54 (M = 24.41, SD = 5.449) took part in the experiment. The sample (57% female) was recruited from university students. On average, participants were moderately interested in politics (M =4.33, SD = 2.696, on a 11-point scale) and were neither extremely left- or right-wing oriented (M = 4.42, SD = 1.943, on a 11-point Likert scale).

1.2. Procedure

Each of the participants was asked to read and evaluate the descriptions of two randomly selected political candidates. The questionnaires were designed in such a way that both evaluated candidates had the same proportion of features but they differed in the extent of their positivity/ negativity. For instance, a participant would evaluate one candidate profile characterized by seven positive and two negative features and the other profile characterized by two positive features and seven negative features. The order of the presentation was randomized. In total, eight different versions of questionnaires were prepared. One hundred twenty participants returned in total evaluations of 240 political candidates which were treated as independent measures due to randomization.

1.3. Materials

Eight descriptions of political candidates were used. After reading a profile, participants evaluated the candidate with regard to five dependent variables which included affective evaluation (*On the scale from 0 to 10, how much do you like this political*

candidate? with 0 *strongly dislike* and 10 *strongly like*), his similarity to an ideal politician and similarity to a bad politician (with 0 *very dissimilar* and 10 *very similar*), along with voting intention (*If the candidate would run for office, would you vote for him?* answered on an 11-point Likert scale with 0 *definitely not* and 10 *definitely yes*).

All profiles contained both positive and negative features but four of them contained more positive features and the other four contained more negative features (see columns "positive features" and "negative features" in Table 8). The ratio between positive and negative features was used to determine the extent of image favourability, so that candidates whose profiles consisted of more positive than negative features were regarded as favourable, whereas those with more negative features were considered as unfavourable. The ratio between positive and negative features was also used to measure the profile's similarity to the positive and negative referent (i.e. image of an ideal or bad politician) according to the ratio model of similarity (Equation 2). It can be safely assumed that if there are nine features describing a politician, an ideal one would have all of them positive whereas the bad one would be rated negatively on all those features. Therefore, a measure of similarity between a candidate who has seven positive and two negative features and an ideal politician would equal S = 0.78 ($S = 7/(7+2)$). Table 8 presents similarity values for each candidate's similarity to the positive and negative referent.

Table 8: Similarity to the positive and negative referent of candidate profiles used in the study. Similarity is calculated based on the ratio model of similarity. The candidates are organized from the highest to the lowest similarity to an ideal politician (Column 3).

positive features	negative features	Similarity to an ideal politician	Similarity to a bad politician
9	2	0.82	0.18
7	2	0.78	0.22
9	4	0.69	0.31
7	4	0.64	0.36
4	7	0.36	0.64
4	9	0.31	0.69
2	7	0.22	0.78
2	9	0.18	0.82

An exemplary profile for a candidate characterized by nine positive features and four negative features is presented in Table 9, whereas all other candidate profiles are included in Appendix 4. In Table 9, features that were manipulated in the study are presented in the bold font. For instance, if a candidate was described by seven positive features and two negative features, the profile would consist of such features as *cares for citizens, ensuring security, competent, good public speaker, stable in beliefs, consistent, ambitious, greedy* and *disloyal*. If a candidate description had seven positive features and four negative features (i.e. additional two features), the candidate was characterized with the same features as previously, plus additional two features (***not keeping election promises*** and ***lacking culture***). If, however, the candidate was characterized by nine positive and four negative features, his profile would include in total thirteen features such as ***well-educated***, ***committed***, *cares for citizens, ensuring security, competent, good public speaker, stable in beliefs, consistent,*

ambitious, ***not keeping election promises***, ***lacking culture***, *greedy* and *disloyal* (additional features in bold).

Table 9: A profile for a candidate characterized by 9 positive features and 4 negative features.

Positive features	Negative features
well-educated	**not keeping election promises**
committed	**lacking culture**
cares for citizens	disloyal
ensuring security	greedy
competent	
good public speaker	
stable in beliefs	
consistent	
ambitious	

Note: In bold, marked features that were added to base candidate profiles

1.4. Features selected for candidate profiles

Features were selected based on the results of the preliminary study. Additionally, a pilot study was conducted to make sure that seven positive and seven negative features used to create candidate profiles did not differ in their affective loading on the aggregate level, that is that positive features were equally positive as negative features were negative. The same applied to two additional positive and negative features that were added to candidate descriptions.

In the pilot study, sixteen participants were presented with a list of 17 positive and 17 negative features describing political candidates. The features were organized alphabetically. Respondents were asked to evaluate the extent of the positivity or negativity of each feature. Respondents provided their answers on 21-point Likert scales, with -10 as *very negative* and + 10 *very positive* with 0 in the middle. All features analysed in the pilot study are presented

in Appendix 5, along with their descriptive statistics. In order to select features for candidate profiles used in Study 3, I chose features that were mutually exclusive and had similar affective loadings (when measured in absolute values). To make sure that basic seven positive features equalled basic seven negative features as well as that two additional favourable features equalled two additional unfavourable features, I ran two ANOVAs on the data from the pilot study. The results of conducted analyses showed that there were no differences between seven positive and seven negative features $F(1, 15) = 3.105$, $p = 0.098$, $\eta^2 = 0.172$ used to construct base profiles. Additionally, no differences between additional two positive and two negative features were found $F(1, 15) = 2.04$, $p = 0.173$, $\eta^2 = 0.120$. All features used to construct candidate profiles are presented in Appendix 6.

2. The effect of positive and negative features on candidate evaluation

2.1. Results

Table 10 presents evaluations of all candidates analysed in the study.

Table 10: The means for affective evaluation, similarity measures and voting intention of candidates analysed in the study.

No. of features	Affective evaluation		Similarity to an ideal politician		Similarity to a bad politician		Voting intention	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
9+ 2-	6.2	1.584	5.73	2.016	3.53	1.943	6.13	2.224
7+ 2-	5.72	2.153	5.55	2.063	4.03	2.163	5.86	2.356
9+ 4-	4.63	2.341	4.2	2.483	4.97	2.498	4.07	2.728
7+ 4-	4.48	2.204	3.90	2.119	5.00	2.236	3.94	2.065
4+ 7-	3.23	2.432	3.06	2.658	6.06	2.516	3.06	2.620
4+ 9-	2.87	1.978	2.17	1.733	6.93	2.273	2.30	1.968
2+ 7-	2.55	1.901	2.17	1.583	6.62	2.441	2.10	1.896
2+ 9-	2.47	1.961	2.03	2.042	7.53	2.255	1.83	1.967

To verify ***Hypothesis 1a*** and ***Hypothesis 1b,*** that is testing the effect of additional positive and negative features on candidate evaluation, a series of 2 × 4 between-subject ANOVAs were conducted separately for an increase in positive features and an increase in negative features. The number of features (Level 1 *vs* Level 2) was the first factor and image favourability (very unfavourable, unfavourable, favourable, very favourable) was the second factor analysed in the study.

Additional positive features

1 For affective evaluation, the analysis revealed the main effect of candidate favourability, $F(3, 232) = 32.646$, $p < .001$, $\eta^2 = 0.296$. The main effect of additional positive features, $F(1, 232) = 2.484$, $p = .116$, $\eta^2 = 0.010$, and the interaction effect were non-significant, $F(3, 232) = 0.163$, $p = .920$, $\eta^2 = 0.021$.

2 For similarity to an ideal politician, the analysis revealed the main effect of candidate favourability, $F(3, 232) = 33.275$, $p < .001$, $\eta^2 = 0.301$. The main effect of additional positive features, $F(1, 232) = 1.893$, $p = .170$, $\eta^2 = 0.008$, and the interaction effect were non-significant, $F(3, 232) = 0.406$, $p = .748$, $\eta^2 = 0.005$.

3 For similarity to a bad politician, the analysis revealed the main effect of candidate favourability, $F(3, 232) = 25.926$, $p < .001$, $\eta^2 = 0.251$. The main effect of additional positive features, $F(1, 232) = 2.028$, $p = .155$, $\eta^2 = 0.008$, and the interaction effect were non-significant, $F(3, 232) = 0.198$, $p = .897$, $\eta^2 = 0.002$.

4 For voting intention, the analysis revealed the main effect of candidate favourability, $F(3, 232) = 36.314$, $p < .001$, $\eta^2 = 0.319$. The main effect of additional positive features, $F(1, 232) = 2.481$, $p = .116$, $\eta^2 = 0.01$, and the interaction effect were non-significant, $F(3, 232) = 0.391$, $p = .759$, $\eta^2 = 0.005$.

Additional negative features:

1 For affective evaluation, the analysis revealed the main effect of candidate favourability, $F(3, 232) = 29.066$, $p < .001$, $\eta^2 = 0.273$, and the main effect of additional negative features, $F(1, 232) = 9.092$, $p = .002$, $\eta^2 = 0.037$. The interaction effect was non-significant, $F(3, 232) = 1.699$, $p = .167$, $\eta^2 = 0.021$.

2 For similarity to an ideal politician, the analysis revealed the main effect of candidate favourability, $F(3, 232) = 28.062$, $p < .001$, $\eta^2 = 0.267$, and the main effect of additional negative features, $F(1, 232) = 14.745$, $p < .001$, $\eta^2 = 0.06$. The interaction effect was non-significant, $F(3, 232) = 1.593$, $p = .191$, $\eta^2 = 0.02$.

3 For similarity to a bad politician, the analysis revealed the main effect of candidate favourability, $F(3, 232) = 22.561$, $p < .001$, $\eta^2 = 0.225$, and the main effect of additional negative features, $F(1, 232) = 12.40$, $p < .001$, $\eta^2 = 0.05$. The interaction effect was non-significant, $F(3, 232) = 0,195$, $p = .899$, $\eta^2 = 0.002$.

4 For voting intention, the analysis revealed the main effect of candidate favourability, $F(3, 232) = 29.219$, $p < .001$, $\eta^2 = 0.274$, and the main effect of additional negative features $F(1, 232) = 18.728$, $p < .001$, $\eta^2 = 0.074$. The interaction effect was non-significant, $F(3, 232) = 2.28$, $p = .08$, $\eta^2 = 0.028$.

In order to verify the predictions of ***Hypothesis 1a*** and ***Hypothesis 1b***, testing the effect additional positive and negative features on the evaluation of candidates with different ratios of common and distinctive features, I conducted a series of planned comparisons in which I compared specific candidate pairs as shown in Table 7. The results for all planned comparisons are presented in Appendix 7. Additionally, I calculated confidence intervals for effect sizes measured with Cohen's *d* (Lenhard & Lenhard, 2016). Effect sizes for the effect of additional positive and negative features for candidates that differ in terms of their image

favourability are presented in Table 11. None of the effect sizes for the effect of additional positive features turned out to be significant, showing that additional positive features did not increase candidate evaluation. Thus, the analysis of Cohen's *d* provided no evidence for ***Hypothesis 1a.*** For the effect of additional negative features, the analysis of Cohen's *d* showed significant and large effect sizes only for candidates whose image was favourable or very favourable (that is candidates who had seven or nine positive features and two or four negative features). Thus, the effect sizes supported the predictions of ***Hypothesis 1b.*** The only exception was the effect of additional negative features on similarity to a bad politician, where no difference between candidates 7+2- and 7+ 4- was found. The lack of the effect seems to be, however, an exception to a general rule which shows that additional negative features can hurt only candidates whose image is positive or very positive but will not do much harm to politicians whose image is already unfavourable.

Table 11: Effect sizes for the effect of additional positive and negative information items for each similarity level.

			Affective evaluation	Similarity to an ideal politician	Similarity to a bad politician	Voting intention
Added features	Image favourability	Number of features	d	d	d	d
Positive	very unfavourable	2+ 9- 4+ 9-	0.203	0.074	-0.265	0.239
	unfavourable	2+ 7- 4+ 7-	0.31	0.404	-0.226	0.418
	favourable	7+ 4- 9+ 4-	0.066	0.13	-0.013	0.054
	very favourable	7+ 2- 9+ 2-	0.255	0.088	-0.243	0.118

Negative	very unfavourable	2+ 7- 2+ 9-	-0.041	-0.076	0.388	-0.14
	unfavourable	4+ 7- 4+ 9-	-0.162	-0.394	0.362	-0.326
	favourable	7+ 2- 7+ 4-	-0.569*	-0.789*	0.441	-0.866*
	very favourable	9+ 2- 9+ 4-	0.788*	-0.678 *	0.645*	-0.829*

Note: * marks confidence intervals significant at 95% level.

2.2. Discussion

The current study tested the differential effect of additional positive and negative features on candidate evaluation depending on the ratio of favourable and unfavourable characteristics used to describe a candidate. The effect of two additional negative features was tested by comparisons of two candidates that had the same number of positive features but differed in the number of negative characteristics. The same rule applied to two additional positive features. The effect of additional information was tested for candidates whose image was either favourable or unfavourable as determined by the ratio of positive and negative features. The findings of the current study showed a few interesting effects.

First, the results showed that additional negative information decreased candidate evaluation only in situations in which two additional features were added to candidate profiles that were generally favourable, that is if a candidate was characterized by seven or nine positive features and two or four negative features. A parallel effect was not observed for candidate profiles that were generally unfavourable. The effect can be explained with the ratio-difference principle (Quattrone & Tversky, 1988) which predicts a better discernment for changes among fewer features than changes happening among many features.

The ratio difference principle is one psychophysical laws (Gescheider, 1997; Kahneman & Tversky, 1979; Stevens, 1957) that explain why an increase by the same *x* value

is perceived differently, depending the initial value or intensity of a stimulus. The ratio difference principle – also known as the principle of diminishing sensitivity (Tversky & Kahneman, 1992) – is also one of important characteristics of the value function in prospect theory (Kahneman & Tversky, 1979). The famous S-shaped function – concave for gains and convex for losses – flattens at its ends, so that each unit increase has a diminishing value and as a result with each unit, a change in the objective value decreases.

The same principle can be found in the effect of additional negative features on the perception of favourable and unfavourable candidates. An increase from two to four negative features characterizing a favourable candidate produces a ratio of change equal 2, whereas the same two negative features added to the portfolio of a bad politician (i.e. a change from seven to nine negative features) lead "only" to a ratio of change equal 1.3. The effect can be also visible in the effect sizes of perceived changes, so that an increase in negative features in a smaller set led to significant differences and medium to large effect sizes (Cohen, 1988), while the addition of the same negative features to a larger set did not produce significant differences and resulted in very small effect sizes according to Cohen's (1988) recommendations. Importantly, a similar difference between changes within the smaller and the bigger set was not observed for additional positive features.

The findings point to two instances of positive-negative asymmetry observed in the study. First, depending on the ratio of positive and negative features characterising a candidate, favourable and unfavourable information has a differential effect – negative features are more prominent for candidates whose overall evaluation is rather positive, whereas positive features are stronger for candidates who are perceived rather unfavourably. The effect follows the predictions of the contrast model of similarity and the ratio difference

principle as well as is in line with the expectancy-contrast theories and the inclusion/ exclusion model, all of which forecast a figural or less common element to stand out.

Such an assumption is corroborated by the findings of another study (conceptually and methodologically similar to Study 4) which tested the effect of additional positive and negative features characterizing a city (Falkowski, Sidoruk-Błach, Olszewska, & Jabłońska, 2020). Following the predictions of the contrast model of similarity, the experiment showed that additional positive information increased the evaluation of an unattractive fictitious city but not a city which was generally perceived favourably. A parallel effect was found for the effect of additional negative features which decreased the evaluation of an attractive city but did not affect the evaluation of a non-attractive one. Thus, the findings gave full evidence to the ratio difference principle, showing that operations on smaller sets led to significant effects, whereas operations within larger sets did not produce meaningful changes, regardless of the valence of features added.

The lack of the effect of additional positive features on the evaluation of political candidates is a second example of positive-negative asymmetry observed in the study. The finding may be attributed to the lower diagnosticity of favourable features. Although comparable in their strength to negative features, a few positive features might not be potent enough to increase preference for a "bad" politician, whereas equally strong negative characteristics were strong enough to damage the image of a generally "good" politician. If so, such an effect would follow the predictions of **Hypothesis *4*** which foresees better differentiation between positive options than the negative ones. Furthermore, the effect can be reconciled with density hypothesis (Koch et al., 2016b; Unkelbach et al., 2008) which predicts a greater internal similarity of positive information. If so, two additional positive features (being more similar) provided less positive evidence that would provoke people to

change their appraisal of an unfavourable candidate compared to more differentiated two negative features that carried enough information to decrease the evaluation of a favourable candidate.

Finally, the fact that there was no effect of additional positive features on the evaluation of an unfavourable candidate, whereas such an effect was found in the previously mentioned study on city evaluation may be also explained with differences in the features that were used in the studies. Possibly additional information about cities were stronger than information about politicians. Alternatively, the effect can be also attributed to the differences in the objects that were analysed in both experiments. For instance, people may differently approach and evaluate people and places. Therefore, future studies should test the theoretical assumptions of the contrast model of similarity and the ratio difference principle on various social and non-social stimuli.

3. The comparison of the predicted and observed similarity measures

3.1. Results

Next, I wanted to compare the theoretical similarity to an ideal and bad politician predicted by the ratio model of similarity (Equation 2) with the similarity observed in empirical studies. In order to do that, I divided the empirical measures of similarity by 10, so that both the theoretical and observed similarity would lie between 0 and 1. Figure 4 presents the theoretical and observed similarities to an ideal and bad politician for different candidate profiles, whereas the values for all similarity measures are provided in Table 12.

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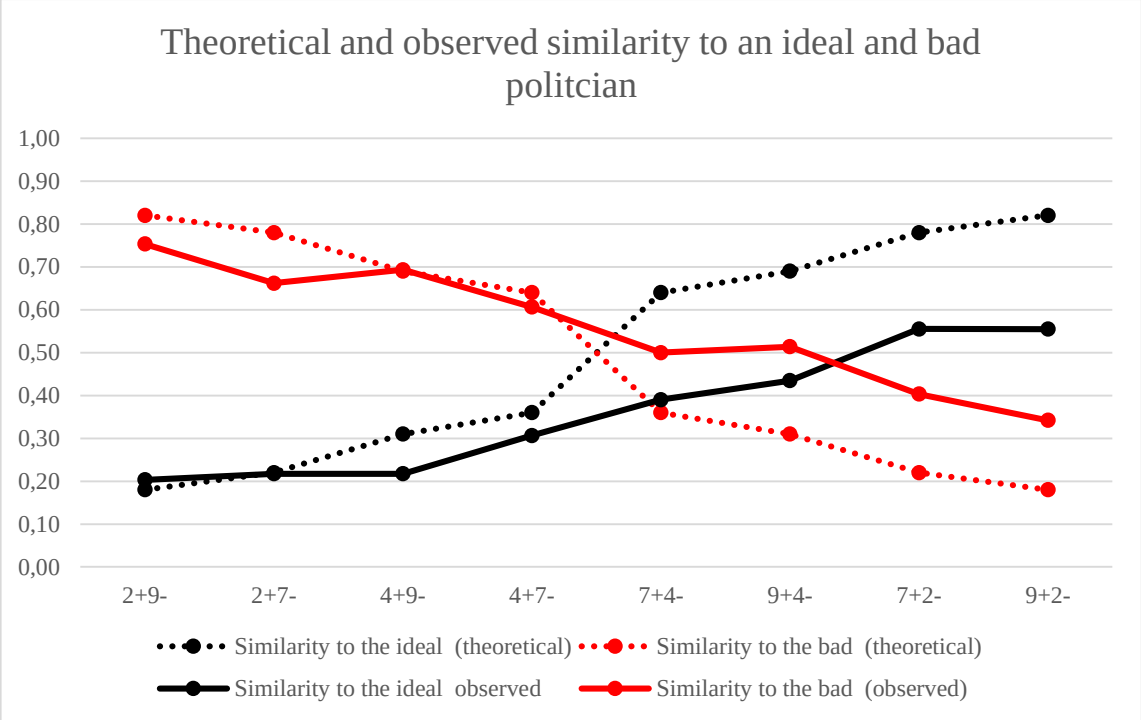

Figure 4:Theoretical and observed similarity to an ideal and bad politician for candidate profiles which differ in the number of positive and negative features that characterize them. The dotted lines represent the theoretical predictions, whereas the solid lines represent the empirical findings. The black lines show similarity to an ideal politician and the red lines similarity to a bad politician.

In order to test how well the theoretical predictions correspond to the observed similarity measures, I ran a series of single sample t tests in which I compared the theoretical values to the empirical ones, separately for each candidate profile and for similarity to an ideal and bad politician. Table 12 presents the theoretical and observed values for similarity to an ideal and bad politician for all candidate profiles.

Table 12. The theoretical similarity to an ideal and bad politician predicted by the contrast model of similarity and the observed similarity based on the empirical results.

	Theoretical		Observed	
Candidate profile	Similarity to an ideal politician	Similarity to a bad politician	Similarity to an ideal politician	Similarity to a bad politician
2+9-	0,180	0,820	0,203	0,753
2+7-	0,220	0,780	0,217	0,662
4+9-	0,310	0,690	0,217	0,693
4+7-	0,360	0,640	0,306	0,606
7+4-	0,640	0,360	0,390	0,500
9+4-	0,690	0,310	0,434	0,514
7+2-	0,780	0,220	0,555	0,403
9+2-	0,820	0,180	0,555	0,342

The results of the analyses showed that the observed similarities did not differ significantly from the predicted values for negative candidate profiles (2+9-, 2+7-, 4+9- and 4+7) but they diverged significantly from the predictions for positive candidate profiles (7+4- , 9+4-, 7+2- and 9+2-) . Below the results of the analyses:

Candidate 2+9-: similarity to an ideal politician: $t(29) = 0.636$, $p = .536$,

similarity to a bad politician: $t(29) = 1.619$, $p = .116$

Candidate 2+7-: similarity to an ideal politician, $t(28) = 0.094$, $p = .926$,

similarity to a bad politician, $t(28) = 2.602$, $p = .015$

Candidate 4+9-: similarity to an ideal politician, $t(29) = 3.132$, $p = .004$,

similarity to a bad politician, $t(29) = 0.08$, $p = .937$

Candidate 4+7-: similarity to an ideal politician, $t(30) = 1.122$, $p = .271$,

similarity to a bad politician, $t(30) = 0.742$, $p = .464$

Candidate 7+4-: similarity to an ideal politician, $t(29) = 6.560$, $p < .001$,
similarity to a bad politician, $t(29) = 3.468$, $p = .002$

Candidate 9+4-: similarity to an ideal politician, $t(28) = 5.746$, $p < .001$,
similarity to a bad politician, $t(28) = 4.658$, $p < .001$

Candidate 7+2-: similarity to an ideal politician, $t(28) = 5.869$, $p < .001$
similarity to a bad politician, $t(28) = 4.568$, $p < .001$

Candidate 9+2-: similarity to an ideal politician, $t(30) = 6.610$, $p < .001$
similarity to a bad politician, $t(30) = 4.479$, $p < .001$

3.2. Discussion

The comparison of the predicted and observed similarity values point to a few interesting effects. First, as visible on Figure 4, the observed values for negative candidates (2+9-, 2+7-, 4+9- and 4+7-) were more extreme, with the worst possible candidate (2+9-) scoring very high on similarity to a bad politician and ($S = 0.753$) and very low on similarity to an ideal politician ($S = 0.203$). The empirical findings for positive candidates (7+4-, 9+4-, 7+2- and 9+2-) were less dispersed and oscillated around the values of 0.4 and 0.6. For instance, the best possible candidate in the set (9+2-) scored $S = 0.555$ on similarity to an ideal politician and $S = 0.342$ on similarity to a bad politician. Such a result suggests that even in the case of a candidate who is characterized by nine positive features and only two negative features there is still much room for improvement.

Furthermore, the results of the study showed that the theoretical predictions of the contrast model correspond well to the empirical findings for negative candidates but not for positive candidates. For instance, for the worst candidate in the set (2+9-), the difference between the predicted and the observed similarity was equal to Δ 0.02 for similarity to an ideal politician and Δ 0.07 for similarity to a bad politician, whereas for the best possible

candidate in the set (9+2-), the difference was much greater and it equaled Δ 0.27 for similarity to an ideal politician and Δ 0.16 for similarity to a bad politician. A similar pattern of results was also observed for other candidate profiles and it was present for two similarity measures (similarity to an ideal and bad politician), suggesting that the effect is not dependent on the valence of the frame of reference. Overall, the findings indicated that the empirical values for similarity measures follow the predictions of the contrast model of similarity for unfavourable candidates but not for favourable ones. The fact that the observed values were typically lower for similarity to an ideal politician and higher for similarity to a bad politician than it would follow from the predicted values of the contrast model of similarity may be interpreted as evidence for negativity effect. In other words, the favourable candidates were evaluated less positively than it could be predicted based on the theoretical calculations.

4. The effect of the number of positive and negative features on affective evaluation and voting intention

4.1. Results

In order to test ***Hypothesis 2*** which predicted that negative features will have a greater effect on candidate evaluation than comparable in strength positive features, I ran two regression analyses with the number of positive features and the number of negative features as predictor variables and affective evaluation and voting intention as dependent variables. The analyses were conducted on the data from the all sample (i.e. favourable and unfavourable candidates together). Both models turned out to be significant, for affective evaluation, $F(2, 237) = 46.273$, $p < .001$, $R^2 = .275$, and for voting intention, $F(2, 237) = 48.853$, $p < .001$, $R^2 = .286$. The analyses showed that the liking of the candidate is more related to the number of negative features ($\beta_{negative} = -.357$, $p = .001$) and less to the number

of positive features ($\beta_{positive}$= .190, p = .085). Similar findings were found for voting intention ($\beta_{negative}$ = -.456, p < .001; $\beta_{positive}$ = .095, p = .385 respectively).

Having established that generally negative features have a more prominent effect on the perception of political candidates than positive characteristics, I wanted to investigate whether this effect is moderated by image favourability. Thus, once again I conducted regression analyses with the number of positive and negative features as predictor variables and affective evaluation or voting intention as a dependent variable. This time, however, the analyses were conducted separately for favourable (7+2-, 7+4-, 9+2-, 9+4-) and unfavourable (2+7-, 4+7-, 2+9-, 4+9-) candidates. Furthermore, stepwise regressions were used, so that in the first step the number of positive features was introduced, and in the second, the number of negative features was added as the predictor.

For favourable candidates, the first model with affective evaluation as the dependent variable and positive features as the predictor was non-significant, , F(1, 118) = .694, p =.407, R^2 = .006, $\beta_{positive}$ = .076, p = n.s. The model including two predictors was significant, F(2, 117) = 5.398, p =.006, R^2 = .069, showing only negative features to be a significant predictor of candidate liking ($\beta_{negative}$ = -.281, p = .002, $\beta_{positive}$ = -.067, p = .450). The same pattern of results applied to voting intention, with a non-significant first model, F(1, 118) = .253, p =.616, R^2 = .002, $\beta_{positive}$ = .046, p = n.s. and a significant model including two predictors, F(2, 117) = 8.896, p <.001, R^2 = .006, with only negative features related to the intention to vote for a candidate ($\beta_{negative}$ = -.362, p < .001, $\beta_{positive}$ = -.034, p = .692).

For unfavourable candidates, neither the first, F(1, 118) = 2.046, p = .155, R^2 = .017, nor the second model including two predictors, F(2, 117) = 1.193, p = .307, R^2 = .003 was significant for affective evaluation as the dependent variable (with $\beta_{positive}$ = .131, p =.155 in the first model, and $\beta_{negative}$ = -.054, p =.555 and $\beta_{positive}$ = .130, p =.159 in the second model).

For voting intention as the dependent variable, although neither model reached required significance, their significance was below 0.09, suggesting a marginal effect of positive features on the willingness to vote for the candidate, for the model with positive features as the only predictor, $F(1, 118) = 3.414$, $p = .067$, $R^2 = .028$, and for the model including two predictors, $F(2, 117) = 2.614$, $p = .078$, $R^2 = .026$. Interestingly, for unfavourable candidates, negative features did not predict voting intention ($\beta_{negative} = -.121$, $p = .183$), whereas positive features had a marginal effect ($\beta_{positive} = .168$, $p = .067$ in the first model and $\beta_{positive} = .166$, $p = .070$ in the second model).

4.2. Discussion

The results of regression analyses provided evidence for a stronger effect of negative features on overall candidate perception as measured with affective evaluation and voting intention. First, the analyses conducted on the whole sample showed that the more negative attributes characterized the candidate, the lower was his liking and the intention to vote for him. The parallel effect, however, was not observed for positive features, so that there was no connection between the number of positive attributes in candidate description and the liking for the candidate or the intention to vote for him. The analyses conducted only for favourable candidates generally replicated the earlier findings, showing a negative relationship between the number of negative features and affective evaluation and voting intention and no effect of positive features. The analyses conducted for favourable candidates, however, showed a reverse effect, so that negative features were not related to overall candidate evaluation, whereas positive features had a marginally significant positive effect on affective evaluation and voting intention.

The results of conducted analyses are in line with the plethora of findings on negativity effect, which generally show that negative information has a greater effect

compared to the effect of positive information (for review Baumeister et al., 2001). The findings of regression models add to this discussion, showing that in fact overall object perception does not depend so much on the extent of object favourability but is far more driven by its negative characteristics. The only situation when positive features gain on importance is when they are added to the profiles of generally unfavourable objects.

5. The mediating role of affective evaluation in the relationship between similarity judgements and voting intention

5.1. Results

To verify ***Hypothesis 7*** testing the mediating role of affective evaluation in the relationship between similarity judgements and voting intention, a series of mediation analyses using Process software (Hayes, 2013) were conducted. The bias corrected bootstrap CI method (n = 1000 bootstrap resamples, 95% CI) was used in order to obtain optimal tests of the indirect effect. The effect size was evaluated based on indirect effect measure (Hayes, 2009). Test statistics z were used to compare mediation coefficients (Lenhard & Lenhard, 2014).

Four models were created. Candidate profiles with the majority of favourable features (seven or nine positive features and two or four negative features) were analysed together as one group, whereas candidate profiles with the majority of unfavourable characteristics (two or four positive features and seven or nine negative features) were analysed in the second group. The grouping of candidate profiles in such a way would enable me to investigate if candidate image favourability affected the analysed mediation in any way.

For each group, two models were tested. In the first model, the mediating role of affective evaluation in the relationship between similarity to an ideal politician and voting intention was tested. In the second model, the mediating role of affective evaluation in the

relationship between similarity to a bad politician and voting intention was measured. Table 13 shows means and correlations among all variables for favourable (a) and unfavourable (b) candidate profiles.

Table 13. Means and bivariate correlations for similarity to the ideal candidate, bad candidate, affective evaluation and voting intention for a) favourable candidate profiles; b) unfavourable candidate profiles

a)	Similarity to a bad politician	Similarity to a bad politician	Affective evaluation	Voting intention
M	4.833	4.392	5.250	4.983
SD	2.298	2.280	2.190	2.534
Similarity to an ideal politician		-.629**	.862**	.819**
Similarity to a bad politician			-.602**	-.645**
Affective evaluation				.847**

b)	Similarity to an ideal politician	Similarity to a bad politician	Affective evaluation	Voting intention
M	2.37	6.78	2.78	2.33
SD	2.074	2.405	2.079	2.163
Similarity to an ideal politician		-.539**	.821**	. 759**
Similarity to a bad politician			-.554**	-.524**
Affective evaluation				.747**

Note: ** $p < .01$.

For favourable candidate profiles, the analyses revealed a significant indirect effect of similarity to an ideal politician on voting intention via affective evaluation ($a \times b = .523$; *BootLLCI* = .322; *BootULCI* = .706). The indirect effect of similarity to a bad politician was

also significant ($a \times b$ = .-482; *BootLLCI* = -.616; *BootULCI* = -.334). Although the latter effect was slightly weaker, the difference was not statistically significant (z = 0.42, p = 0.337), thus providing no evidence for ***Hypothesis 7.*** Figure 5 shows the partial mediation influence of both similarity judgements for favourable candidate profiles.

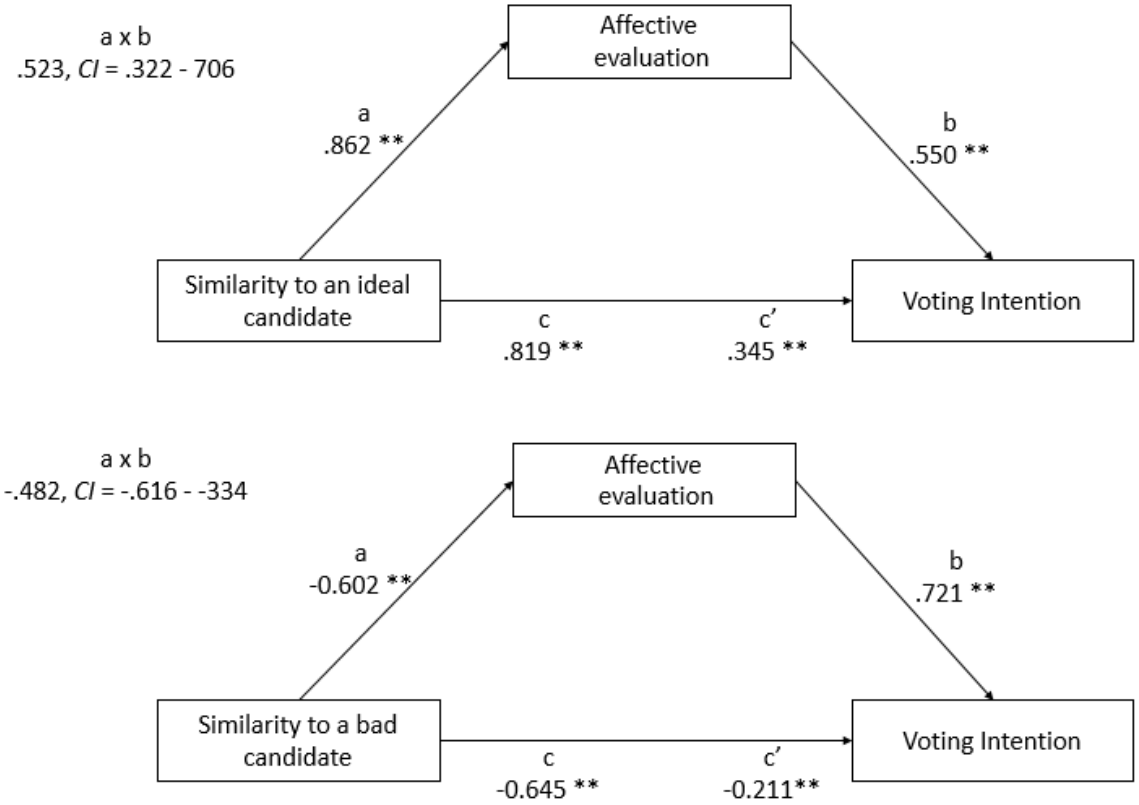

Figure 5. Model depicting mediating effects of similarity judgements via affective evaluation on voting intention for positive candidate profiles.

For unfavourable candidate profiles, the analyses revealed a significant indirect effect of similarity to an ideal politician on voting intention via affective evaluation ($a \times b$ = .331; *BootLLCI* = .095; *BootULCI* = .629). The indirect effect of similarity to a bad politician was also significant ($a \times b$ = .-152; *BootLLCI* = -.238; *BootULCI* = -.085). The comparison of two indirect effects shows that the latter is weaker, with a near-significant trend (z = 1.459, p = 0.072), providing some evidence for ***Hypothesis 7***. Figure 6 shows the partial mediation influence of both similarity judgements for negative candidate profiles.

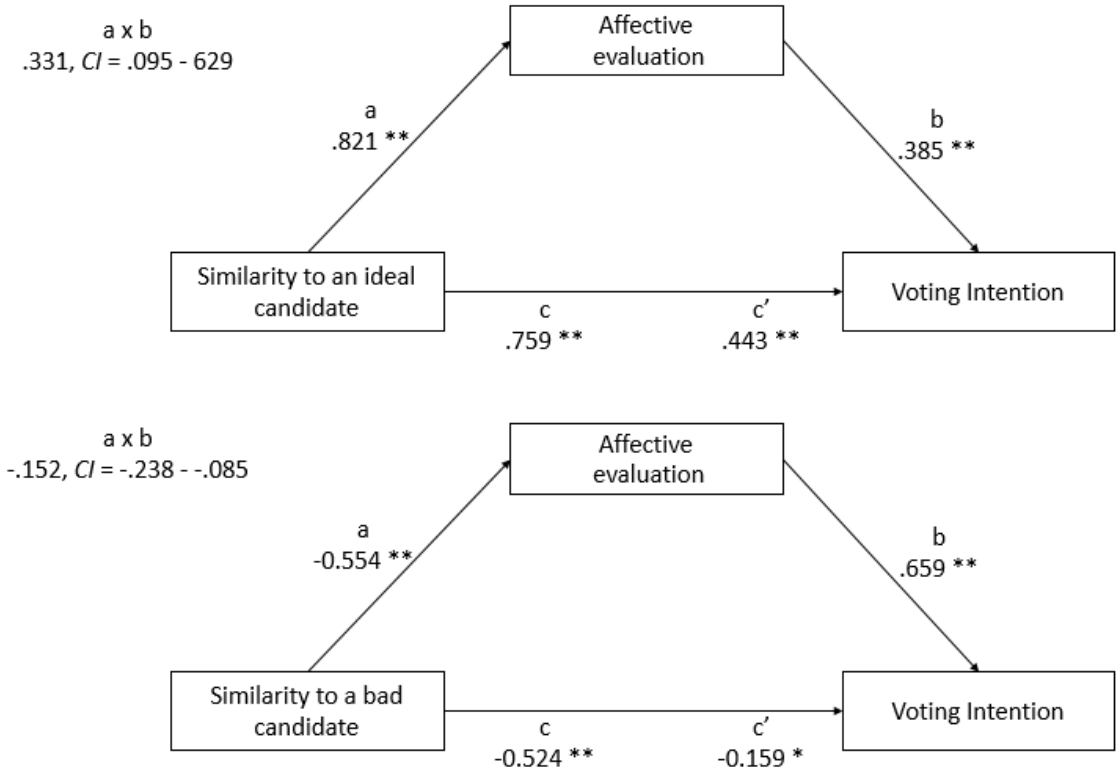

Figure 6. Model depicting mediating effects of similarity judgements via affective evaluation on voting intention for negative candidate profiles.

5.2. Discussion

The conducted mediating analyses revealed a few interesting effects. First, the results provided evidence for the hypothesis predicting a mediating role of affective evaluation in the relationship between similarity judgements and voting intention. In all of the tested models, affective evaluation was a partial mediator of the relationship. Additionally, as hypothesized, the mediating effect turned out to be stronger for the positive frame of reference, that is for a situation in which a candidate was compared to an ideal politician (rather than the image of a bad politician). Importantly, however, this stronger effect was statistically significant (at a near-significant trend) only for unfavourable candidate profiles.

The slightly stronger role of affective evaluation in the positive frame of reference may be explained with the differences in the cognitive processing of positive and negative

categories. First, positive categories have been found to be "default" options, more often used than their negative counterparts in such areas as linguistic studies (Rozin et al., 2010), impression formation (Willis & Todorov, 2006) and everyday life (Hoorens, 2014). Thus, the positive category may be regarded as a form of a shortcut, most conveniently adopted by people. Such a conclusion may be also drawn from the analysis of the sufficient and necessary conditions for the occurrence of an event (Lewicka, 1993). In simple terms, a necessary condition is one which must be present in order for the event to occur but it does not guarantee the event, while a sufficient condition is a condition that will produce the event. Discussing different strategies for avoiding potential negative events, Lewicka (1993) claims that often it is more efficient to know what is not negative (a sufficient condition for non-negativity) than to carefully analyse if an event is potentially positive or negative (a necessary condition for negativity). If so, it may be regarded as a further evidence for the positive category to be a default option for decision-making. Furthermore, as voters (and people in general) operate typically in a "cognitive miser" mode (Stroh, 1995; Taylor, 1981), they are also motivated to use decision-making strategies that allow them to come to the best solutions at minimal effort. The reliance on affect heuristic is one of such strategies (Slovic et al., 2007; Slovic, Finucane, Peters, & MacGregor, 2002; Zajonc, 1980), and it is a likely reason for a higher role of affective evaluation in voting intentions observed in the present study. The assumption is further corroborated by the research on valence framing, where negative framing has been associated with greater depth of processing (Bizer et al., 2013). More precisely, valence framing effects were typically found only in situations when respondents were motivated to process information or when their cognitive resources were not depleted. In such a state, people were found to be less inclined to use affective cues (Verhulst & Lizotte, 2011).

A similar pattern of the results was found in the present study, so that candidate liking had a stronger effect on voting intention in situations where participants used the positive frame of reference and weaker if the negative category was activated (i.e. a difference between $a \times b$ = .523 and $a \times b$= -.482 for favourable candidate profiles as well as $a \times b$ = .331 and $a \times b$= -.152 for unfavourable profiles). As demonstrated in the sizes of indirect effects, the mediation was greater for favourable than unfavourable candidate profiles, once again showing that the liking of a candidate may increase the intention to vote for a generally favourable candidate but is less likely to encourage people to vote if they perceive the candidate as unfit for the post.

Study 4

One of the aims of Study 3 was to test the effect of additional positive and negative features on candidate evaluation depending on whether candidate image was generally favourable or unfavourable. Eight candidate profiles that differed in the number of positive and negative features were created and respondents were asked to evaluate two randomly selected candidates.

It was predicted that additional positive features would change the perception of a candidate who was described by more negative than positive features, whereas negative features would decrease the perception of a candidate who had in his description more positive features than negative. No effect of additional negative features was anticipated for unfavourable candidate images and no effect of additional positive features was predicted for favourable candidates. The results of the study partially confirmed these predictions, showing that two additional negative features deteriorated the perception of positive candidates but did not change the perception of unfavourable candidates. Contrary to expectations, no effect of positive features was found for candidates who were generally perceived as "bad".

The aim of the present study (Study 4) was to replicate these findings, using a slightly different design. In order to have more control over the data and reduce within-groups variability, I decided to ask one group of participants to evaluate the same candidate twice – the first time the initial description and the second time the same description with two positive or negative features added. Second, in order to investigate how much of a difference people saw between the first and the second candidate profile, I decided to use a more direct measure of candidate similarity (i.e. a question *In your opinion, has the image of a candidate deteriorated, improved or has not changed?*). Third, as the additional positive features used in Study 3 pertained more to competence domain (well-educated, committed*)* and the negative

one to morality domain (not keeping election promises and lacking culture), I wanted to exclude a potential confounding effect of feature dimension (competence/ morality). Therefore, I designed a study in which two additional features pertained either to competence or morality domain. Based on the research on the asymmetrical effect of competence- and morality-related traits (see section 1.3. for discussion) I expected negative morality-related features to have a greater influence on candidate evaluation (compared to negative competence-related features) as well as positive competence-related features to increase candidate evaluation to a greater extent than positive morality-features. Thus, in the study the following hypotheses were tested:

> ***Hypothesis 2a***: Negative features added to the description of a favourable candidate will reduce candidate evaluation to a greater extent than positive features added to the description of an unfavourable candidate will increase it.
>
> ***Hypothesis 2b***: Negative morality-related features will lower candidate evaluation to a greater extent than positive competence related features will increase it.
>
> ***Hypothesis 4:*** The differentiation between a good and better candidate will be greater than the differentiation between a bad and a worse candidate.

1. Method

1.1.Participants

One hundred twenty nine participants, aged 18 – 38 (M = 21.40, SD = 3.2) took part in the experiment. The sample (72% female) was recruited from university students. On average, participants were moderately interested in politics (M = 4.53, SD = 2.574, on a 11-

point scale) and were neither slightly left-wing oriented (M = 3.90, SD = 1.874, on a 11-point Likert scale, with 0 –*extremely left-wing oriented* and 10 *extremely right-wing oriented*).

1.2.Procedure and materials

In the instructions the participants were informed that their task was to read a description of a fictitious political candidate and answer some questions about him. There were two such descriptions and each participant saw only one description assigned at random. In each description a politician was characterized by some positive and some negative traits. In the first description there were seven positive and two negative traits so I will refer to this description as Candidate 7+2-. It read like this:

> *The politician is stable in his beliefs, consistent and ambitious. He cares for the citizens and country security. He was criticized for being greedy and quarrelsome. His supporters praise him for his openness and the fact that he is a good speaker.*

In the second description, the politician was described with two positive and seven negative features, so I will refer to this description as Candidate 2+7-. It read like this:

> *The politician is despotic, lazy and greedy. He is quarrelsome and lacks culture. Still, his supporters praise him that he cares for the citizens and country security. The opponents mention that he is populistic and nepotistic.*

After reading the above descriptions the participants answered the following four questions: *On the scale from 0 to 10, how much do you like this political candidate?* (with 0 *strongly dislike* and 10 *strongly like;* DV affective evaluation), *How similar is the candidate to an ideal politician?, How similar is the candidate to a bad politician?* (with 0 *very*

dissimilar and 10 *very similar;* DV similarity measures), *If the candidate would run for office, would you vote for him?* (with 0 *definitely not* and 10 *definitely yes;* DV voting intention).

On the next page, participants were presented with the new information.

During the political campaign, it turned out that it is not everything that we know about the candidate. Many people point attention to the fact that politician is [first feature] and [second feature]. Please read again the candidate profile and evaluate the candidate once more.

The new features describing a candidate could be either positive or negative and they could relate either to the candidate's morality or competence. On the basis of a pilot study, I chose the following features: a) positive referring to competence: *competent* and *well-educated*; b) positive referring to morality: *just* and *always keeping promises*; c) negative referring to competence: *incompetent* and *uneducated*; d) negative referring to morality: *disloyal* and *corrupted*. The preliminary analyses revealed no differences (when measured in absolute values) between positive and negative morality traits between two positive and two negative competence traits as well as four morality and four competence related features. The means for all features used to construct candidate profiles are presented in Appendix 8. Importantly, positive features were added only the description of Candidate 2+ 7- and negative features were added only to the description of Candidate 7+ 2-.

Having evaluated the candidate again (with regard to the same questions as in the initial description), participants were then shown a table consisting of features used in the first and second description (with two additional features in bold). At this stage, participants were asked to compare both profiles and decide whether the image of the candidate has deteriorated, improved or has not changed. The participants marked their opinion on a scale,

from -10 *deteriorated a lot*, to +10 *improved a lot*. Additionally, value 0 was described *as neither deteriorated, nor improved*.

2. Results

The Table 14 below presents means for the first evaluation of candidates 2+7- and 7-2+ as well as the evaluation of the same candidates with two additional features added to their profiles (*2 evaluation*). The results are split into competence- and morality-related features. The results for the candidate whose image was unfavourable are shown in upper rows. The lower rows present evaluations of a candidate whose image was rather favourable.

Table 14: Means for the evaluation of candidate descriptions analysed in Study 4. Numbers followed by „+" refer to a number positive features used in the candidate description while numbers followed by "-" refer to a number of negative features.

		Competence features added				Morality features added			
		2+7- (1 evaluation)		4+7- (2 evaluation)		2+7- (1evaluation)		4+7- (2 evaluation)	
		M	SD	M	SD	M	SD	M	SD
Positive features added	Affective evaluation	1.90	1.539	2.93	1.799	2.53	2.107	3.76	2.133
	Similarity to an ideal politician	1.70	1.489	2.77	1.906	2.00	1.633	3.47	2.232
	Similarity to a bad politician	7.83	1.724	6.60	2.143	7.35	1.612	5.71	2.209
	Voting intention	1.27	1.337	2.50	1.978	2.06	1.969	3.12	2.240
		7+2- (1 evaluation)		7+4- (2 evaluation)		7+2- (1 evaluation)		7+4- (2 evaluation)	
		M	SD	M	SD	M	SD	M	SD
Negative features added	Affective evaluation	5.69	2.235	4.13	2.091	5.78	1.827	2.97	1.713
	Similarity to an ideal politician	5.41	1.982	3.50	2.125	5.34	1.977	2.91	1.957
	Similarity to a bad politician	4.06	2.228	5.38	2.550	4.19	2.162	6.63	2.012
	Voting intention	4.81	2.442	3.34	2.280	5.25	2.064	2.81	1.958

Furthermore, the means for similarity to an ideal and bad politician of all candidate profiles are presented Figure 7. The figure presents the combined results for competence and morality features.

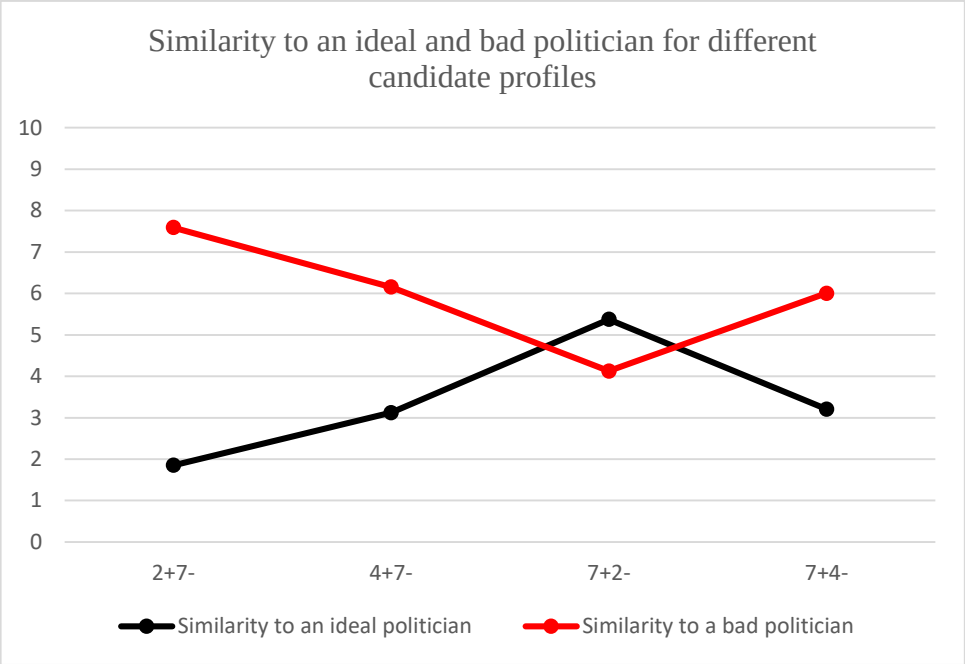

Figure 7: Means for similarity to an ideal and bad politician for different candidate profiles (the combined results for additional competence and morality related features). Numbers followed by „+" refer to a number positive features used in the candidate description while numbers followed by "-" refer to a number of negative features.

In order to test the predicted effects a 2 x 2 x (2) mixed design ANOVA was conducted, with dimension (competence/ morality) as the first between factor and the compared pair (more favourable *vs* more unfavourable candidate in the pair) as the second between factor. The effect of additional features (positive for negative candidate profiles and negative for positive candidate profiles) was a within factor.

The main effect of additional features was significant for all variables apart from the similarity to a bad politician: for affective evaluation $F(1, 125) = 8.015$, $p = .005$, $\eta^2 = .060$,

for similarity to an ideal politician $F(1, 124) = 8.664$, $p = .004$, $\eta^2 = .065$, for voting intention $F(1, 125) = 5.172$, $p = .025$, $\eta^2 = .040$, for similarity to a bad politician $F(1, 125) = 1.803$, $p = .182$, $\eta^2 = .014$. Overall, additional features resulted in a slightly lower affective evaluation, lower similarity to an ideal politician and lower voting intention compared to the initial evaluation. There was no difference in similarity to a bad politician between compared pairs. The descriptive statistics are presented in Table 15 which summarizes the means and standard deviations for all analysed main effects.

The main effect of competence/ morality dimension was non-significant for all analysed variables: for affective evaluation $F(1, 125) = 0.117$, $p = .733$, $\eta^2 = .001$, for similarity to an ideal politician $F(1, 124) = 0.081$, $p = .776$, $\eta^2 = .001$, for similarity to a bad politician $F(1, 125) = 0.078$, $p = .781$, $\eta^2 = .001$, for voting intention $F(1, 125) = 1.169$, $p = .282$, $\eta^2 = .009$, showing no differences between competence-related and morality-related traits in the effect on all analysed variables. The descriptive statistics are again presented in Table 15.

The main effect of candidate pair was also significant for all analysed variables, showing that over all the evaluation of candidates who had more positive features (i.e. descriptions 7+2- and 7+4- together) was more favourable than the evaluation of candidates with more negative features (i.e. descriptions 2+7- and 4+7- together); for affective evaluation $F(1, 125) = 41.777$, $p < 0.01$, $\eta^2 = .250$, for similarity to an ideal politician $F(1, 124) = 34.988$, $p < .001$, $\eta^2 = .220$, for similarity to a bad politician $F(1, 125) = 26.984$, $p < .001$, $\eta^2 = .178$, for voting intention $F(1, 125) = 33.341$, $p < .001$, $\eta^2 = .211$. The means for main effects are presented in Table 15.

Table 15: Means and standard deviations for main effects analysed in the study.

Means and standard deviations for main effects				
Main effect of additional positive features				
	Initial evaluation		Second evaluation (2 features added)	
	M	SD	M	SD
Affective evaluation	3.97	2.616	3.46	1.984
Similarity to an ideal politician	3.62	2.498	3.17	2.039
Similarity to a bad politician	5.81	2.637	6.04	2.286
Voting intention	3.33	2.620	2.95	2.115
Main effect of competence/ morality dimension				
	Competence		Morality	
	M	SD	M	SD
Affective evaluation	3.54	2.015	3.38	1.967
Similarity to an ideal politician	3.15	2.039	3.20	2.107
Similarity to a bad politician	5.92	2.432	6.15	2.150
Voting intention	2.92	2.150	2.97	2.097
Main effect of candidate pair				
	2+7- and 4+7-		7+2- and 7+4-	
	M	SD	M	SD
Affective evaluation	2.80	1.998	4.63	2.287
Similarity to an ideal politician	2.50	1.937	4.29	2.285
Similarity to a bad politician	6.77	2.168	5.09	2.453
Voting intention	2.24	2.003	4.06	2.401

The focus of this study was not on a general effect of adding new features but on the interaction between the sign of those features and whether an initial description was positive or negative. Therefore, the real test of ***Hypothesis 2a*** is the test of interaction of pair × additional features factors. For affective evaluation, the effect was significant, $F(1, 125) = 79.627$, $p < 0.01$, $\eta^2 = .389$. The analysis of simple effects showed that additional positive features increased affective evaluation, $F(1, 125) = 18.683$, $p < 0.001$, $\eta^2 = .130$, and additional negative features decreased it, $F(1, 125) = 68.625$, $p < 0.001$, $\eta^2 = .354$ compared to the initial evaluation. A similar effect was observed for similarity to an ideal politician,

with a significant interaction effect $F(1, 124) = 125.700$, $p < 0.01$, $\eta^2 = .503$, and significant effects of additional positive $F(1, 124) = 34.115$, $p < 0.001$, $\eta^2 = .216$ and negative features $F(1, 124) = 100.379$, $p < 0.001$, $\eta^2 = .447$. The effect was also significant for similarity to a bad politician, $F(1, 125) = 75.106$, $p < 0.01$, $\eta^2 = .375$, with significant effects of additional positive $F(1, 125) = 26.998$, $p < 0.001$, $\eta^2 = .178$ and negative features $F(1, 125) = 49.759$, $p < 0.001$, $\eta^2 = .285$. Finally, similar results were observed for voting intention, with a significant interaction effect $F(1, 125) = 79.295$, $p < 0.01$, $\eta^2 = .388$, with significant effects of additional positive $F(1, 125) = 22.130$, $p < 0.001$, $\eta^2 = .150$ and negative features $F(1, 125) = 62.070$, $p < 0.001$, $\eta^2 = .332$. As predicted in ***Hypothesis 2a***, the effect of negative features was more prominent than the effect of positive features for all dependent variables as demonstrated by eta square values. Table 16 presents the means for candidates 2+7- and 4+7 (the column *The effect of additional positive features*) and candidates 7+2- and 7+4- (the column *The effect of the additional negative features*.

Table 16: Means for the effect of additional positive features added to the description of an unfavourable candidate and the effect of additional negative features added to the description of a favourable candidate. Competence and morality groups combined.

	The effect of the additional positive features				The effect of the additional negative features			
	2+7- (1 evaluation)		4+7- (2 evaluation)		7+2- (1 evaluation)		7+4- (2 evaluation)	
	M	SD	M	SD	M	SD	M	SD
Affective evaluation	2.23	1.861	3.37	1.997	5.73	2.026	3.55	1.984
Similarity to an ideal politician	1.86	1.562	3.14	2.100	5.38	1.964	3.20	2.048
Similarity to a bad politician	7.46	1.905	6.08	2.224	4.13	2.179	6.00	2.364
Voting intention	1.66	1.735	2.82	2.113	5.03	2.254	3.08	2.125

To test ***Hypothesis 2b***, the dimension × pair × additional features interaction effect was analysed. The effect was significant for similarity to a bad politician $F(1, 125) = 4.999$, $p = 0.027$, $\eta^2 = .038$ and marginally significant for affective evaluation $F(1, 125) = 3.810$, $p = 0.053$, $\eta^2 = .03$ and non-significant for similarity to an ideal politician, $F(1, 124) = 2.322$, $p = 0.130$, $\eta^2 = .018$ and voting intention $F(1, 125) = 1.212$, $p = 0.273$, $\eta^2 = .010$. As not all interaction effects were significant, I used planned comparisons to investigate differences between pairs of specific means. *A priori* contrasts allow for mean comparisons even if ANOVA returns non-significant main and interaction effects (Doncaster & Davey, 2007; Ruxton & Beauchamp, 2008). The significance of planned comparisons was evaluated based on *t* test values (Keppel & Wickens, 2004).

For affective evaluation, the effect of additional positive features added to the description of an unfavourable candidate (i.e. the difference between 2+ 7- and 4+ 7- features) was significant for both competence, $t(31) = 2.721$, $p = .007$, $d = 0.632$, and morality related traits, $t(34) = 3.410$, $p < .001$, $d = 0.580$. Although in both situations additional features increased candidate evaluation, the increase was more prominent for competence related features, thus supporting ***Hypothesis 2b*** which predicted a stronger effect of competence for positive traits. The same effect was also observed for voting intention, the effect of competence-related features , $t(31) = -3.532$, $p = .001$, $d = 0.749$, and morality related traits, $t(34) = -3.113$, $p = .002$, $d = 0.503$. For two other dependent variables, both effects were also significant but the effect of positive morality-related features was slightly more prominent than the effect of positive competence-related features, for similarity to an ideal politician, the effect of competence-related features, $t(31) = -3.36$, $p = .001$, $d = 0.626$, and morality related traits, $t(34) = -4.945$, $p < .001$, $d = 0.752$ and for similarity to a bad

politician, $t(31) = 2.872$, $p = .005$, $d = -0.499$, and morality related traits, $t(34) = 4.516$, $p < .001$, $d = -0.848$.

Having established that positive competence-features are generally stronger than negative competence features as well as that negative morality-features are stronger than positive-morality features, I wanted to investigate which of the effects is stronger – the negative effect of morality-related features or positive effect of competence-related features. However, as both features were added to the descriptions of two different politicians (i.e. one more unfavourable and the other more favourable), I used the perceived change in candidate image as a dependent variable (measured with the question *In your opinion, has the image of a candidate deteriorated, improved or has not changed?*, with -10 *deteriorated a lot*, 0 *has not changed*, +10 *improved a lot*). The analysis (conducted on absolute values to account for a change in positive and negative direction) showed negative morality features ($M = 4.344$; $SD = 2.471$) to be stronger than positive competence features ($M = 2.387$; $SD = 1.667$) , $t(61) = 3.673$, $p = .001$.

Finally, in order to investigate ***Hypothesis 4*** testing whether participants differentiated better between two positive (the difference in the evaluations between candidates 7+2- *vs* 7+4-) or two negative options (the difference in evaluations between candidates 2+7- vs 4+7-), I analysed the responses to a final question in the questionnaire, that is whether the candidate image has changed as a result of additional information and if so in what direction (with response -10 – *deteriorated a lot*, to +10 *improved a lot*). Again absolute values were used in the analysis. Table 17 presents the differences between candidate pairs.

Table 17: The difference between positive and negative options for competence- and morality-related traits. The means represent the extent to which two candidates are different. The higher the value the greater the difference between candidates in the pair. The means are presented in absolute values to account for the direction of change in the positive and negative direction.

	Competence		Morality	
Difference between candidate pairs:	M	SD	M	SD
2+7- vs 4+7-	2.387	1.667	3.088	2.248
7+2- vs 7+4-	2.969	2.596	4.344	2.471

The main effect for pair was significant, $F(1, 125) = 5.241$, $p = .024$, $\eta^2 = .040$, showing a greater change between two positive options (i.e. a difference between 7+2- *vs* 7+4-; $M = 3.656$; $SD = 2.608$) than two negative ones (i.e. a difference between +7- vs 4+7- ; $M = 2.754$; $SD = 2.008$), thus providing evidence for ***Hypothesis 4***. Additionally, the main effect for dimension was also significant, $F(1, 124) = 6.693$, $p = .011$, $\eta^2 = .051$, showing morality-related features ($M = 3.697$; $SD = 2.424$) to be stronger than competence-related features ($M = 2.682$; $SD = 2.191$). The dimension × pair interaction effect was non-significant, $F(1, 124) = 0.705$, $p = .403$, $\eta^2 = .006$.

3. Discussion

The aim of Study 4 was to test how additional positive features added to a description of an unfavourable candidate as well as negative features added to a description of a favourable candidate change candidate perception. Based on the literature review on negativity effect as well as the results of previous studies, I expected negative features to lead to a greater decrease in candidate evaluation compared to an increase resulting from

additional positive features. The results of conducted analyses confirmed these predictions. Interestingly, contrary to the earlier experiment (Study 3), the present research showed significant differences in the effect of both types of features, whereas the previous study found only evidence for a decrease in a candidate's evaluation as a result of additional negative features. The difference may be explained with differences in the study design, so that respondents in Study 3 were asked to evaluate individual candidate profiles which were later compared between groups, whereas participants in the present study were presented with a description of one candidate whose image either improved or deteriorated. Thus, respondents in Study 4 were more likely to expect some change in candidate image. Even though the effect of both positive and negative features was significant, the research provided evidence for the expected effect, that is negative features led to more prominent changes (as visible in *eta square* values). It is also worth mentioning that the stronger effect of additional unfavourable information was restricted to the image of a generally favourably perceived candidate (although Study 3 gives more evidence for that).

The present study aimed also at analysing the positive-negative asymmetry in the domain of morality-related and competence-related features. Based on earlier findings, I expected negative morality-related features to be stronger than their positive counterparts as well as positive competence-related features to be stronger than their negative counterparts. The results of conducted analyses generally provided evidence for these expectations. Additionally, the study showed negative morality-related features to be stronger than positive competence-related features (when compared in their absolute values). The finding joins together the research on negativity effect with the results of studies on morality and competence features used to describe political candidates, where morality dimension was found to be more important than competence dimension (Cwalina & Falkowski, 2016).

Finally, the aim of Study 4 was to test whether participants differentiated better between two positive (the difference between 7+2- vs 7+4-) or two negative options (the difference between 2+7- vs 4+7-). Providing evidence for ***Hypothesis 4***, the study showed greater changes among favourable candidates than unfavourable ones. The effect can be attributed to different motivations and mind-sets that participants adopted, when they analysed positive and negative options. In other words, people are likely to be more motivated to look for differences if available alternatives are attractive but will be less inclined to look for differences between options that they find unappealing. The differentiation between favourable and unfavourable candidates will be the subject of further investigation in the following studies described in this dissertation.

Study 5

So far, in Study 2, Study 3 and Study 4 I tested the predictions of the contrast model of similarity for candidates who differed in their image favourability. In Study 2, I analysed how additional positive and negative information changed the evaluation of a candidate who was initially described with the same number of positive and negative features ($S = 0.5$). In Study 3 and Study 4, on the other hand, I investigated how the same favourable or unfavourable information added to candidate profiles affected the evaluation of politicians whose image was favourable or favourable (i.e. $S < 0.5$ or $S > 0.5$ depending on the reference frame). The results of conducted studies generally provided evidence for the contrast model of similarity, although some notable deviations have been found. One of the recurrent effects observed in the experiments was a stronger effect of negative features compared to the effect of positive features, corroborating earlier research on negativity effect (Czapinski, 1986; Fiske, 1980; Hamilton & Zanna, 1972; Koch et al., 2016a; Peeters & Czapinski, 1990; Skowronski & Carlston, 1989).

However, there are situations in which positive features may be actually more meaningful than the negative ones. Imagine a voting situation in which there are various candidates: some of them are bad, some of them are good. After rejecting all candidates that are not adequate for the post, a voter is likely to deliberate which of the available candidates is better than the rest. In such a situation, he or she will focus on positive features that differentiate the candidates. Thus, although negative information may deem a candidate unsuited for the post, positive characteristics are likely to determine the final preference. Additionally, whereas the effect of negative features may lead to more extreme judgments, the effect of additional positive features is likely to be gradual. Such predictions are in line with the results of Study 3, where the values of similarity to an ideal and bad politician were

more extreme for negative candidate profiles but oscillated around the median value for positive candidates (see Figure 4). Based on these findings, I predict that an increase by *x* in candidate negativity may make the politician inadequate for the post so that a further increase in candidate negativity (by *y*) will not affect his or her perception. For positive features, on the other hand, an increase in candidate positivity by *x* can result in a higher preference for the candidate but this preference may even increase after a further increase in positivity by *y*. Thus, the following hypotheses were tested in this study:

> ***Hypothesis 3*:** For candidates whose image is unfavourable, additional negative features do not affect their evaluation. For candidates whose image is favourable, additional positive features will increase candidate evaluation.
>
> ***Hypothesis 4*:** The differentiation between a good and better candidate will be greater than the differentiation between a bad and a worse candidate.

Furthermore, as positive features are more likely to determine which candidate to vote for, it is also possible that voting intention will be far more determined by the extent to which a candidate is similar to an ideal politician than by his or her similarity to a bad politician. Thus, the following is predicted:

> ***Hypothesis 6*:** Voting intention will be better predicted by the candidate's similarity to an ideal politician than by his/ her similarity to a bad politician.

Finally, unlike as in previous studies, in which candidate profiles were presented in a descriptive manner, in this study I decided to present candidates using scales, so that a candidate was presented in a form of a chart with six dimensions (such as *competence* and

honesty). Each dimension has its positive (*competent* or *honest*) or negative (*incompetent* or *dishonest*) extremity. The extent to which a candidate possesses a particular trait was presented on a scale ranging from -10 (*extremely incompetent* or *dishonest*) to + 10 (*extremely competent* or *honest*), so that a candidate who scored +8 on competence dimension and -3 on honesty dimension could be described as a highly competent but slightly dishonest candidate.

Such a change in candidate presentation was necessary in order to test the effect of a gradual increase or decrease in feature positivity/ negativity on candidate evaluation, which was the main topic of this study. Additionally, it created an opportunity to test the effect of positive and negative features with regard to closed sets, which were typically analysed in Tversky's research. Whereas a previous descriptive presentation of candidates fits well with open sets of features, where the set characterizing a given object is potentially limitless, the depiction in a chart-like form of scales, where candidate cannot score lower than -60 and higher than +60, is an example of closed sets.

1. Method:

1.1.Participants

Thirty six participants took part in the experiment. The study was conducted using an MTurk platform. The sample (44.4% female) was relatively young (M =36.39, SD = 10.879). On average, participants were moderately interested in politics (M =5.31, SD = 2.887, measured with a 11-point Likert scale, with 0 *not at all interested in politics* and 10 *extremely interested in politics*) and were neither extremely left- or right-wing oriented (M = -.0.77, SD = 6.687, measured with a 21-point Likert scale, with -10 *extremely liberal* and 10 *extremely conservative*).

1.2.Procedure

At the beginning of the experiment, participants were instructed that they would be presented with profiles of seven political candidates that ran in parliamentary elections. They were also informed that each profile would be presented in a form of a table with six different dimensions (such as competence and honesty) describing a candidate. Additionally, they were told that each dimension could take the values of -10 to + 10, where the higher positive value symbolized the greater extent to which a politician possessed a certain positive feature of a particular dimension (e.g. + 8 meant that the candidate was highly competent). The same rule applied to negative values, so that the lower the value, the more negative aspect of the dimension characterized the candidate (e.g. -8 meant that the candidate was very incompetent). Participants were asked to study each candidate profile individually and evaluate it.

After reading one profile, participants evaluated it and moved to the other one. Each profile was presented separately and the order of the presentation was fully randomized. Participants could not return to their previous answers. After investigating a candidate profile, participants were asked to evaluate the candidate based on their affective evaluation, voting intention as well as similarity to an ideal and bad politician. In order to avoid any priming effect, the half of the participants was first asked about the similarity to an ideal politician and later similarity to a bad politician, whereas the other half was first asked about similarity to a bad politician, followed by a question on an ideal politician. At the end of the experiment participants were debriefed.

1.3.Materials

The participants were presented with seven descriptions of political candidates who were described as politicians running in parliamentary elections. The candidates differed in

the extent to which they possessed features relevant for a political post. Based on literature review, such aspects as education, qualifications, resourcefulness, honesty, justice and truthfulness were selected (Cwalina & Falkowski, 2006; Cwalina et al., 2005; Kinder, Peters, Abelson, & Fiske, 1980). The characteristics were found to be one of the most common criteria in the evaluation of political candidates.

Each of the characteristics was presented on a 21 point bipolar scale, so that zero constituted the neural point, negative values pertained to the negativity of a feature and positive values to its positivity (e.g. for qualifications, -10 signified *very low qualifications* and +10 *very high qualifications*). Figure 8 presents an example of the survey with a sign (•) marking the extent to which a candidate fulfilled a particular characteristics. The presented example describes a neutral candidate.

	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
unresourceful													•									resourceful
uneducated									•													educated
incompetent											•											competent
dishonest									•													honest
unjust												•										just
untruthful												•										truthful

Figure 8: Exemplary description of a political candidate used in the study (characteristics translated from Polish)

Apart from the neutral candidate whose combined sum of measures on each of the scales equalled 0 (see Figure 8), there were three negative positive and three negative candidate profiles.

Positive candidate profiles were constructed in such a way that they had either 10, 20 or 30 points towards the positive dimension, whereas negative profiles had either 10, 20 or 30 points towards the negative dimension. Additionally, in order to reduce the possible influence

of a particular set of traits, two different sets were used in the study. All candidate profiles used in each set are presented in Table 18. I also made sure to include both positive and negative features in candidate description (in order to avoid a situation in which a given candidate possessed only positive features or their profile consisted solely of negative features). Finally, I assured that the distribution of positive and negative values in each candidate profile had a similar variance, the result of Levene's invariance test for set A and B, $F(6, 35) = 0.0521$, $p = 0.099$.

Table 18: Candidate profiles (set A, set B) used in the study. Letters A to G stand for different candidates and numbers represent the extent of their personal characteristics.

Candidate profiles Set A:	A minus 30	B minus 20	C minus 10	D 0	E plus 10	F plus 20	G plus 30
intelligence	1	-7	-8	5	5	8	8
honesty	-9	2	4	-2	7	7	9
competence	2	3	5	3	-5	-2	7
credibility	-9	-8	-3	-6	4	7	-2
justice	-7	-2	-4	5	-4	-4	-1
engagement	-8	-8	-4	-5	3	4	9
Variance	21.67	21.22	21.56	20.67	20.56	21.89	21.67
Sum	-30	-20	-10	0	10	20	30
Set B:							
	A minus 30	B minus 20	C minus 10	D 0	E plus 10	F plus 20	G plus 30
intelligence	-8	-8	-5	5	8	7	-1
honesty	-9	-7	-7	-2	-4	-2	9
competence	-7	2	5	3	-5	-3	-2
credibility	2	-7	-4	-6	3	8	9
justice	1	-4	4	5	4	2	7
engagement	-9	4	-3	-5	4	8	8
Variance:	21.67	21.89	20.56	20.67	21.56	21.22	21.67
Sum	-30	-20	-10	0	10	20	30

Below each candidate profile there were four questions which measured candidate evaluation. The questions pertained to affective evaluation (*Please mark your attitude towards the candidate. How positive/ negative do you think he/ she is?*, with answers ranging from -10 *very negative*, to + 10 *very positive*), voting intention (*If the candidate ran for an important political post (e.g. the US Congress),would you vote for him/ her?* with answers ranging from 0 *extremely unlikely*, to +10 *extremely likely*), similarity to an ideal politician (*How similar is in your opinion the above presented candidate to the image of that extremely good politician?* with answers ranging from 0 *very dissimilar* to +10 *very similar*) and similarity to a bad politician (*How similar is in your opinion the above presented candidate to the image of that extremely bad politician?* again measured on a 11-point Likert scale).

2. Results

3.1.Differentiation between favourable and unfavourable candidates

Figure 9 presents the mean ratings for candidates' similarity to an ideal and bad politician.

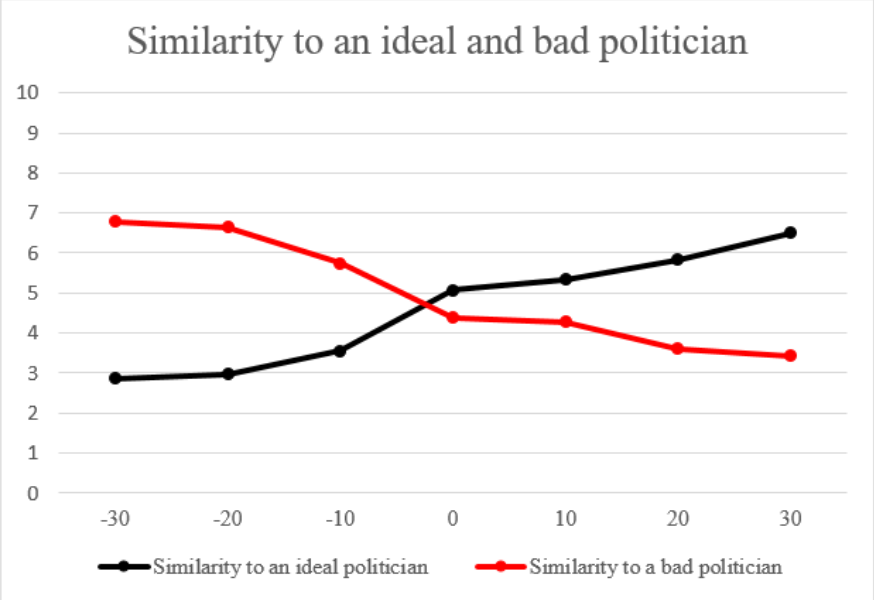

Figure 9: Mean ratings for the similarity to ideal and bad politician for descriptions of candidates used in the study.

The initial analysis showed that for most of the variables the data were not normally distributed and exceeded the accepted levels of skewness (Wessa, 2017). Thus, instead of a traditional repeated measures analysis of variance, its non-parametric version, Friedman's test was used (Bewick, Cheek, & Ball, 2004) in order to test whether the valence of candidate profile (-30, -20, -10, 0 + 10, +20, +30) differentiated candidate profiles with regard to their affective evaluation, voting intention, similarity to an ideal and bad politician. The results turned out to be significant for all dependent variables, for affective evaluation, $\chi^2(6) = 90.540$, $p < 0.001$, for voting intention, $\chi^2(6) = 78.505$, $p < 0.001$, for similarity to an ideal politician, $\chi^2(6) = 69.997$, $p < 0.001$ and for similarity to a bad politician, $\chi^2(6) = 62.370$, $p < 0.001$. Overall, the results showed that the valence of candidate profile affected the perception of candidate profiles. The means are presented in Table 19.

Table 19: Means for affective evaluation, voting intention and similarity to an ideal and bad politician for different candidate profiles analysed in the study.

	Affective evaluation		Voting intention		Similarity to an ideal politician		Similarity to a bad politician	
Candidate profile	M	SD	M	SD	M	SD	M	SD
- 30	-4.17	5.245	2.50	2.883	2.86	2.861	6.78	2.652
- 20	-3.11	4.956	2.92	2.761	2.97	2.688	6.64	2.520
- 10	-2.17	4.607	3.31	2.837	3.56	2.591	5.75	2.750
0	0.78	3.907	4.69	3.115	5.08	2.719	4.39	2.891
+ 10	1.75	3.375	4.72	2.300	5.33	2.217	4.28	2.263
+ 20	2.69	3.647	5.94	2.596	5.83	2.455	3.61	2.643
+ 30	4.08	3.996	6.28	2.753	6.50	2.558	3.44	2.961

In order to test whether the changes in similarity ratings follow the predicted direction, I used Page's *L* test which tests if there is a difference in trend between the positive candidates +10, +20 and +30 as well as the negative ones, -10, -20 and -30 (Page, 1963). Page's *L* test showed that similarity ratings followed the predicted direction. For similarity to an ideal politician, there was a significant trend for favourable candidates, $z = 2.696$, $p = .004$, and unfavourable candidates, $z = 2.352$, $p = .009$. The same pattern of results was found for similarity to a bad politician, for favourable candidates, $z = 2.466$, $p = .007$, and unfavourable candidates, $z = 2.352$, $p = .009$.

Finally, in order to test the predicted effects, I wanted to compare the means for candidate pairs. As the data contained many similar ratings (e.g. zeros as similarity of the worst candidate compared to the ideal one) instead of the traditional parametric or non-parametric testing, permutation tests were used for the post-hoc checks (see Welch, 1990; Yu, 2002 for the comparison of the approach based on traditional and resampling methods). The probabilities and confidence intervals for re-sampled groups have been obtained with the resample package available for R Studio (Team, 2015). For similarity to an ideal politician, generally no differences between analysed pairs were found,

candidates -30 vs -20: $p = .808$, $d_{\text{Cohen}} = 0.04$, $CI = -0.816 - 0.895$,

candidates -20 vs -10: $p = .294$, $d_{\text{Cohen}} = -0.223$, $CI = -1.082 - 0.635$,

candidates -10 vs 0: $p = .001$, $d_{\text{Cohen}} = 0.572$, $CI = -0.3 - 1.445$,

candidates 0 vs +10: $p = .920$, $d_{\text{Cohen}} = -0.101$, $CI = -0.957 - 0.755$,

candidates +10 vs +20: $p = .168$, $d_{\text{Cohen}} = 0.214$, $CI = -0.644 - 1.072$,

candidates +20 vs +30: $p = .223$, $d_{\text{Cohen}} = -0.267$, $CI = -1.126 - 0.592$.

For similarity to a bad politician, no significant differences between candidate pairs were found apart from the pair -10 *vs* 0:

candidates -30 vs -20: p = .602, d_{Cohen} = -0.054, CI = -0.91 - 0.801,

candidates -20 vs -10: p = .061, d_{Cohen} = 0.337, CI = -0.524 - 1.199,

candidates -10 vs 0: p = .009, d_{Cohen} = -0.482, CI = -1.35 - 0.386,

candidates 0 vs +10: p = .942, d_{Cohen} = 0.042, CI = -0.813 - 0.898,

candidates +10 vs +20: p = .078, d_{Cohen} = -0.272, CI = -1.132 - 0.587,

candidates +20 vs +30: p = .937, d_{Cohen} = 0.061, CI = --0.795 - 0.916.

Overall, the findings were inconclusive as the majority of differences between candidates was not significant. Although as predicted in ***Hypothesis 3*** the effect of additional negative features did not deteriorate candidate perception of already unfavourable candidates (i.e. non-significant difference between candidates -10 and -20 as well as -20 and -30), the findings did not provide sufficient evidence for an increase in candidate evaluation resulting from additional positive features for favourable candidates (i.e. no differences between candidates +10 and +20 as well as +20 and +30). Furthermore, there was no evidence for ***Hypothesis 4*** which predicted a better differentiation between favourable candidates than between the unfavourable ones. Importantly, however, the results followed the predicted trend as presented in Figure 9. One interesting observation found in the study was a stronger effect of negative features (compared to positive ones) for a neutral candidate. Although it was not a main research problem of this study, such a finding is in line with the already discussed negativity effect and the results of Study 2.

3.2.Predictors of voting intentions

In order to test whether similarity to an ideal politician is a better predictor of voting intention than similarity to a bad politician, I ran a series of linear regression analyses. Regressions were conducted separately for all positive (+10, +20, +30) and negative (-10, -20, -30) candidate profiles. In the model, voting intention was the dependent variable, with

predictors: affective evaluation (measured with -10 to +10), similarity to an ideal politician and similarity to a bad politician (measured with 0 to +10). Table 20 presents means and bivariate correlations for all variables analysed in the regression models.

Table 20. Means and bivariate correlations for similarity to an ideal politician, bad politician, affective evaluation and voting intention for a) favourable candidate profile (+10, +20, +30); b) unfavourable candidate profiles (-10, -20, -30)

a)	Similarity to an ideal politician	Similarity to a bad politician	Affective evaluation	Voting intention
M	5.889	3.778	2.843	5.648
SD	2.428	2.626	3.754	2.608
Similarity to an ideal politician		-.250	.731**	.859**
Similarity to a bad politician			-.326*	-.177**
Affective evaluation				.832**

b)	Similarity to an ideal politician	Similarity to a bad politician	Affective evaluation	Voting intention
M	3.130	6.389	-3.148	2.907
SD	2.752	2.645	4.942	2.807
Similarity to an ideal politician		-.192	.856**	.934**
Similarity to a bad politician			-.403**	-.236
Affective evaluation				.882**

Note: ** p < .01, * <.05

Both models were significant, for positive candidate profiles: $F(3, 35) = 55.672$, $p < 0.001$, $R^2 = .824$; for negative candidate profiles: $F(3, 35) = 95.003$, $p < 0.001$, $R^2 = .890$. In both models, voting intention was best predicted by similarity to an ideal politician, (for positive candidate profiles, $\beta = 0.542$, $p < 0.001$, for negative candidate profiles, $\beta = 0.658$, $p < 0.001$), followed by affective evaluation (for positive candidate profiles, $\beta = 0.473$, p

<0.001, for negative candidate profiles, β = 0.329, *p* = .012). In both models, similarity to a bad politician did not meaningfully predict voting intention, for positive candidate profiles, β = 0.112, *p* = .143; for negative candidate profiles, β = 0.023, *p* = .726. Thus, the results of conducted analysis supported ***Hypothesis 6*** which predicted candidate's similarity to an ideal politician to be a better predictor of voting intention compared to the similarity to a bad politician.

3. Discussion

The aim of Study 5 was to test how well people differentiated among more and less favourable as well as among more and less unfavourable candidate profiles. In the study, participants were presented with candidate profiles described on six scalar dimensions relevant for a political post. The candidate profiles differed in the extent of their positivity and negativity, so that the worst candidate scored -30 (with the minimal possible value of -60), whereas the best possible candidate scored +30 (with the maximal value of +60). In total, there were seven candidate profiles (-30, -20, -10, 0, +10, +20 and +30). Each participant evaluated all candidate profiles in a random order with regard to the affective evaluation of a candidate, voting intention, similarity to an ideal politician and a bad politician. It was predicted that people would not differentiate well between unfavourable candidate profiles (-10, -20, -30), so that negative features added to a candidate -10 would not deteriorate his/ her already negative evaluation. Similarly, it was expected that there would be no difference between candidate profiles -20 and -30. The results supported these predictions. However, contrary to what was anticipated, additional positive features did not increase the evaluation of an already favourable candidate, so that no differences between the pairs +10 and +20 as well as +20 and +30 were found.

Overall, the obtained results did not reach the required significance level or present a more coherent pattern of results, although similarity ratings generally followed the predicted trend as presented in Figure 9. One possible explanation for the lack of expected effects lies in the complexity of candidate profiles used in the present study. Perhaps the difference of 10 points was too small to be noticed by participants. Moreover, all candidate profiles (even the best and the worst in the set) consisted of positive and negative features, so that candidate -20 was depicted with such values as -7, +2, +3, -8, -2 and -8, whereas candidate 0 was described with values +5, -2, +3, -6, +5 and -5. Again, it is possible that although very precise and well thought-through, candidate profiles were too difficult for participants to process and the predicted effects would be observed, had a different form of candidate presentation was used.

Furthermore, the study showed that voting intention was best predicted by similarity to an ideal politician followed by affective evaluation. Importantly, however, similarity to a bad politician was not linked to willingness to vote for a candidate and this effect was observed for both favourable (+10, +20, +30) and unfavourable (-10, -20, -30) candidates. In other words, the fact that a rather unfavourable candidate was not similar to an ideal politician was more important than the fact that he or she was close to a prototypical bad politician. Similarly, people were far more likely to support a favourable candidate because of his/ her similarity to an ideal politician and not because of how distant he/ she was from the bad politician.

There are at least a few possible explanations for why similarity to a positive category and not the negative category determined voting intention. First, positive categories were shown to be a default option not only in impression formation (with positive traits attributed more often, eg. Willis & Todorov, 2006) but in everyday life (with positive outcomes

expected more often, eg. Hoorens, 2014). Positive categories were also found to be much more frequent than their negative counterparts in corpora studies (Rozin et al., 2010) as well as they have been often regarded a linguistic default option. For instance, negative words were shown to be far more often constructed from a positive root which became negated (e.g. honest and *dis*honest) than the reverse (e.g. contentious and non-contentious) (Matlin & Stang, 1978). Finally, discussing studies by Osgood and Richards as well as Deese (in Benjafield & Adams-Webber, 1976), Benjafield and Adams-Webber came to the conclusion that the positive category was most often the one which came into language earlier, occurred more frequently and was the first to be used by children.

All these findings suggest the positive category to be a default option, present not only in the way a person perceives other objects but also visible at the basic language level. Thus, it is likely that when thinking about intention to vote for a particular candidate participants adopted the image of a prototypical ideal candidate as a frame of reference. Additionally, the effect could be also attributed to a greater difficulty in the cognitive processing of negative categories than the positive ones (Ito et al., 1998; Pratto & John, 1991; Smith et al., 2003). If so, the similarity to an ideal politician could be adopted as an easier and less effortful criterion for candidate evaluation.

Study 6

The aim of Study 5 was to test how well people differentiated among various more or less favourable and unfavourable political candidates. In the study, participants read and evaluated seven candidate profiles which differed in the extent of their positivity/ negativity. The worst possible candidate scored -30 on six dimensions (ranging from -10 to +10), the best possible candidate scored +30. Other candidate profiles described candidates -20, -10, 0, +10 and +20. The results of the study turned out to be inconclusive as many of the anticipated effects were non-significant. Such findings could possibly be attributed to the complexity of candidate profiles used in the study (e.g. candidates were described with positive and negative values, regardless of whether their image was generally favourable or unfavourable). Additionally, the difference of 10 points could be too small to be noticed by participants. Finally, participants were asked to evaluate candidates on such variables as affective evaluation, voting intention, similarity to an ideal and bad politician.

All of these factors could result in a too complicated study design and study manipulation. Therefore, the aim of Study 6 was to test the same effects as in Study 5 but using a slightly simpler design. Thus, instead of evaluating seven candidate profiles, participants read only five. The difference between candidate scores was increased, so that candidates differed by 24 points (and not 10 as previously). Finally, the number of dependent variables was reduced and participants answered only one question, namely how similar was the candidate profile either to a prototypical ideal politician or the bad politician (two independent groups). The same hypotheses as in Study 5 were tested:

***Hypothesis 3*:** For candidates whose image is unfavourable, additional negative features do not affect their evaluation. For candidates whose image is favourable, additional positive features will increase candidate evaluation.

***Hypothesis 4*:** The differentiation between a good and better candidate will be greater than the differentiation between a bad and a worse candidate.

1. Method:

1.1.Participants

Forty two participants took part in the experiment. The sample (72.3% female) was recruited from university students and was relatively young, the participants' mean age equalled M = 25.10 (SD = 8.378). On average, participants were slightly disinterested in politics (measured with a 11-point Likert scale, with 0 *not at all interested in politics* and 10 *extremely interested in politics*, M =3.86, SD = 2.619) and were neither extremely left- or right-wing oriented (measured with a 11-point Likert scale, with 0 *extreme left* and 10 *extreme right* M = 4.55, SD = 1.310).

1.2.Procedure

The group was randomly divided into two research conditions depending on whether participants evaluated presented candidates with regard to their similarity to an ideal or bad politician. Each participant was shown five candidate profiles which differed in its valence (-48, -24, 0, + 24, +48). After reading one profile, participants evaluated it and moved to the other one. They were asked not to return to their previous answers. Each profile was presented separately and the order of the presentation was fully randomized. After investigating a candidate profile, participants were asked to evaluate the candidate's

similarity to either an ideal or bad politician. At the end of the experiment participants were debriefed.

1.3.Materials

Materials used in this study resembled those used in Study 5. All candidate profiles differed in the extent to which they possessed the following features: intelligence, honesty, competence, credibility, justice and engagement. Again, all features were important attributes for political candidates (Kinder et al., 1980). As previously, each of the characteristics was presented on a 21 point bipolar scale, so that zero constituted the neural point, negative values pertained to the negativity of a feature and positive values to its positivity (e.g. for intelligence, -10 signified *very low intelligence* and +10 *very high intelligence*).

Apart from the neutral candidate whose combined sum of measures on each of the scales equalled 0, there were two positive and two negative candidate profiles. Positive candidate profiles were constructed in such a way that they had either 24 or 48 points towards the positive dimension, whereas negative profiles had either 24 or 48 points towards the negative dimension. Table 21 presents candidate profiles used in the study.

Table 21: Candidate profiles used in the study. The numbers represent the extent to which a candidate possessed particular features on a scale -10 to + 10.

	Candidate -48	Candidate -24	Candidate 0	Candidate +24	Candidate +48
Resourcefulness	-6	-2	2	2	6
Education	-10	-6	-2	6	10
Qualifications	-8	-4	0	4	8
Honesty	-10	-6	-2	6	10
Justice	-7	-3	1	3	7
Truthfulness	-7	-3	1	3	7

Below each candidate profile there was a question which assessed the similarity of a particular candidate profile to the frame of reference. A group with a positive frame of reference was asked to evaluate how similar a candidate profile was to the image of an ideal politician (*On a scale from 0 to 10 how similar is the candidate to an image of an ideal political candidate?*, with 0 *very dissimilar* and 10 *very similar*). A group with the negative frame of reference answered the same question but with regard to the image of a bad politician.

2. Results

Figure 10 presents mean ratings for candidates' similarity to an ideal and bad politician.

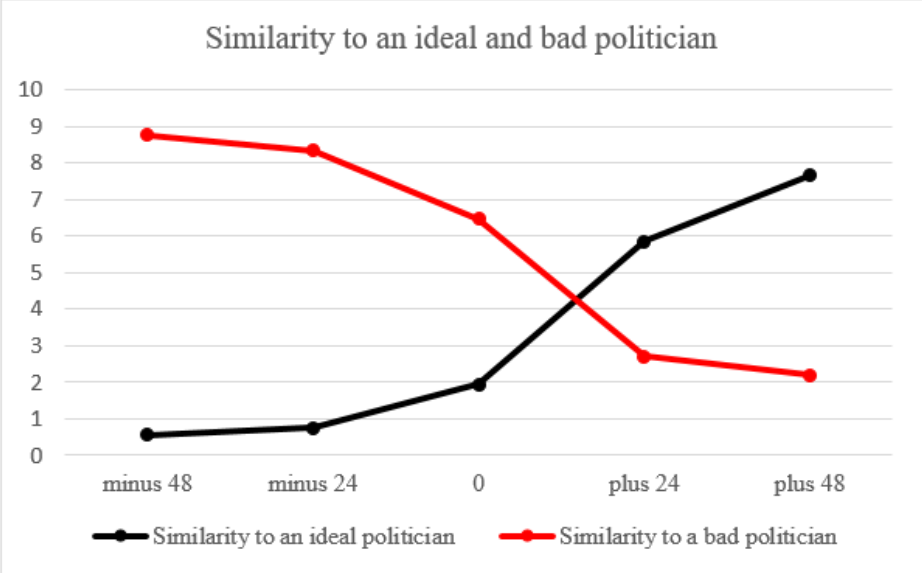

Figure 10: Mean ratings for the similarity to ideal and bad politician for descriptions of candidates used in the study.

Again, the initial analysis showed that for most of the variables the data were not normally distributed and exceeded the accepted levels of skewness (Wessa, 2017). Thus, instead of a traditional repeated measures analysis of variance, its non-parametric version,

Friedman's test was used (Bewick et al., 2004). The results of the analysis were significant for both types of similarity, showing significant differences between candidate profiles with regard to similarity to an ideal politician, $\chi^2(4) = 71.543$, $p < 0.001$, and similarity to a bad politician, $\chi^2(4) = 59.276$, $p < 0.001$.

As the data contained many similar ratings (e.g. zeros as similarity of the worst candidate compared to the ideal one), again the permutation tests were used for the post-hoc checks (see Welch, 1990; Yu, 2002). The probabilities and confidence intervals for re-sampled groups have been obtained with the resample package available for R Studio (Team, 2015). For similarity to an ideal politician, significant differences between the following candidate pairs were found,

candidates -48 vs -24: $p = .447$, $d_{\text{Cohen}} = 0.188$, $CI = -0.669 - 1.045$

candidates -24 vs 0: $p < 0.001$, $d_{\text{Cohen}} = -0.895$, $CI = -1.792 - 0.002$

candidates 0 vs +24: $p < 0.001$, $d_{\text{Cohen}} = 2.094$, $CI = - 1.03 - 3.158$

candidates +24 vs +48: $p < .001$, $d_{\text{Cohen}} = -0.97$, $CI = -1.875 - -0.066$

For similarity to a bad politician, significant differences between the following candidate pairs were found,

candidates -48 vs -24: $p = .483$, $d_{\text{Cohen}} = 0.164$, $CI = -0.693 - 1.021$,

candidates -24 vs 0: $p < 0.001$, $d_{\text{Cohen}} = -0.768$, $CI = -1.655 - 0.118$,

candidates 0 vs +24: $p < 0.001$, $d_{\text{Cohen}} = -1.9$, $CI = -0.869 - 2.93$,

candidates +24 vs +48: $p = .171$, $d_{\text{Cohen}} = -0.309$, $CI = -1.169 - 0.552$.

Table 22 summarises the significant differences between similarity ratings.

Table 22: Means for similarity to an ideal politician and a bad politician for different candidate profiles analysed in Study 4.

Similarity	Candidate pair (1) *vs* (2)	M (1)	SD (1)	M (2)	SD (2)	Significance
Similarity to an ideal politician	-48 *vs* -24	0.57	1.028	0.76	0.995	ns.
	-24 *vs* 0	0.76	0.995	1.95	1.596	**
	0 *vs* +24	1.95	1.596	5.86	2.104	**
	+24 *vs* +48	5.86	2.104	7.67	1.592	**
Similarity to a bad politician	-48 *vs* -24	8.76	2.508	8.33	2.726	ns.
	-24 *vs* 0	8.33	2.726	6.48	2.040	**
	0 *vs* +24	6.48	2.040	2.71	1.927	**
	+24 *vs* +48	2.71	1.927	2.19	1.401	ns.

Note: ** p <0.01

The study pointed to a few interesting observations. First, the results showed that additional negative features did not deteriorate candidate evaluation for candidates who were already perceived as unattractive (as visible in a non-significant difference between candidates -48 and -24 for similarity to an ideal politician), whereas additional positive features increased the evaluation of an already favourable candidate (as visible in a difference between candidates +24 and +48 for the same dependent variable). This pattern of results fully corroborated the predictions of ***Hypothesis 3*** which anticipated no differentiation between an unfavourable candidate and its even worse version as well as a significant difference between a favourable politician and its even better version. Importantly, however, the effect was limited to the similarity to an ideal politician as a dependent variable and was not present in the similarity to a bad politician. Furthermore, the analysis of effect sizes provided evidence for ***Hypothesis 4***, showing greater differences between candidates +24

and +48 (with Cohen's *d* equal 0.97 for similarity to an ideal politician and 0.309 for similarity to a bad politician) than candidates -24 and -48 (with $d = 0.188$ and $d = .164$ respectively).

3. Discussion

The participants in Study 6 compared five different candidates either to the best possible (ideal) or worst possible (bad) candidate. The descriptions of political candidates were presented on charts with five scales referring to different personality traits. In a group that compared the candidates to an ideal politician, the two worst candidates (i.e. candidates -24 and -48) were rated as far from the ideal politician as possible (with means between 0 and 1 on a scale ranging from 0 to 10). However, the similarity ratings of a neutral politician (0) and two favourable candidates (i.e. +24 and +48) were growing higher in the predicted order. That is the more positive a candidate's profile was, the bigger was his/her similarity to an ideal politician. Similar pattern of results was found for similarity to a bad politician as a dependent variable. Candidates -48 and -24 were both rated as very similar to the worst possible candidate (with means around 9 on the 0 to 10 scale). The candidates whose scores equalled 0 and +24 were gradually rated as less similar to a bad politician, whereas the best candidate from the set (+48) was rated as equally dissimilar to the bad candidate as the candidate +24.

Additionally, the study showed that an increase in feature positivity (and to a lesser extent feature negativity) was most visible if it pertained to a change from 0 to +24 (or -24) and less prominent if it happened within the range of 24 and 48 (or +/-24 and +/-48). The observed effect is congruent with the ratio difference principle and other psychophysical principles (Gescheider, 1997; Kahneman & Tversky, 1979; Stevens, 1957) which stipulate

that the same changes in terms of their magnitude are more prominent if they take place within smaller sets than if they pertain to bigger sets.

Overall, conducted analyses supported predicted effects for the similarity to an ideal politician. The difference between a bad candidate (-24) and its worse version (-48) was unnoticeable and both politicians were evaluated almost at the bottom of the measuring scales (both when compared to a bad and to an ideal politician). The evaluation of favourable candidates was more differentiated than that of the unfavourable ones, although there was no difference between a good candidate (+24) and an even better one (+48) with regard to their similarity to a bad politician. Overall, the study showed that for favourable candidates, his or her similarity to an ideal politician was monotonically dependent on the number of positive features (here measured with scale scores). Additionally, the evaluations of generally unfavourable candidates (as in the case of candidates -48 and -24) were more extreme than the evaluations of favourable candidates (+24 and +48). The findings show that people do not see much of a difference between political candidates with negative features regardless of the extent to which they are presented as bad. If all available alternatives are unappealing, it does not really matter which one of them is worse. However, if the judgment pertains to appealing options (in the case of this study, positive candidates), then the decision which one of them is better gains on importance.

Importantly, the effects of greater differences among attractive options and not the unattractive ones were limited only to the evaluation of similarity to an ideal politician and were not found if the evaluation of candidate profiles pertained to their similarity to a bad politician. The obtained results are also in line with Study 2 which showed no effect of positive features for comparisons to a bad politician and Study 5 which showed similarity to an ideal politician as the best predictor of voting intention.

One of possible explanations for this effect is that a positive category has been found to be a default option for decision-making and evaluation (Lewicka, 1993; Rozin et al., 2010; Sears, 1983). Furthermore, perhaps the lack of differences between attractive candidates for similarity to a bad politician could be attributed to the fact that the activation of the negative category increased difficulty of a decision task, as for instance suggested by the studies on the processing of positive and negative evaluative terms (such as *good* vs *bad*) and questions (such as *Do you like me?* vs *Don't you like me?*) which showed a longer processing time for negative terms and questions compared to their positive counterparts (Kamoen, Holleman, Mak, Sanders, & Van Den Bergh, 2017). Alternatively, the effect may be also attributed to the differences in approach-avoidance tendencies for positive and negative categories so that unfavourable stimuli lead to stronger avoidance behaviour compared to the influence of favourable stimuli on approach tendencies (Brown, 1948; Rozin & Royzman, 2001). If so, the activation of a negative frame of reference (bad politician) might trigger an avoidance tendency and make other options less appealing.

Furthermore, the findings of Study 6 provided evidence for the hypothesis predicting a better differentiation between positive options than negative ones. This observation is further corroborated by the results of other studies showing that lower differentiation with regard to negative characteristics seems to be a general rule rather than an exception. For instance, in her research on social discrimination and in-group favouritism, Mummendey and others (Blanz et al., 1995; Mummendey & Otten, 1998; Mummendey et al., 2000) have repeatedly found that people discriminated with regard to positive domains, while there was no differentiation in negative domains. Similarly, analysing the effects of mental addition and subtraction, Dunning and Parpal (1989) found that people perceived more impact if the issue was positive (i.e. passing an exam) than if it pertained to a negative category (failing

an exam). Finally, a similar pattern of results was observed by Dhar, Nowlis and Sherman (1999) in their studies on comparison effects and comparison shifts. In the study, participants were asked to elaborate on the differences between two positive or two negative options and the researchers analysed how the direction of an initial comparison task affects the relative attractiveness of analysed options in a subsequent preference task. The study found that preference shifts were slightly greater for decisions concerning positive rather than negative options (respectively 17% *vs* 12%, in Study 1).

Study 7

Thus far conducted studies have given some evidence for the asymmetrical effect of additional positive and negative features interpreted within the framework of contrast model of similarity. So far, candidates were evaluated with such measures as affective evaluation, perceived similarity to an ideal and bad politician as well as voting intention. Furthermore, the profiles were typically always assessed individually (apart from Study 4 where respondents evaluated the same candidate twice). Such a design did not account for three important factors.

First, the presented candidate evaluation hardly resembled a typical voting situation in which voters decide not so much about how much they like a particular candidate but more importantly about which candidate from those available they are most willing to support (Redlawsk, 2002). Second, taking into consideration a plethora of evidence showing differences between separate and joint evaluations (Hsee, Loewenstein, Blount, & Bazerman, 1999), it is important to test whether the observed asymmetrical effect of positive and negative features would hold for situations in which two different options are presented together. Third, so far valence framing was limited to the positive and negative frames of reference (i.e. the image of a prototypical ideal or bad politician) and did not account for other types of framing. Thus, the aim of Study 7 was to address these limitations and provide a further verification of the effects in question.

In order to research in more detail the differences in the perception of similarity between candidates in positive and negative framing, the manipulation of valence framing was extended to include candidate presentation in terms of their choice or rejection. Such a wording fits best a classical understanding of equivalence framing which manifests itself when two logically equal statements make people change their preferences, depending on the

way in which the content is presented (Bizer & Petty, 2005; Cacciatore, Scheufele, & Iyengar, 2016). It was expected that the wording of a decision in terms of choice or rejection would provoke participants to engage in different comparison modes and adopt diverse voting strategies (Laran & Wilcox, 2011). Voters asked to choose a better candidate were expected to focus on positive attributes of candidates as well as adopt a positive frame of reference, whereas participants asked to reject a worse candidate were more likely to focus on negative features and use a negative frame of reference. Such an assumption is in line with prototype models of categorization which have found that the probability to include an object to a given category rises with its increasing similarity to that prototype (Nosofsky, 1987; Rosch, 1975a).

Study 7 had three main research objectives. The first aim of the study was to test how the framing of a decision in terms of choice or rejection would affect the certainty of that decision. As predicted in the hypothesis on valence framing, decisions framed in a negative manner should have a stronger effect on candidate evaluation compared to the decisions framed positively. Thus, the following hypothesis was tested:

Hypothesis 0: The decisions framed in terms of rejection will be more certain that the decisions framed in terms of choice.

The second aim of the study was to investigate how well people differentiated between various candidate profiles which differed in their image favourability. ***Hypothesis 4*** predicted that the differentiation between a good and a better candidate would be greater than the differentiation between a bad and a worse candidate. In order to test this assumption together with valence framing manipulation, I designed an experimental study in which respondents were asked to estimate how likely they were to choose or reject one of two candidates which differed in the extent of their positivity/ negativity. In total, there were three

candidate profiles comprising of various positive and negative features. The neutral candidate was characterized by five positive and five negative features, the positive candidate had ten positive and five negative features, whereas the negative candidate had five positive features and ten negative ones. Each participant was presented with only two candidate profiles – either the neutral and the positive one or the neutral and the negative one. Depending on the condition, respondents were asked about their certainty of a decision to choose or reject one of the candidates from the pair. In total there were eight research condition, depending on whether 1) the decision was framed in terms or choice or rejection; 2) the decision pertained to the pair of candidates neutral *vs* positive or neutral *vs* negative candidate; and 3) the decision concerned the neutral or non-neutral candidate (either positive or negative). In order to fit this study design, the original ***Hypothesis 4*** was tested in the following form:

> ***Hypothesis 4***: The differentiation between a neutral and positive candidate will be greater than the differentiation between a neutral candidate and a negative one.

Finally, the aim of this study was to address the problem of preference reversals, that is a situation in which there is a change in the relative frequency or the extent to which one option is favoured over the other (Dhar et al., 1999; Shafir et al., 1993; Tversky et al., 1990). More precisely, the decision to choose a neutral candidate over the negative one may not equal the decision to reject the negative candidate over the neutral one. Although the studies on the negativity effect in valence framing conducted by Bizer and others (Bizer et al., 2011, 2013) showed attitudes formed in a negative form (i.e. rejection) to be stronger than those framed as support, the findings of Study 2 and Study 6 pointed to an opposite effect, that is a better differentiation between candidates in the situation in which the positive frame of reference was activated (i.e. the category of an ideal politician). Thus, based on these

findings, I decided to test a hypothesis predicting a better differentiation between two candidates for a situation in which the decision is framed positively (as choice) rather than negatively (as rejection).

> ***Hypothesis 5***: The certainty to choose a neutral candidate over the negative one will be higher than the certainty to reject a negative candidate when paired with the neutral one.

1. Method

1.1.Participants

One hundred sixty three participants (81% female; M_{age} = 32.38, SD_{age} = 8.073) took part in the experiment. The study had a form of an online survey designed in Qualtrics. The link to the survey was sent to university students as well as published on Facebook forums due to COVID-19 pandemic. The survey questions were in Polish. On average, respondents were moderately interested in politics (political engagement: M = 5.90, SD = 2.295, measured as previously on a 11-point Likert scale) and were neither extremely left- or right-wing oriented (political beliefs: M = -0.03, SD = 5.173, measured on a 21-point Likert scale with -10 *extremely left-wing*, +10 *extremely right-wing*).

1.2.Procedure

Participants were randomly assigned to eight research conditions, depending on whether the decision was framed in terms of choice or rejection, the candidate it concerned as well as the favourability of presented candidates (discussed further in Materials section). In each condition, respondents first read the instruction explaining the study design. They were told that they would be presented with descriptions of two fictitious politicians who were running for the same political post. Additionally, they were informed that there were

no other candidates contesting the election so that they would have to select one of the two available candidates.

On the next page, participants were shown profiles of two candidate profiles – Candidate 1 and Candidate 2. Half of the respondents was presented first with a profile of a "neutral" and then a "positive" politician; the other half first read a profile of a "neutral" and then a "negative" politician. The neutral candidate was always presented first (Candidate 1); Candidate 2 could be either positive or negative, depending on the condition. After reading candidate profiles, respondents were asked about their certainty to choose (or reject) one of the candidates (either Candidate 1 or Candidate 2). Additionally, respondents estimated the similarity between two presented candidates (Candidate 1 and Candidate 2) as well as they were asked to mark whether they found Candidate 1 more similar to an image of a prototypical bad or ideal politician. The same question was asked about the similarity of Candidate 2. Having completed this section, respondents answered demographic questions (sex, age, education, political engagement and political beliefs). Once the study completed, participants were debriefed.

1.3.Materials

Eight different versions of a questionnaire were constructed, depending on framing (choice *vs* rejection), the candidate in question (Candidate 1 *vs* Candidate 2) as well as the favourability of Candidate 2 (positive *vs* negative). Respondents in choice condition were asked one the following questions: *If you were to decide which candidate to vote for, how certain would you be to select* ***Candidate 1***? or *If you were to decide which candidate to vote for, how certain would you be to select* ***Candidate 2***? Respondents in rejection condition provided their responses to the question: *If you were to decide which candidate to reject, how certain would you be about not selecting* ***Candidate 1*** *(or* ***Candidate 2****)*? Participants marked

their certainty on a 11-point Likert scale, with 0 *I would definitely not vote for* (*I would definitely not reject*) and 10 *I would definitely vote for* (*I would definitely reject*). Additionally, respondents evaluated the similarity between Candidate 1 and Candidate 2 (*How similar are the two presented candidates?* with answers ranging from 0 *not at all similar* to 10 *very similar*) as well as the similarity of Candidate 1 and Candidate 2 two an image of a prototypical bad or ideal politician. The question read: *Decide whether Candidate 1 is more similar to an ideal or bad politician? Slide the pointer to the left or right, depending on your opinion*. The same question was asked with regard to Candidate 2. The similarity was measured with a 21-Likert scale, with -10 *extremely similar to a bad politician* (values to the left) and +10 *extremely similar to an ideal politician* (values to the right).

Three candidate profiles which differed in the number of positive and negative features were used in the study. A neutral candidate was characterized by five positive and five negative features, a positive candidate was described with ten positive and five negative features and a negative candidate was characterized by five positive and ten negative features. The negative and positive candidate had the same base features (five positive and five negative) and they differed only with regard to additional five favourable or unfavourable traits. Below I present descriptions of candidates as they were presented to participants (underlined is the additional information which was different from the profile of a positive and negative candidate).

> ***Neutral candidate:*** *To positive features of a candidate belong his ambition, experience and high education. He is said to care for the security of the country and be effective in his actions. When it comes to his negative features, people say he makes empty promises, is biased and disloyal. He is said to be corrupted and lazy.*

Positive candidate: *To positive features of a candidate belong his intelligence, truthfulness, integrity, honesty and fairness. He is praised for taking care of citizens and keeping his word. He is said to be open-minded, empathic and devoted. When it comes to his negative features, people say he is intolerant, quarrelsome, incompetent, radical and that he lacks education.*

Negative candidate: *To positive features of a candidate belong his intelligence, truthfulness, integrity, honesty and fairness. When it comes to his negative features, people say he is intolerant, quarrelsome, incompetent, radical and that he lacks education. He is criticized for his stupidity, despotism, greed, lack of culture and populism.*

1.4.Features selected for candidate profiles

Candidate profiles were designed based on results of the preliminary study described in the methodological section. To select features for candidate descriptions, I used the data from the pilot study described in Study 2. In order to select additional positive and negative characteristics for the profile of a positive and negative candidate, I chose features that had similar affective loadings (measured in absolute values) and ran a (2) × (5) repeated measures ANOVA for five positive and five negative features, with valence (positive/ negative) and feature as within-subject variables. The conducted analysis yielded a non-significant result for valence, $F(1, 19) = 2.30$, $p = 0.577$, $\eta^2 = 0.0014$, showing that on the aggregate level positive features (M = 7.670, SD = 2.633) did not differ from the negative ones (M = 7.296, SD = 3.206) in their affective loading. Additionally, I wanted to make sure that the positive and negative features used to construct the neutral candidate profile did not differ in their affective loading. A (2) × (5) repeated measures ANOVA yielded a non-significant result for valence, $F(1, 19) = 0.056$, $p = 0.816$, $\eta^2 = 0.003$, showing that on the aggregate level positive features (M = 7.461, SD = 3.549) did not differ from the negative ones (M = 7.452, SD =

3.462) in their affective loading. The descriptive statistics for particular features are presented in Appendix 2.

2. Results

2.1.Framing effects and the differentiation between candidate profiles

In order to test the predicted effects, I conducted a 2 (framing: choice *vs* rejection) × 2 (pair: neutral-positive *vs* neutral - negative) × 2 (candidate: neutral *vs* non-neutral) ANOVA with decision certainty as a dependent variable. The non-neutral candidate was either positive (in the pair neutral-positive) or negative (in the pair neutral - negative). Table 23 presents means for eight research conditions analysed in the study.

Table 23: Means for decision certainty concerning the choice or rejection of candidates depending on whether the neutral candidate was presented together with a positive one (upper rows) or a negative one (lower rows). The means in the Choice framing represent the certainty of choosing a candidate, while the means in the Rejection framing represent the certainty of rejecting a candidate.

Pair	Framing	Candidate	M	SD
Neutral-positive	Choice	neutral	4.682	2.934
		positive	5.706	2.687
	Rejection	neutral	6.579	2.694
		positive	3.682	2.982
Neutral-negative	Choice	neutral	4.048	2.559
		negative	4.300	3.063
	Rejection	neutral	5.400	2.644
		negative	6.682	2.234

The main effect of framing was significant, $F(1, 155) = 4.395$, $p = 0.038$, $\eta^2 = 0.028$, showing that the certainty of a decision framed as rejection ($M = 5.554$; $SD = 2.881$) was higher than that framed as choice ($M = 4.638$; $SD = 2.834$). The results provided evidence for ***Hypothesis 0*** predicting a stronger certainty of decisions in negative framing. The main effects of pair, $F(1, 155) = .016$, $p = 0.899$, $\eta^2 < 0.001$ and decision, $F(1, 155) = .039$, $p =$

0.844, $\eta^2 < 0.001$, were non-significant, showing that overall there were no differences in certainty between the neutral-positive (M = 5.075; SD = 2.997) and neutral-negative pair (M = 5.133; SD = 2.793) as well as between Candidate 1 (always neutral; M = 5.134; SD = 2.823) and Candidate 2 (non-neutral, either positive or negative; M = 5.074; SD = 2.966). More importantly, the framing × pair, $F(1, 155) = 5.036$, $p = 0.026$, $\eta^2 = 0.031$, decision × pair, $F(1, 155) = 3.921$, $p = 0.049$, $\eta^2 = 0.025$ and framing × decision × pair interaction effects, $F(1, 155) = 8.279$, $p = 0.005$, $\eta^2 = 0.051$ were significant, whereas the framing × decision effect, $F(1, 155) = 2.825$, $p = 0.095$, $\eta^2 = 0.018$ was non-significant.

Next, I investigated whether respondents differentiated better between a neutral and a positive candidate or between a neutral and a negative candidate. The greater effect for the first pair was expected (***Hypothesis 4***). Although decision × pair interaction effect was significant, none of the simple effects reached required significance level. Therefore, in order to test ***Hypothesis 4***, I investigated the predicted effects in framing × decision × pair interaction. The simple effect of decision showed no difference in decision certainty concerning a neutral and a negative candidate both in choice, $F(1, 155) = .087$, $p = 0.768$, $\eta^2 = 0.001$, and rejection condition, $F(1, 155) = 2.299$, $p = .131$, $\eta^2 = 0.015$. When it comes to the decisions concerning the neutral and positive candidate, again there was no difference between candidates in choice condition, $F(1, 155) = 1.343$, $p = .248$, $\eta^2 = 0.009$, but such a difference was present in rejection condition, where participants opposed the neutral candidate more strongly than the positive one, $F(1, 155) = 11.430$, $p = .001$, $\eta^2 = 0.009$. In other words, respondents differentiated better between the neutral and positive candidate if they were asked to reject the worse candidate from the pair but they did not see much difference between them if the decision was framed in terms of choice. Additionally, neither

in choice nor in rejection condition respondents saw a difference between the neutral and a negative candidate. Descriptive statistics for analysed pairs are presented in Table 23.

Finally, in order to test ***Hypothesis 5***, I used planned comparisons to compare whether the certainty of choosing the positive candidate when paired with the neutral one would be higher than the certainty of rejecting the negative candidate when paired with the neutral one. The difference between analysed candidates turned out to be non-significant, $t(37) = 1.239$, $p = .223$, showing that there was no difference between the decision certainty of choosing a positive candidate ($M = 5.706$; $SD = 2.687$) and rejecting a negative candidate ($M = 6.682$; $SD = 2.234$). Thus the results refuted the predictions of ***Hypothesis 5***.

2.2.Predictors of decision certainty (GLM)

In order to investigate in more detail the interaction of framing, pair and candidate, I also used a generalized linear model in which I analysed how the framing of a decision in terms of choice and rejection as well as available candidate options (i.e. pair: neutral *vs* positive and neutral *vs* negative) influence decision certainty. More specifically, I was interested in how the framing of a decision as well as the pair in which the candidate was presented (which created an external context for the decision) affected certainty to choose or reject the neutral candidate. The analysis was conducted only for decisions concerning the neutral candidate, which was the comparison standard in all conditions. Additionally, I wanted to investigate how decision certainty was affected by similarity between two candidates in the pair (i.e. neutral and positive/ negative), the neutral candidate's similarity to a prototypical bad/ ideal politician (called Prototype Similarity 1) as well as the similarity of the other candidate's from the pair to a prototypical bad/ ideal politician (called Prototype Similarity 2) . Doing so, I wanted to analyse which of these factors were the best predictors of voting intention and how they depended on decision framing and the compared pair.

In order to do so, statistical modelling was carried out using the generalized linear model with maximum likelihood estimation in SPSS 25 (IBM Corp, 2017). The decision certainty was a dependent variable. The predictor variables consisted of two categorical variables, framing (choice *vs* rejection) and pair (neutral-positive *vs* neutral-negative), as well as three numerical variables, similarity between Candidate 1 (neutral) and Candidate 2 (positive or negative), similarity of a neutral candidate to the image of an ideal or bad politician (called here Prototype Similarity 1, with 1 being the neutral candidate) and similarity of the other candidate from the pair to an image of an ideal/ bad politician (Prototype Similarity 2, with 2 meaning the positive or negative candidate depending on the pair). The similarity between candidates was measured with a 11-point Likert scale (with 0 *no similarity* and 10 *maximal similarity*), whereas similarity to a prototypical ideal or bad politician was measured with a 21-point Likert scale, with -10 m*aximal similarity to a bad politician* and +10 *maximal similarity to an ideal politician*). In total, the sample consisted of 82 people. Table 24 presents descriptive statistics for numerical variables analysed in the study.

Table 24: Descriptive statistics for numerical variables analysed in the model.

		Min	Max	M	SD
Dependent variable	Decision certainty	0	10	5.13	2.823
Covariate	Candidate Similarity (Candidate 1 and Candidate 2)	0	10	4.22	2.352
	Prototype Similarity of Candidate 1 (neutral)	-10	8	-3.17	4.881
	Prototype Similarity of Candidate 2 (positive or negative)	-10	10	-1.27	5.308

Likelihood-ratio test was used to test the goodness of fit of the model (Glover & Dixon, 2004). Likelihood Ratio chi square test showed the model fit the data well, χ^2 (17)= 96.684, $p < 0.001$. Wald chi square was used to test interaction effects (Gourieroux, Holly, & Monfort, 1982). From six analysed interactions, two were significant, framing × pair, Wald $\chi^2(3) = 9.250$, $p = .026$, and framing × pair × prototype similarity 1 (neutral candidate), Wald $\chi^2(4) = 88.123$, $p < .001$, whereas four other models, including candidate similarity and prototype similarity 2 (non-neutral candidate) as predictors, were non-significant, framing × pair × candidate similarity, Wald $\chi^2(4) = 5.120$, $p = .275$, framing × pair × prototype similarity 2 (non-neutral candidate), Wald $\chi^2(4) = 7.215$, $p = .125$, candidate similarity × prototype similarity 1 (neutral candidate), Wald $\chi^2(1) = 0.00$, $p = .996$ and candidate similarity × prototype similarity 2 (non-neutral candidate), Wald $\chi^2(1) = 0.300$, $p = .584$. Based on the results, it can be said that the decision certainty about choosing or rejecting a neutral candidate in the pair neutral *vs* positive candidate and neutral *vs* negative candidate depended on framing, candidate pair and similarity of a neutral candidate to the prototype, whereas it was not affected by the similarity between two candidates presented in the pair or other candidate's similarity to the prototypical ideal/ bad politician. All parameter estimates for all interactions analysed in the model are provided in Appendix 9. Below I present a more detailed description of significant effects along with the discussion of the observed relationships.

Based on the parameters, the following observations can be made. For framing × pair interaction, the model predicted a higher certainty to choose the neural candidate when paired with the negative one ($b = 2.623$, $p = .009$) and to reject the neural candidate when paired with the positive ($b = 2.473$, $p = .055$), although in the latter case the effect was only marginal. The framing of a decision in terms of choice had no effect on certainty for a

situation in which the neutral candidate was paired with the positive one (b = 454, p = .676). Furthermore, from all other effects, only the effects for pair × framing × prototype similarity 1 (i.e. the similarity of a neutral candidate to the prototypical bad/ ideal candidate) reached the required significance level. The analysis showed that in a situation in which respondents had to decide about the choice of a neutral candidate presented together with the positive one, decision certainty to choose the neutral candidate was the higher, the higher was the perceived similarity of a neutral candidate to the prototypical ideal candidate, b = .470, p < 0.001. The same was true for a choice of a neutral candidate when paired with the negative one, b = .495, p < 0.001. Additionally, the certainty of rejecting a neutral candidate when paired with the positive one was the lower, the higher was the neutral candidate's similarity to an ideal politician, b = -.345, p = 0.004. The similar effect was also present if a respondent had to decide about the rejection of a neutral candidate when paired with the negative one, b = -.323, p = 0.001.

3. Discussion:

The aim of Study 7 was to test how well people differentiated between better and worse candidates as well as how this differentiation is affected by the way the decision was framed. In order to do that, a study was designed in which participants read two candidate profiles and were asked to make a decision concerning the choice or rejection of a particular candidate from the pair. The first candidate was always neutral, whereas the other candidate was either positive or negative. In total, there were eight different research conditions.

The results of the study showed a few interesting effects. First, the certainty of decisions framed in terms of rejection was higher than the one framed as choice. Such a finding corroborates earlier studies conducted by Bizer and others (Bizer et al., 2011; Bizer & Petty, 2005, 2012) who in a series of experiments found negative valence framing to be

stronger. Furthermore, analysing why the attitudes presented as opposition were more certain than the ones coined as support, the researchers identified depth of processing as an important moderator of valence framing effect (Bizer et al., 2013). More precisely, they found that the valence-framing effect happened only if respondents were motivated to process information or when their cognitive resources were not depleted. Such an explanation points to a different processing of positively and negatively framed information, with negative framing requiring more cognitive effort (also found in Hoosain, 1973; Unkelbach et al., 2008; Wason, 1959).

Importantly, the studies conducted by Bizer and others (Bizer et al., 2011, 2013; Bizer & Petty, 2005, 2012) focused on framing effects pertaining to attitudes presented in terms of support and opposition. As shown in Study 7, the same effect can be found also in decisions framed as choice or rejection. Numerous studies on preference shifts showed that choice and rejection are not the same and lead to changes in preferences for the chosen/ rejected alternatives (Laran & Wilcox, 2011; Park, Jun, & Macinnis, 2000). Also here, Laran and Wilcox (2011) attributed these inconsistencies to differences in information processing involved in each of the tasks. Namely, when asked to choose a particular option, people tend to focus on information that is consistent with their preference and make preference-consistent decisions. Thus, they are more likely to focus on positive attributes in presented options or adopt a positive point of reference (such as the ideal version of an option). When asked to think about rejecting an alternative, they concentrate on information that is inconsistent with their preference and make preference-inconsistent decisions (focusing on negative features or adopting a negative point of reference). Furthermore, the effect may be attributed to different motivational processes involved in the decision-making process, with negative framing leading to stronger avoidance tendencies compared to approach tendencies in positive framing (Brown, 1948; Hsee, Tu, Lu, & Ruan, 2014; Miller, 1944).

The study points also to an interesting asymmetry in the differentiation between positive and negative options. The observation that respondents were equally certain about their decisions of choosing and rejecting a neutral or negative candidate suggests that neither of the candidates was visibly better than the other. However, when presented with the pair of a neutral and positive candidate respondents were more certain about which of the candidates is worse, which is visible in a higher certainty to reject the neutral candidate. The findings are congruent with the results of earlier studies and run contrary to density hypothesis according to which negative options are more differentiated and thus dissimilar (Alves et al., 2015; Koch et al., 2016b; Unkelbach et al., 2008). What the present study shows is that the perceived similarity between more or less favourable options is dependent on such factors as context and motivation.

Finally, the results from the conducted generalized linear model showed that the certainty of a decision to choose or reject a neutral candidate when paired with the negative or positive counterpart can be also predicted by the extent to which the neutral candidate is similar to the image of an ideal politician – the higher the similarity to an ideal politician, the more likely the candidate was chosen and the less likely he was rejected. Importantly, however, neither the similarity of the other candidate to the prototype nor the degree of similarity between two compared candidates influenced the certainty to choose or reject the neutral candidate. Such an observation is unexpected but it seems to show the importance of internal comparison standards, that is what a person perceives as “an ideal politician” or “a bad politician”, in candidate evaluation. Furthermore, based on the findings of Study 5 which analysed the predictors of voting intention, it can be assumed that the similarity to a positive comparison standard is far more important.

7. General Discussion

The evaluations of good and bad are probably one of the most common judgements people make. Strange as it might sound, people are constantly determining whether something is attractive or not appealing or repulsive. They can even do this for such objects as an alarm clock or a refrigerator (Jarudi, Kreps, & Bloom, 2008) and they are making unconscious and automatic judgements about the people they encounter (Bargh, Chaiken, Govender, & Pratto, 1992). However, the categories of "the good" and "the bad" are not symmetrical. As it seems, we pay more attention to the negative features especially when we are somehow remote from an evaluated object. Only at a closer inspection, we start to weigh the negative and the positive features equally. Psychologists call this tendency to value negative information more as negativity effect (Baumeister et al., 2001). But still, people tend to overestimate positive information especially when they are connected with their own life. For example, most of us better remember happy than sad events from our own past (Bower, 1981; Walker et al., 2003). This asymmetry between the positive and negative information is predominant in the studies of how we evaluate others. Although the way we think of other people around us has various consequences on our lives, the way we think about people engaged in politics has important consequences on the lives of other people as well. We can really change the lives of thousands by casting votes in different kinds of political elections. That is why cognitive and social psychologists pay so much attention to the psychological mechanisms of the evaluations and choices we make about politicians. The seven studies described in this dissertation are also a part of this scientific endeavour.

One of the research aims of my project was to investigate how the comparisons to positive or negative frames of reference (i.e. the image of an ideal and bad politician) as well

as the formulation of a decision in terms of rejection or choice affect candidate evaluation and decision certainty. Based on the results on negative valence framing, I anticipated negative frames of reference to be more effective than the positive ones (***Hypothesis 0***). Another goal of my research was to analyse how additional positive and negative information about a candidate affected his or her perception depending on how favourable or unfavourable candidate image was (***Hypothesis 1***). Based on the assumptions of the contrast model of similarity (Tversky, 1977), I predicted that additional negative features would damage the image of a "good" candidate but would do no harm to the image of an already "bad" politician. Furthermore, according to the model additional positive information would improve the perception of an unfavourable candidate but would not increase the evaluation of an already positive candidate. The verification of the theoretical predictions of the model and the comparison of the predicted and observed similarity measures was one of my other research objectives.

Drawing on the studies on negativity effect, I also wanted to test how powerful negative information is in the political context (***Hypothesis 2***). In order to do that, I analysed how the number of positive and negative features affected voting intention (Study 3) or how positive and negative competence- and morality-related features affected candidate evaluation (Study 4). I was also interested in how well people differentiate among a few positive options and among a few negative options (***Hypothesis 3*** and ***Hypothesis 4***) and how this differentiation is affected by the framing of a decision in terms of choice or rejection (***Hypothesis 5***). For all of these hypotheses, I predicted that people would see greater differences among positive options than among negative ones. Furthermore, I assumed that people would better differentiate between favourable and unfavourable candidates in choice rather than in rejection condition. Testing the effect of comparison standards, I also predicted

that people would find similarity to an ideal politician as a better criterion for voting decisions than the candidate's similarity to a bad politician (***Hypothesis 6***). Finally, in order to investigate the relationship between similarity judgements and voting intention, I predicted the affective evaluation of a political candidate to be an important mediator of that relationship ***(Hypothesis 7)***. By doing so, I also wanted to introduce the affective component into the research on frames or reference and similarity judgements – an element which has been quite often forgotten (Druckman & McDermott, 2008). The above described predictions were empirically tested in a series of seven empirical studies. Below I present the discussion of most important findings of my research together with their theoretical implications. After that, I will discuss the theoretical and practical implications of my findings. Finally, I will present study limitations and propose potential directions for future research.

7.1. The effect of frames of reference and valence framing on candidate evaluation

One of the aims of my research was to investigate how small changes in the way a decision task is formulated affect candidate evaluation and candidate preference. Based on the research on contrast effects (Lau, 1982) and the findings on valence framing (Bizer et al., 2011; Bizer & Petty, 2005, 2012), I expected negative framing to have a more prominent effect compared to positive framing (***Hypothesis 0***). The hypothesis was tested in Study 1 and Study 7.

The aim of the **Study 1** was to test if the evaluation of the same candidate would be different depending on whether the candidate was compared to an ideal or bad politician. Respondents had to reflect about a politician (Barack Obama) and compare him to an ideal or bad politician. It was expected that he would be better evaluated while compared to a negative than a positive frame of reference. The results of the experiment provided evidence

for these predictions. Additionally, the study showed that when Barack Obama was juxtaposed against a bad politician, his evaluation increased compared to the initial evaluation made before participants were asked to reflect about either an ideal or bad politician. The findings were interpreted with regard to the inclusion/ exclusion model proposed by Bless and Schwarz (Bless & Schwarz, 2010; Schwarz & Bless, 1992a, 1992b) which predicts how the inclusion or exclusion of certain information leads to assimilation and contrast effects and resulting differences in target evaluation. Using this framework to explain the findings of Study 1, it can be said that a higher evaluation of Barack Obama after the activation of a negative category was a result of the exclusion of features characteristic for a bad politician from the description of a former American President. Furthermore, in line with the majority of conducted studies, the experiment pointed to a stronger effect of negative comparison standards.

The aim of **Study 7** was to test how the framing of a decision in terms of a choice or rejection affected the perceived difference between two candidates presented in a decision task. In order to do that, I designed three candidate profiles that differed in the extent of their favourability (the positive, negative and neutral candidate). Respondents were presented with two candidates – either the neutral and the positive one or the neutral and the negative one. The results of the study provided evidence for anticipated effects, showing that decisions framed in terms of rejection were more certain than those framed in terms of choice. The findings fit well with the research on negative valence framing (Bizer & Petty, 2005, 2012; Bizer et al., 2013), where the higher certainty of negatively framed decisions was attributed to a more thoughtful processing of negatively framed options. Furthermore, in Study 7 I also investigated the extent of differences between the neutral candidate and the positive one as well as the neutral candidate and the negative one. More prominent differences were expected

in the pair of a neutral and positive candidate. The study provided evidence for such claims, however only in rejection condition, once again pointing to a stronger effect of negative valence framing on political decisions. In other words, the experiment showed that respondents differentiated better between the neutral and positive candidate if they were asked to reject the worse candidate from the pair but they did not see much difference between them if the decision was framed in terms of choice.

This observation points to an interesting interplay between the differentiation between favourable and unfavourable options and the manner in which a decision was framed. On the one hand, the fact that participants saw greater differences between the neutral candidate and the positive one follows the predictions on the better differentiation among favourable options compared to a less prominent difference between unfavourable options (***Hypothesis 4***). Although negative features were repeatedly found to be stronger (Fiske, 1980; Koch et al., 2016a; Peeters & Czapinski, 1990; Skowronski & Carlston, 1989), positive features are likely to be more meaningful in situations in which people have to determine which of the available options is the best or at least acceptable. However, if that was the case, people would see greater differences between the neutral and positive candidates in the situation when the decision was framed positively (i.e. choice) than if options were presented in terms of rejection (***Hypothesis 5***). Such an effect, however, was not found. The observation that respondents differentiated well between the neutral and the positive candidate in negative framing but they did not see much difference between the candidates in positive framing can be explained with the research on gradients of approach and avoidance responses which typically shows higher gradients for avoidance tendencies (Brown, 1948; Liberman & Förster, 2008). Possibly, the effect could be also attributed to a relatively low favourability of the candidate characterized by five positive and five negative features – if so, the neutral

candidate was not perceived as "a good enough" option which was the reason for the stronger rejection of the neutral candidate when compared with the positive profile. The fact that none of the candidates was preferred in the choice condition suggests that none of the options was perceived as attractive enough to be favoured over the other.

A further analysis showed that the certainty of a decision to choose or reject the neutral candidate when paired with his negative or positive counterpart could be best predicted by the extent to which the neutral candidate was similar to the image of an ideal politician – the higher the similarity to an ideal politician, the more likely the candidate was chosen and the less likely he was rejected. Importantly, however, neither the similarity of the other candidate to the prototype nor the degree of similarity between two compared candidates influenced the certainty to choose or reject the neutral candidate. Contrary to expectations, the results of Study 7 did not find the similarity between two available options to be a significant predictor of decision certainty. However, the experiment once again corroborated the importance of comparison standards in the evaluation process and pointed to the similarity to a positive frame of reference as a relevant criterion for that evaluation.

7.2. The predictions of the contrast model of similarity and its empirical verification

The goal of this dissertation was to investigate the relations between the positive and negative qualities of a politician and the way he or she is evaluated. Although numerous studies analysed the effect of positive and negative information on impression formation (Anderson, 1965; Fazio, Pietri, Rocklage, & Shook, 2015; Fiske, 1980; Martijn, Spears, Van Der Pligt, & Jakobs, 1992; Schwarz & Bless, 1992a, 1992b), the relationship between feature valence and similarity judgements is much less explored. In my investigations I adopted the contrast model of similarity to analyse how additional positive and negative information

affect similarity judgements, depending on whether a political candidate is compared to an image of an ideal or bad politician. To my best knowledge, such an approach has never been used to explain positive-negative asymmetry. The model was developed by Amos Tversky (1977) and it defined the similarity between two objects as a linear combination of the measures of their common and distinctive features. According to the model the similarity (*S)* between objects *a* and *b* can be calculated by the following formula (presented as Equation 2 in section 3.2):

$$S(a,b) = \frac{f(A \cap B)}{f(A \cap B) + \alpha f(A - B) + \beta f(B - A)}$$

where $A \cap B$ stand for features common to objects *a* and *b*; *A*–*B*, stands for features present in *a* and not present in *b*; and *B* – *A* stands for features present in *b* and not present in *a*. The operator *f* represents some linking function and α and β stand for weighting coefficients and reflect the importance that a person assigns to a particular subset of features. The model can be simplified into (Equation 3 presented in section 4.5.1.)

$$S(a,b) = \frac{x}{x + y}$$

where *x* is the number of common features and *y* is the number of distinctive features. Similarity between two objects is a non-linear function of two parameters: *x* – the number of features common to both *a* and *b*, and *y* – the sum of distinctive features, that is features that are only in *a* and features that are only in *b*. In the studies presented in this dissertation, I applied the model to explain how people evaluate different political candidates. In all experiments the participants could see descriptions of politicians. An exception to that rule was Study 1 where the participants reflected on features characteristic for a real politician. All those politicians could be compared to an ideal politician or to the worst possible

candidate. Tversky's contrast model of similarity allows to predict how the change in an image of a candidate changes his similarity to the best or the worst possible politician. It is obvious that the similarity to an ideal or bad politician depends on the proportion of the good and bad features of an evaluated candidate. But which strategy could be better if someone, for example a specialist in political marketing, wants to make an evaluation of a candidate more positive? Would it be better to concentrate on showing positive traits of this politician or convincing the voters that he does not have as many negative traits as they may have thought? The model predicts that the effectiveness of the adopted strategy depends on the proportion of good and bad features of a candidate and the frame of reference, that is a standard of his or her evaluation. This prediction was stated in section 4.5.2. in the form of Equation 4:

$$\text{eval2}\,(a) = (f_1\,(\text{eval}\,(a)) + f_2\text{sim}\,(a, b)) + f_3\,(\text{eval}\,(b)) + f_4\,(\text{context})$$

where:

eval2(a) is the overall evaluation of candidate,

eval(a) – the initial evaluation of candidate a, which is based on the ratio of his negative and positive features,

sim(a,b) – similarity between candidates a and b,

eval(b) – the evaluation of candidate b who is a standard of reference for candidate a,

context – general factor for contextual effects such as whether the decision is framed as choice or rejection or some other features,

functions f_1 to f_4 stand for the salience or importance of each factor,

According to Equation 4 the overall evaluation of a candidate depends on his initial, that is context-free, evaluation as well as on the similarity between a and b. Although the similarity, as calculated by Equation 3, can have any value between 0 (both a and b have only

distinctive features) and 1 (*a* and *b* have the same set of features), the three particular ranges are of theoretical importance.

- objects *a* and *b* have the same amount of common and distinctive features, that is

  $x = ½ (x+y)$ and $S = 0.5$

- objects *a* and *b* have less than half of common features, that is

  $x < ½ (x + y)$ and $S < 0.5$

- objects *a* and *b* have more than half of common and distinctive features, that is

  $x > ½ (x+y)$, and $S > 0.5$

As similarity calculated with Equation 3 is not a linear function, then the effect of adding common and distinctive features to both objects has a non-linear effect on similarity. Consider, for example the plots on Figure 11 which presents the effect of adding to the feature set of candidate *a* features that belong to candidate *b*. The plots represent three levels of similarity (on the basis of values used in Study 2):

S = 0.5: objects *a* and *b* had 5 common and 5 distinctive features,

S < 0.5: objects *a* and *b* had 5 common and 10 distinctive features,

S > 0.5: objects *a* and *b* had 10 common and 5 distinctive features.

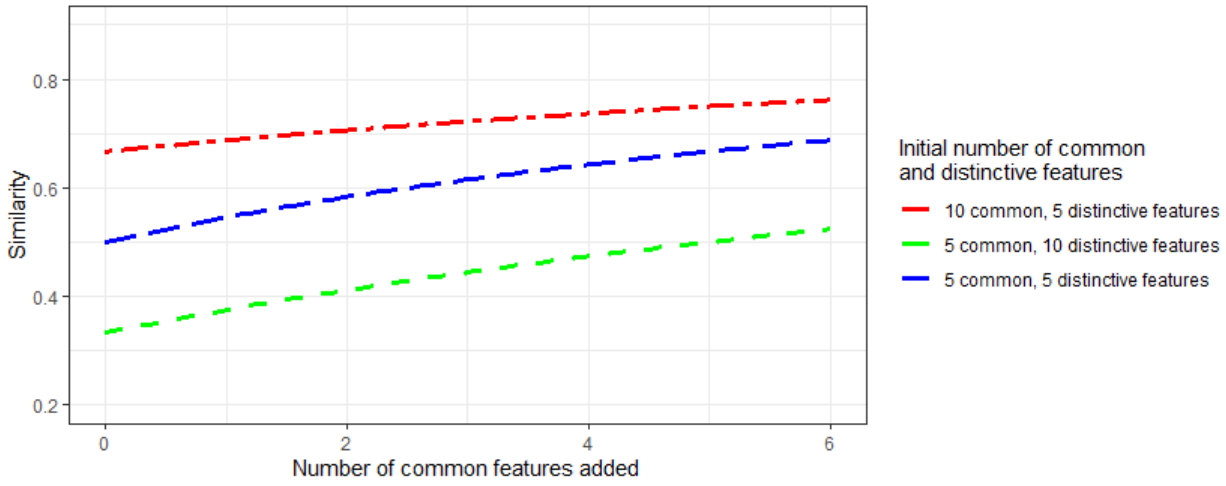

Figure 11: Changes in the similarity between candidate a and b as a function of the number of adding to the profile of candidate a new features that are present in the description of candidate b. The lines represent the initial three versions of initial proportion of common and distinctive features.

As it can be inferred from Figure 11 (see also detailed analysis in section 4.5.1) the addition of features common to both candidates increases their similarity to a higher extent only if the initial number of common features is small (5 out of 15). The effect of adding common features is less prominent when the initial proportion of common features equals 0.5 and almost negligible when both candidates already have a high proportion of common features (10 out of 15).

Adding features common to both candidates is one of the strategies that can be used in order to increase their similarity. The other would be reducing the number of distinctive features. Again this effect depends on the initial proportion of common and distinctive features. Consider the same three cases as presented in Figure 11 but this time with a gradual reduction of distinctive features. The plot presenting the effect of this procedure applied to the same three candidates is presented in Figure 12.

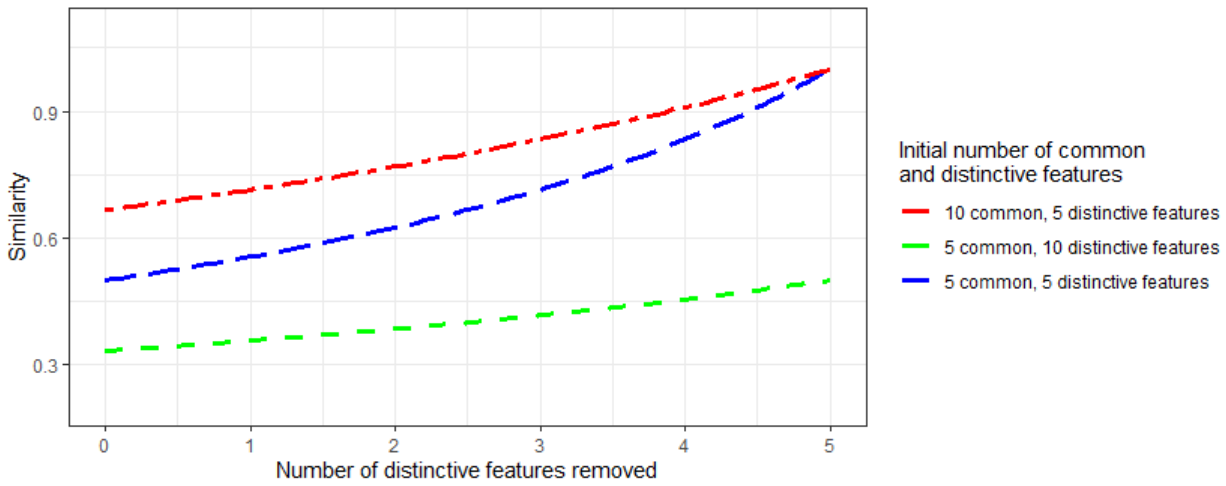

Figure 12: Changes in the similarity between candidate a and b as a function of the number of deleting distinctive features from the profile of one candidate. The lines represent the initial three versions of initial proportion of common and distinctive features.

The effect of removing distinctive features is different from the effect of adding common features. As it seems the effect of removing distinctive features is strongest when the number of distinctive features is relatively small (5 out of 15) while the removal of distinctive features has almost no effect when there are many such features (10 out 15). Furthermore, the effect of adding common or removing distinctive features is not symmetric when the similarity between two objects equals 0.5. Consider the lines representing changes in similarity for the initial number of 5 common and 5 distinctive features. If the number of common features is extended by 3 then the similarity changes from S=0.5 to S=0.61 (5+3/10+3). However if from the same set, 3 distinctive features are removed then similarity increases from S=0.5 to S=0.71 (5/10-3).

The model allows to make predictions about the effect of additional common and distinctive features added to the set of features of object *a* and the set of features of object *b*. The model stipulates that if the object and referent have more distinctive features than

common ones (that is when $S < 0.5$), then operations on common features will exert a stronger effect on similarity compared to the same operations conducted on distinctive features. If, however, the object and the referent have more common features than distinctive ones ($S > 0.5$), then the operations on distinctive features lead to greater differences in similarity compared to the operations on common features. Furthermore, if the object has the same number of common and distinctive features ($S = 0.5$), the distinctive features are predicted to be stronger.

In my research, I analysed how common and distinctive features added to the object of comparison (target) changed its similarity to the referent (comparison standard). The object of comparison was always a candidate profile characterised by various positive and negative features. The referent was either the image of a prototypical ideal politician or a bad politician. The valence of the referent determined which features were common and which were distinctive, so that if a candidate was compared to an image of an ideal politician, favourable traits were common, whereas unfavourable were distinctive. The reverse was true for a negative referent.

Thus, the model allows to make predictions about the effect of additional positive and negative features on similarity ratings depending on the ratio between favourable and unfavourable features characterizing the candidate as well as the valence of the reference point (either an ideal politician or bad politician). If the object has the same number of positive and negative features ($S = 0.5$), the model predicts a more prominent effect of distinctive features (additional negative features stronger for comparisons to a positive referent and additional positive features stronger for comparisons to a negative referent). If the object has more negative features than the positive ones, the model predicts a stronger effect of positive features on the object's similarity to the positive referent ($S < 0.5$) and a

weaker effect on its similarity to the negative referent ($S > 0.5$). If, however, the object has more positive features than the negative ones, the opposite will be true, that is positive features will have a weaker effect on the object's similarity to the ideal referent ($S > 0.5$) and a stronger effect on its similarity to a bad category ($S < 0.5$). These predictions were verified in ***Hypothesis 1*** which was tested in Study 2, Study 3 and Study 4.

In **Study 2** I investigated the predictions of the model for **S = 0.5 (*Hypothesis 1c),*** that is for an object which has the same number of positive and negative features with the referent (either an ideal or bad politician). In order to do that, I created three candidate profiles that differed in their favourability. Each participant read only one candidate profile. Furthermore, I manipulated the frame of reference, so that half of the participants evaluated how similar the candidate was to the image of an ideal politician, whereas the other half estimated the candidate's similarity to a bad politician. The responses for the evaluation of a neutral candidate (characterized by 5 positive and 5 negative features) were later compared to the evaluations of a candidate who had either 10 positive and 5 negative features or a candidate characterized by 5 positive and 10 negative features. If the predictions of the model were correct, distinctive features should be stronger. More precisely, I predicted that if participants were asked to evaluate the candidate's similarity to an ideal politician, additional negative features would result in a greater decrease in candidate evaluation compared to an increase resulting from additional positive features. For the negative comparison standard, I expected positive features to have a greater (positive) effect on candidate evaluation compared to the (negative) effect of unfavourable features.

The results of Study 2 partially supported predicted effects, showing that additional negative features were more effective in changing candidate evaluation (leading to a decrease in candidate evaluation) if participants were to reflect about an ideal politician. Thus, the

findings of the study suggest that all things being equal, negative features are stronger than the positive ones. Alternatively, no effect of additional positive features can be attributed to framing manipulation (that is the activation of a category of either an ideal or bad politician). If so, the effect may depend not only on the valence of additional features but also the valence of the activated category. It is possible that the image of a bad politician that people had to reflect on was more unfavourable than the image of an ideal politician was favourable. Thus, due to the extremity of the negative frame of reference candidate profiles that were presented later were evaluated as more similar to each other.

The predictions of the contrast model of similarity for candidates whose image was either favourable or unfavourable (**S > 0.5** or **S < 0.5; *Hypothesis 1a*** and ***1b***) were tested in **Study 3** and **Study 4.** According to the model, additional positive features should increase the evaluation of an unfavourable candidate but would not affect the evaluation of a favourable candidate, whereas additional negative features would lead to a greater decrease in candidate evaluation for favourable candidates but would not change the evaluation of unfavourable ones. In order to test these predictions, I created different candidate profiles that differed in the extent of their positivity and negativity. The unfavourable candidates had either two or four positive features as well as seven or nine negative features, whereas the favourable candidates were characterized by either seven or nine positive features and two or four negative features. Respondents were either asked to evaluate a randomly assigned candidate description (Study 3) or were presented twice with the description of the same candidate – once the "original" candidate and later with his "upgraded" or "downgraded" version (Study 4). Candidate profiles were organized into pairs and compared in such a way that the second candidate had either two additional positive or two additional negative features more than the first one.

The results of Study 3 provided evidence for the predictions concerning negative features, showing that additional negative features decreased the evaluation of favourable candidates but did not hurt the image of already unfavourable candidates. No effect of additional positive features was found. The results of Study 4 corroborated the findings of Study 3 on the effect of negative features, additionally showing that additional favourable features added to the description of a bad politician increased his evaluation. The difference was attributed to modifications in the study design, so that respondents in Study 3 evaluated individual candidate profiles which were later compared between groups, whereas participants in Study 4 were presented with a description of one candidate whose image either slightly improved or deteriorated. Thus, respondents in of Study 4 were more likely to expect some change in a candidate's image. Furthermore, the study showed a stronger effect of positive competence-related features and negative morality-related features.

7.3. Going beyond the contrast model of similarity

7.3.1. The comparison of the predicted and observed similarity measures

One of the advantages from the design of experiments in this dissertation is the chance to compare the theoretical predictions of the contrast model for similarity to an ideal and bad politician with the empirical results observed in the experiments. The predicted and observed similarity values analysed in **Study 3** were presented in Figure 4 which I provide once again below (Figure 13).

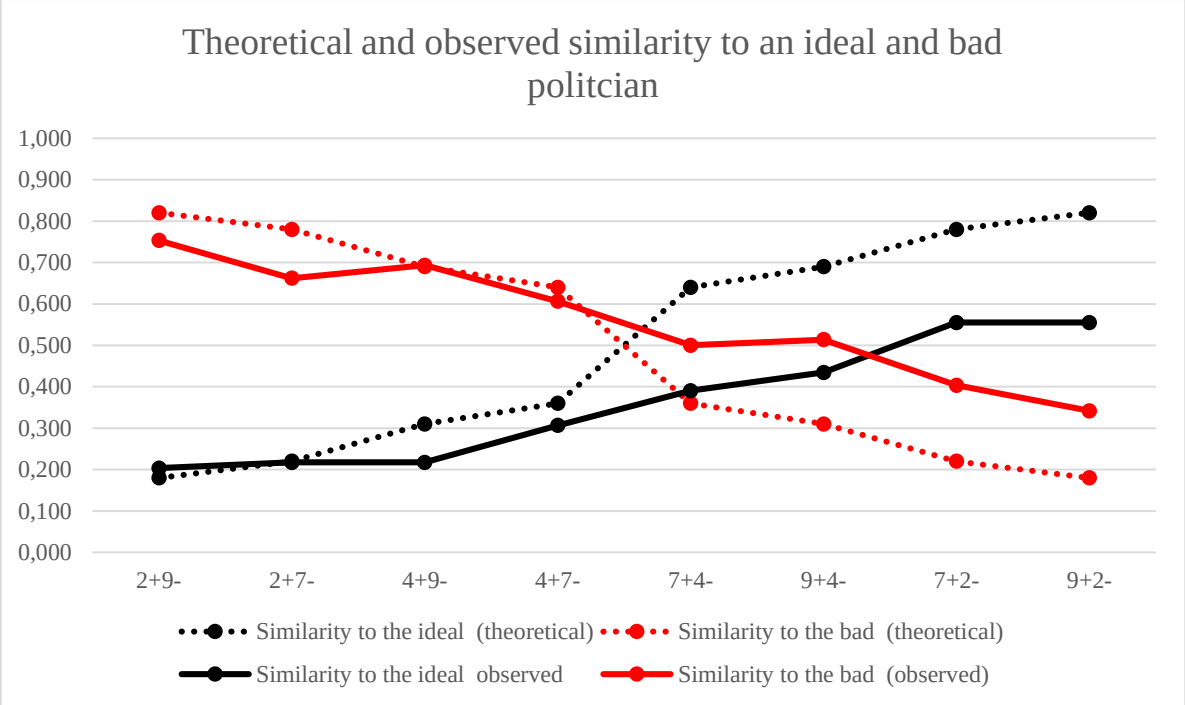

Figure 13:Theoretical and observed similarity to an ideal and bad politician for candidate profiles which differ in the number of positive and negative features that characterize them. The dotted lines represent the theoretical predictions, whereas the solid lines represent the empirical findings. The black lines show similarity to an ideal politician and the red lines similarity to a bad politician.

As visible in Figure 13, the theoretical predictions correspond well with the empirical measures of similarity for unfavourable candidates (as shown by a close relationship between the dotted and solid lines for similarity measures on the left side of the chart). However, for candidates with more positive than negative characteristics, there is a significant divergence of the empirical measures from the values predicted by the contrast model of similarity (as shown by the divergence of solid and dotted lines on the right side of the chart). Additionally, the findings show that for positive candidates, their actual evaluations are less favourable than it would follow from the model. Their similarity to an ideal politician is significantly

lower than expected, whereas their similarity to a bad politician is significantly higher than it would be predicted. Importantly, this pattern of results was found in all other experiments, making the observed effects more robust (see Figure 7 for Study 4, Figure 9 for Study 5, and Figure 10 for Study 6). Furthermore, similar results were found regardless of whether the candidates differed in the number of positive and negative features (Study 3 and Study 4) or the extent of their positivity negativity on a positive-negative continuum (Study 5 and Study 6).

The effect can be explained with regard to the distinction into sufficient and necessary conditions for the occurrence of an event. A necessary condition is one which must be present in order for the event to occur but it does not guarantee the event, while a sufficient condition is a condition that will produce the event. For instance, a voter may believe that a good politician should be well-educated and effective, have experience in domestic matters and be a good speaker. Furthermore, it would be good if he or she was diplomatic, had experience in foreign matters and get along with people. It would be even better if he or she was attractive. The list goes on and all these features create necessary conditions for an ideal politician. The set of these features is potentially limitless, as hypothetically ideal candidate cannot be too good. Furthermore, it is rather unlikely that a voter has a sufficient condition to support a candidate (e.g. "I will vote for any candidate as long as he has PhD in political sciences"), although anti-candidate voting seems to be an exception (e.g. "I will vote for any candidate as long as he/ she is not from the X party"). The situation looks, however, different when one thinks about features of a negative politician. Here, the list of necessary conditions not to vote for someone is much shorter. For instance, it might be enough that a candidate was involved in a scandal, had an affair or lied in his/ her financial statement. Even if none of the conditions is sufficient (e.g. a voter has a rule "I will not vote for a candidate who

lies"), it is easier to fulfil criteria of a "bad" or "not good enough" politician than to collect all the points necessary for a "good enough" or "very good" candidate. As Figure 13 suggests, the chances of reaching "the ideal" by a favourable candidate are very slim, whereas it is not so difficult for an unfavourable candidate to sink low enough to be perceived as an extremely bad politician.

As shown by research on positivity bias people generally construe, perceive and remember reality in a positive manner, including a tendency to approach unknown entities (be that other people, events or objects) with positive rather than neutral expectations (Hoorens, 2014). Additionally, positive categories were found to be more common and serve as default options for decision-making (Rozin et al., 2010; Sears, 1983). As a result, any negative events or information will be approached more carefully and analysed using more rational strategies predicted in normative models of rationality (Kahneman, 2011; Lewicka, 1993). Although the feature-based approach to similarity proposed by Tversky (1977) accounts for many irrationalities in similarity judgements, the ratio model of similarity is still rather normative and does not account well for such aspects as feature valence and positive-negative asymmetry. Thus, the results of my research show that although people are rather rational in their evaluations of what is bad, they are more subjective (and potentially emotional) when it comes to the judgements of what is good.

7.3.2. The differentiation among positive and negative candidates

Furthermore, based on the theoretical predictions of the contrast model of similarity, the differences among a few negative options should be the same as differences among their positive counterparts. In other words, the differences within the set of negative options should be the same as the differences within the set of positive options. However, taking into consideration that people have different motivations and adopt different mind-sets when

dealing with positive and negative objects, I expected that the evaluations of unfavourable options would be more extreme, with bad, worse and extremely bad candidates evaluated similarly and very low, whereas the evaluations of good, better and extremely good options would be more differentiated and gradual (***Hypothesis 3***). Furthermore, I predicted that positive options would be less similar to each other (i.e. there would be greater differences between them) than negative options (**Hypothesis *4***). The extent of candidate differentiation was analysed in a series of experiments, from which Study 3, Study 4, Study 5 and Study 6 addressed the research problem directly. The conducted studies generally provided evidence for the expected effects.

In **Study 3** and **Study 4** I tested how well people differentiated among favourable and unfavourable candidate profiles presented in a descriptive manner. The unfavourable candidates had either two or four positive features as well as seven or nine negative features, whereas the favourable candidates were characterized by either seven or nine positive features and two or four negative features. The candidate profiles were organized in pairs in such a way that the second candidate from the pair had two additional positive or negative features more than the first candidate. In both studies, the perceived differences between positive candidate profiles (7+2-, 7+4-, 9+2- and 9+ 4-) were much more prominent than the marginal (if at all significant) differences between negative candidate profiles (2+7-, 4+7-, 2+9-, 4+9-). As the same positive/ negative features were added to favourable and unfavourable candidates, the effect cannot be attributed solely to the stronger effect of negative features as such but also to the favourability of a candidate profile. Furthermore, the evaluations of negative candidates were more extreme and generally very low (for example with candidates 2+9-, 2+7-and 4+9- having the same subjective similarity to an ideal politician, despite their objective differences). The evaluations of positive candidates, on the

other hand, were less distributed and oscillated around the median value. For instance, the best possible candidate in the set was described with nine positive and two negative features. According to the theoretical predictions, he should be very similar to an ideal politician (S_{ideal} = 0.81) and different from a bad politician (S_{bad} = 0.19). The objective differences, however, did not correspond to the subjective measures which were less favourable with S_{ideal} = 0.555 and S_{bad} = 0.342. Such a result suggests that even in the case of an objectively very good candidate, there is still much room for improvement, whereas the evaluations of negative candidates are more extreme and less differentiated.

The problem of the differentiation among favourable and unfavourable candidate profiles was also analysed in **Study 5** and **Study 6** , where instead of manipulating the number of features characterizing the politician, I changed the extent of his/ her positivity or negativity. Candidate profiles were presented in a chart-like form encompassing 6 criteria relevant for the evaluation of political candidates (such as education, experience, or morality). The profiles differed in the extent to which the politicians fulfilled particular criteria (ranging from -10 scoring extremely low on this feature to +10 scoring extremely high on this feature). The worst possible candidate could score as low as -60, whereas the best possible candidate could score up to +60. The use of such a form of presentation allowed me to precisely control the degree of objective differences between candidates (as measured with scores) and analyse how these differences are subjectively perceived by respondents. Additionally, the use of scales (with precisely defined minimal and maximal values) allowed me to investigate the differences among candidates who could be described as closed sets (contrary to open sets represented by narrative descriptions).

In Study 5, seven candidate profiles whose scores equalled -30, -20, -10, 0, +10, +20 and +30 were created and respondents were asked to evaluate them with regard to the

candidate's similarity to an ideal and bad politician, overall evaluation and voting intention. Although the conducted analyses generally followed the expected trends, the results did not reach required significance level. The lack of expected effects could be attributed to a rather complex and cognitively demanding presentation of candidate profiles. Thus, in Study 6 , I tested the predicted effects in a simpler study design (using five candidate profiles instead of seven, increasing the difference between candidates from 10 to 24 points as well as using fewer dependent variables). The experiment provided evidence for all hypotheses tested. As expected, an increase in feature negativity did not deteriorate the evaluation of unfavourable candidates, whereas an increase in feature positivity led to a noticeable improvement in the evaluation of favourable candidates. Study 6 showed that candidate +48 was perceived as significantly more similar to an ideal politician than candidate +24. A parallel effect, however, was not observed for candidates -24 and -48 who were equally dissimilar from an ideal politician and who were evaluated extremely low on the similarity measure (with Δ = 0.18 between candidates, on 11-point scale). The evaluation of positive candidates was much more differentiated, with candidate +24 scoring 1.81 points lower than candidate +48.

Thus, the results of four empirical studies (Study 3, Study 4, Study 5 and Study 6) provided evidence for a better differentiation between positive options than the negative ones. A similar effect was also observed in Study 7 on the framing of decisions in terms of choice and rejection. The experiment showed that people were more certain of their decisions to reject the neutral candidate when he was paired with the positive one. Importantly, no differences in the certainty to choose or reject one of the candidates was observed in the pair of a neutral and a negative candidate. A similar pattern of findings was observed in other research. For instance, analysing the effects of mental addition and subtraction, Dunning and Parpal (1989) found that people perceived more impact if the issue was presented in a positive

frame (e.g. a passed exam) than if it pertained to a negative category(a failed exam). To similar conclusions came Dhar, Nowlis and Sherman (1999) who found preference shifts to be slightly greater for decisions concerning positive rather than negative options. One of potential explanations for a better differentiation between positive options may be a higher motivation to look for differences among a few favourable options than among unfavourable ones. In other words, people are likely to be more motivated to pick the best possible option from other "good" ones than to look for differences between options among which none is actually attractive. Such an assumption is further supported by the fact that the perception of difference was limited to evaluations concerning candidate's similarity to an ideal politician and was not present for the negative category.

7.3.3. Various instances of positive-negative asymmetry in the evaluation of political candidates

The findings of my research can be discussed with regard to density hypothesis (Alves et al., 2015; Koch et al., 2016a; Unkelbach, 2012; Unkelbach et al., 2008) which predicts that positive information items are more similar to each other (and thus their structure is more dense), while the structure of negative information is more differentiated. As a result, negative information items are said to carry more meaning and be more informative than their positive counterparts. The results presented here provide evidence for that, showing negative features as more potent, especially for situations in which the object has the same number of positive and negative features or when it has more positive features than negative ones.

However, as shown in my studies, the effect of negative features is dependent on the internal characteristics of the object (i.e. the extent of its positivity/ negativity), the characteristics of other elements presented in a decision-making task (i.e. their positivity/

negativity) as well as motivational factors. The stronger effect of additional negative features was found for situations in which these items were added to the sets containing many favourable features and not in a situation when the sets generally consisted of negative attributes. Thus, the stronger effect of additional negative features was directly linked to a better differentiation between positive options. The fact that people see more difference between favourable items and less of a difference between the unfavourable ones can be explained with their higher motivation to pick the best possible option from other "good" ones than to look for differences between options among which none is actually attractive.

Negative features typically led to bigger differences between candidate profiles than their positive counterparts. The results of regression analyses conducted in **Study 3** found negative features to be a much better predictor of candidate's affective evaluation and voting intention compared to positive features. However, this negativity effect was typically restricted to situations in which respondents were asked to evaluate the candidate with regard to his/ her similarity to an ideal politician and was not present if they were asked to assess a candidate with regard to his similarity to a bad politician (see for instance **Study 2** and **Study 6**).

Additionally, the results of regression analyses conducted in **Study 5** found similarity to an ideal politician to be a better predictor of voting intention (with a non-significant effect of similarity to a bad politician). Such a finding suggests that a bad politician will be rather perceived as very dissimilar from an ideal politician than similar to a bad one. Thus, the results show that a stronger effect of negative features will be most likely evaluated from the positive standpoint. In other words, it would seem that to know how bad something is, people will think about how distant it is from what is good. Furthermore, when making the general evaluations of objects, its final assessment is likely to be infused with some affective

valuation. The results of conducted mediation analyses (**Study 3**) showed affective evaluation to be a mediator in the relationship between similarity judgements and voting intention. Additionally, as hypothesized, the mediating effect turned out to be slightly stronger for the positive frame of reference, that is for a situation in which a candidate was compared to an ideal politician (rather than the image of a bad politician). Such a result can be explained with earlier findings showing a positive category to be a default option for decision-making. Furthermore, the results of mediating analyses showed that the reliance on affect in voting preferences was much more prominent for the analysis of the profiles of favourable candidates than for the unfavourable ones, which again suggest that people adopt more rational strategies when analysing negative options and more subjective criteria and heuristic strategies in the analysis of positive options.

To conclude, the findings suggest that the effect of positive and negative information on object evaluation is affected by such factors as the internal characteristics of an object (the extent of its positivity, negativity), the valence of other available options, comparison standards, framing, different motivations and mind-sets when analysing positive and negative objects. Joining these various approaches and perspectives on positive-negative asymmetry and similarity judgements in one theoretical framework is beneficial to the studies on impression formation, positive-negative asymmetry and framing. Another important factor are the theoretical predictions that come from the contrast model of similarity concerning the effect of additional positive and negative information on object evaluation depending on its favourability. The comparison of the theoretical and predicted similarity values shows that although the model fairly well describes the evaluations of unfavourable candidates, it is less accurate for the evaluations of favourable candidates. From that follows that whereas the judgements about what is bad follow the rational and normative predictions, the judgement

about what is good is more subjective. Such a finding contributes to the studies on similarity judgements, rationality and information processing.

7.4. Practical implications

The findings of the present dissertation offer numerous practical implications which can be adopted to such areas as consumer research, marketing (especially political marketing) and advertising (especially comparative advertising).

First, I have shown that framing may be a powerful tool in shaping people's attitudes and choices. Adding to the discussion on numerous types of framing (Chong & Druckman, 2007a; Hallahan, 1999; Scheufele & Tewksbury, 2007) and their effectiveness (Druckman & Parkin, 2005; Entman, 2007; Iyengar & Kinder, 2010), I showed that a mere activation of the categories of "an ideal politician" and "a bad politician" as frames of references may lead to changes in the affective evaluation and intention to vote for political candidates. This observation suggests that even small changes in the wording of candidate profiles or news presentations may lead to noticeable changes in candidate evaluation, which makes framing a powerful tool of persuasion.

Second, the findings provide a few interesting observations concerning negativity effect in the evaluation of political candidates. Corroborating earlier studies conducted by Bizer and others (Bizer & Petty, 2005, 2012; Bizer et al., 2013), I showed the powerful impact of negative valence framing, that is a stronger effect of decisions framed in terms of rejection compared to those presented as choice. This finding fits well with the research on negative voting or anti-candidate voting in which voters cast their votes against a disliked candidate (party) rather than in favour of the preferred candidate (party) (Kernell, 1977; Sigelman & Gant, 1989). On the one hand, such practices are quite common during the elections when

particular parties urge the electorate to go against the opposing party. The 2016 presidential elections in the United States are a good example of such practices as many voters who decided to support Hilary Clinton did so not because they approved of her political manifesto but rather because they opposed Donald Trump. A similar pattern can be also found in a long-standing conflict between two major political parties in Poland, in which the representatives of both parties encourage their voters to vote against the other party. However, such practices are not limited to political battles and recent news reviews give plenty of evidence that people are more vocal about the incidents that they disapprove of than the ones they are in favour of (e.g. the recent strikes in the US against COVID-19 preventive measures or the protests against racial discrimination after the death of George Floyd).

Furthermore, my findings showed that overall negative features have a stronger effect on candidate perception compared to positive features (although the effect is especially visible for candidates who are generally perceived favourably). Politicians, spin doctors and PR specialists can use this information when planning communication strategy. A general conclusion seems to be that having positive traits associated with one's image is not as important as not having negative traits associated with one's name. From that follows that a reasonable suggestion would be to recommend candidates to engage in communication that would stress their opponent's shortcomings rather than to focus on the promotion of their own strengths. A quick look at the political stage and often vicious debate battels show that politicians have learnt this lesson long time ago. Once again, the 2016 presidential elections in the United States are a good example as they were found to be unequalled when it comes to the number of negative advertisements targeted against Donald Trump and Hilary Clinton (Tedesco & Dunn, 2019). Still, numerous researchers have doubted in the effectiveness of negative advertising (Jain, 1993; Lau, Sigelman, Heldman, & Babbitt, 1999; Lau, Sigelman,

& Rovner, 2007; Meirick, 2002), pointing to its pernicious effect on the image of a candidate using it, the so called backlash effect (Roese & Sande, 1993).

My findings add to the long-standing discussion on the effectiveness of negative advertising and negative comparative advertising. Although it is not my intention to encourage practitioners to use negative advertising to win votes, I would suggest that in some cases taking advantage of negative facts about one's opponent may actually be a successful strategy. The trick seems to be able to separate oneself form the reputation of a "mudslinger", that is to have many negative things known about a competitor without having to bring those negative facts to light oneself (Lau, 1982). The use of intermediaries or agents in forms of testifying witnesses, journalists, media sources or organizations such as WikiLeaks seem to be disgraceful but effective ways of dealing with this impossible position.

Furthermore, the results of conducted studies have shown that a stronger effect of negative features is not a general rule but rather it is restricted to situations in which a candidate is perceived generally favourably. If, however, a politician has more flaws than positive characteristics, additional negative facts will not have a detrimental effect on their image. This observation can explain why negative information is more harmful to a relatively decent politician who happened to go astray in some matter than to a person very negatively received by the public. Using the examples of real-life politicians, it could be said that information about an alleged affair would be more harmful to Bill Clinton or Barack Obama than to Donald Trump or Silvio Berlusconi who by many are perceived as bad politicians. As news releases prove, negative rumours and information about improper behaviour of these politicians do not seem to have an impact anymore.

Finally, it is important to remember that the findings of this research do not have to be used solely as a weapon against a political opponent. Instead, they can be adopted to

promote one's image, depending on whether one's image is positive or negative. The adoption of the contrast model of similarity explains well when it is more reasonable to try to eliminate flaws and when it is better to focus on building one's positive characteristics. Although the presented research focuses on the perception of political candidates, its findings may be generalized to other settings and brands such as consumer marketing, brand management or personal branding.

7.5. Limitations and directions for further research

Most of research in social psychology suffers from problems with unrepresentative sampling. The seven studies presented above are no exceptions. As participants for the majority of experiments were recruited from various Polish universities (apart from Study 5 which used MTurk population and Study 7 where respondents were recruited via various Internet fora), non-probability sampling was adopted. As such, the results are neither representative of the Polish society nor students from other countries. Although it may be a potential limitation, the research on the generalizability of survey experiments and MTurk studies showed that convenience sampling did not produce smaller effects than generally observed in nationally representative population-based samples (Mullinix, Leeper, Druckman, & Freese, 2015). Furthermore, as the aim of my research was to test more general psychological effects concerning positive-negative asymmetry and similarity judgements, it is rather unlikely that such effects dependent on such demographic variables as gender, age, level of education, income, etc. However, in order to account for any confounding effect of the aforementioned factors as well as political ideology or political interests, participants were randomly allocated to experimental groups.

A further limitation regarding sampling pertains to the use of student samples in psychological research, a practice which has been criticized by some scholars (e.g. Sears, 1986). However, a brief review of studies in leading journals suggests that the use of student samples still remains a common practice in psychological research (Henry, 2008) and has been generally accepted in political science research (Druckman & Kam, 2010; Mullinix et al., 2015). Although I do not think that a student sample poses a serious threat to external validity of my research, I would suggest that further studies try to use other samples, for instance an MTurk population (as in Study 5) which has been shown to be more representative of US population than a typical college sample (Berinsky, Huber, & Lenz, 2012).

Although sample sizes used in experiments were smaller than the ones recommended in a priori power analyses calculated with GPower (Erdfelder, Faul, & Buchner, 1996; Faul, Erdfelder, Lang, & Buchner, 2007), post-hoc analyses showed that even with small samples, Cohen's (1992) recommended criteria (i.e. the power of 0.8 and the effect size of min. f = .25, with $p < .05$) were generally upheld (with small deviations around 0.8): for Study 1, power = 0.78, Study 2, power = 0.81, Study 3, power = 0.80, Study 5, power = 0.77, Study 6 , power = 0.79, Study 7, power = 0.76. The only study that deviated from the recommendations was Study 4, with power = 0.64. Although power recommendations were generally followed, it is possible that if larger samples were used, the observed effects would be stronger.

As far as the methodological limitations of my research are concerned, a very precise and rigid control of features used to describe candidates certainly allows for a control of such confounding variables as differences in affective loading or typicality of features. This mathematical precision in the selection of stimuli may, however, lead to low external validity

of findings. Apart from Study 1, all experiments used fictitious candidate profiles that differed in the number of positive and negative characteristics (Study 2, Study 3, Study 4 and Study 7) or the extent to which a candidate fulfilled a given feature (Study 5 and Study 6). Such a study design and material preparation do not necessarily reflect the effects observed in the evaluation of real people and/ or in real decisions made in natural settings. Therefore, further studies should consider using more elaborate candidate profiles presented in a form of short candidate manifestos or news releases.

All the experiments presented above used only one type of a social object, that is a political candidate. Although the predictions concerning the effect of additional common and distinctive features as well as the differentiation between positive and negative features should be valid regardless of the nature of analysed objects, considerable body of research points to differences in the evaluation of social and non-social stimuli (Rudin & Stagner, 1958). From practical point of view, further studies should test the observed effects with regard to consumer products, for instance separately for utilitarian and hedonic goods (Dhar & Wertenbroch, 2000). Additionally, the effects should be compared for political candidates and other social stimuli, accounting for research showing negativity bias in political evaluations (Klein, 1991; Lau, 1982) and general person positivity (Sears, 1983).

Finally, the research did not provide much information on other moderators and mediators of the effect of positive-negative asymmetry in candidate evaluation and similarity judgements. Moderators worth investigating could be political engagement (Krosnick & Brannon, 2006; Maier, Rittberger, & Faas, 2016) or general interest in politics (de Vreese, 2005). Although these variables were controlled for in all conducted studies, no meaningful effects were found. This should be an obvious follow up of the studies presented here.

7.6. Concluding remarks

In my research I investigated various instances of positive-negative asymmetry in political evaluations. Corroborating earlier studies I provided evidence for negativity effect in the evaluations of political candidates. First, I showed that comparisons to a bad politician can increase candidate evaluation due to the contrast that the image of a bad politician produces. Second, I found that people were more certain of their decisions if they were asked to reject a worse candidate than when their task was to choose the better candidate. Third, I showed that negative features were generally stronger than their positive counterparts, so that a final decision to vote for a politician was far more driven by his/ her flaws than merits. Finally, I offered evidence that the effect of additional positive and negative information about a candidate on his/ her appraisal depended on the favourability of candidate image. Additional positive features were likely to improve the perception of an unfavourable candidate but were unlikely to change the evaluation of a favourable candidate. Furthermore, additional negative features could shatter the image of a good politician but did no harm to the image of a bad politician. All things being equal, however, negative features were slightly stronger than their positive counterparts.

Although negativity effect in politics is powerful, it does not mean that people forget about the good things. In fact, due to positivity bias people expect reality to be positive and treat the positive category as a default option for their decision-making. Thus, when evaluating candidates, voters are more likely to judge how similar or different he or she is from an ideal politician than to dwell on his/ her similarity to a bad politician. Furthermore, although it is important to eliminate all the unwanted options (that is decide what is bad), the selection of the best or "good enough" option is also very important. When all available choices are suboptimal, it does not really matter which one is the worst and thus people do

not see much difference between them. If, however, all the alternatives are acceptable, then the selection of the best one gains on importance and, as a result, there are differences between the evaluations of acceptable, good and great outcomes. Furthermore, people seem to be quite extreme in their evaluations of negative candidates but more moderate in their appraisals of favourable candidates. Thus, it would seem that there are far fewer conditions necessary to be deemed as inadequate for the post, whereas it is almost impossible to fulfil all the criteria of an ideal politician as the set of ideal features is potentially limitless.

Comparing the theoretical predictions of how various candidate profiles were similar to the prototypical ideal and bad politician with the subjective evaluations reported by study participants, I found that mathematical forecasts fit well with the empirical findings for the evaluation of unwanted options but there were considerable deviations in the appraisals of favourable options. In other words, positive candidates were perceived as less similar to an ideal politician and more similar to a bad politician than it would follow from the normative model of similarity. From that follows that people are more rational and predictable in their evaluations of what is bad but far more subjective in the appraisals of what is good.

8. Literature

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9. Appendices

Appendix 1: The list of all characteristics generated in the Preliminary Study for the associations to an ideal candidate and a bad political candidate. The associations are written in Polish as they were generated by participants.

Associations	Dominance score	Associations	Dominance score
inteligentny	54	kłamca	63
prawdomówny	51	bez edukacji	26
uczciwy	49	korupcja	26
sprawiedliwy	31	niekompetentny	26
szczery	30	skorumpowany	22
wykształcony	20	głupi	21
bezpośredni	16	kłótliwy	20
dotrzymujący słowa	15	lewicowy	20
obniża podatki	15	ma skrajne poglady	19
prawicowiec	15	nietolerancyjny	19
dobry	13	nieuczciwy	17
otwarty	13	chciwy	16
zaangażowany	13	Kaczyński	14
dbający o dobro obywateli	12	leniwy	14
empatyczny	12	dbajacy o swój interes	13
kompetentny	12	złodziej księżyca	13
Korwin	12	brak kompetencji	11
charyzmatyczny	11	despota	11
dobry mówca	11	nie interesujacy sie państwem	11
stały w poglądach	11	nie spełnia obietnic wyborczych	11
lojalny	10	oszust	11
bezstronny	9	populista	11
troskliwy	9	brak kultury	9
altruista	8	egoista	9
godny zaufania	8	gołosłowny	9
legalizacja marihuany	8	nepotyzm	9
władza	8	oszołom	9
bezpieczenstwo	7	burak	8
elokwentny	7	nielojalny	8
konsekwentny	7	nieempatyczny	8
konkretny	6	arogancja	7

legalizacja pokera	6	fałszywy	7
liberalny	6	nie liczy się ze zdaniem społeczeństwa	7
normalny	6	nie potrafiacy się wypowiedzieć	7
obszaru gospodarki	6	zły wygląd	7
oddany sprawom społeczeństwa	6	blokady drogowe	6
odważny	6	brak doświadczenia w polityce	6
opodatkowanie przybytków relogijnych	6	dyktator	6
pokorny	6	głowa jednej z parti	6
pracowitość	6	ignorancja	6
prawda	6	Kamiński	6
prawość	6	konserwatywny	6
przejrzystość	6	kot	6
racjonalista	6	kretacz	6
świeży na scenie politycznej	6	krzyczący	6
widzący potrzeby innych	6	nacjonalista	6
wolnościowiec	6	nie dbający o interes obywateli	6
wolność jednostki	6	nie umiejacy sie zachować i prezentować	6
ambitny	5	nieadekwatny	6
autorytet	5	nieelegancki	6
bezinteresowny	5	nieodpowiedzialny	6
etyczny	5	pieniądze	6
kontakt z ludźmi	5	pozbawiony ideaowości	6
mądry	5	prostak	6
miły	5	radykał	6
neutralność światopogladowa	5	starość	6
odpowiedzialność	5	staroświecki	6
opieka	5	stronniczy	6
osoba kóra współpracuje z innymi	5	uwielbienie dla kościoła	6
pomocny	5	wieśniaki	6
potrafi przyznać racj innym	5	zaangażowany religijnie	6
rzeczowy	5	agresywny	5
skuteczny	5	brak odwagi	5
stanowyczy	5	cyniczny	5
walczy o obywatela	5	czerwona morda	5

waleczny	5	dwulicowy	5
wolność wyznaniowa, światopoglądowa, etniczna	5	gruby	5
wyrazny charakter, mówi co mysli	5	hipokryta	5
wysokie kompetencje społeczne	5	kabaret	5
znający j.angielski	5	źle si prezentujący	5
żetelny	5	źle skrojony garnitur	5
anty-lewak	4	nie lubi krytyki	5
dbanie o prawa obywatela	4	o ograniczonych pogladach	5
ekspert	4	PiS	5
jest za wolnym rynkiem	4	pociag do władzy	5
komentuje na głos o złych politykach	4	skupienie się na patriotyźmie	5
legalizacja i opodatkowanie prostytucji i marihuany	4	smolesk	5
mówi poprawną polszczyzną	4	układy	5
mówiący prawdę ponad wszystko	4	wyłacznie teoretyk	5
nie chciwy	4	zaborczy	5
nie mający trudności z wystąpieniem publicznym	4	złodziej	5
nie rzuca utartymi sloganami	4	aferzysta	4
nowoczesność	4	bez znajomości podstaw prawa polskiego i konstytucji	4
obiektywny	4	bezmyslny	4
osoba która uznaje zasade dla każdego wg zasług	4	brak wykształcenia wyższego	4
pewny siebie	4	chcący sie wysztkim podobać	4
potrafi przyznać sie do błedu	4	fanatyk	4
przeciwnik UE	4	kamufluje sie	4
samoświadomy	4	kolesiostwo	4
sumienność	4	kombinator	4
szanujący innych ludzi	4	lawirowanie	4
wrażliwość społeczna	4	lewus	4
zdolny	4	mający wypadki	4
zrównoważony emocjonalnie	4	nie jest otwarty na nowe rozwiązania	4
30 lat +	3	nieautentyczny	4
aktywny słuchacz	3	niebezpieczestwo	4
antyklerykalny	3	niecharyzmatyczny	4
bezpartyjny	3	ordynarność	4
brak pogardy	3	otyłość	4

budowanie pozytywnej wizji	3	podstepny	4
dążący do utopii	3	potepiajacy homoseksualistów	4
dba o realizacje obietnic	3	samolubny	4
dbałość o interesy państwa i obywateli	3	skrajnie prawicowy	4
dobra gospodarka pastwowa	3	spocony,tłusty	4
dobra prezencja	3	wprowadzający zakazy na rzeczy współczesne	4
dobrobyt	3	wyuczone gesty	4
doświadczony w polityce	3	z PISu	4
dynamiczny	3	zamach	4
EPT w Polsce	3	zawistny	4
godzi interesy róznych grup społecznych	3	afery	3
języki obce	3	anty mówca	3
kulturalny	3	autorytatyzm prawicowy	3
majacy pomysł i strategi na rozwiązywanie problemów	3	bogaty	3
nacjonalizm	3	brak szacunku	3
neutralność	3	brak wiedzy	3
nie bazujący na manipulacji	3	brak zasad	3
nie kradnie pieniędzy	3	brat blizniak	3
nie obiecuje, że da rybe a raczej wedke	3	chaotyczny	3
nie rzucający słów na wiatr	3	chcący zawsze robić wrażenie	3
nieegoistyczny	3	cwaniak	3
nieobiecujący	3	dążący do kłótni i konfliktów	3
nieuzależniający polityki zagranicznej od własnych animacji	3	dogmatyk	3
obywatelski	3	dorobkiewicz	3
oczytany	3	dowcip	3
odporny na manipulacje	3	dziad	3
ojciec-głowa rodziny	3	gry zakulisowe	3
opiera sie na faktach	3	gwałtowny	3
patriota	3	wybuchowy	3
pomoc chorym, starszym	3	inwestuje pieniadze w zbędne rzeczy	3
posiada poczucie misji	3	komunistyczny rodowód	3
potrafi postwaić się w innej perspektywie	3	konflikt	3
potrafi słuchać innych	3	konsumentyzm	3

potrafiący zjednać sobie ludzi	3	kurdupel	3
preferujący równość	3	lud	3
słowny	3	ludność wiejska	3
słuchający	3	małoskowy	3
spokojny	3	nazista	3
starszy (powyżej 60lat)	3	neurotyk	3
stawiający ponad wszystko dobro ogółu	3	nie mniej aniżeli 38lat	3
suwerenny	3	nie na bieżąco	3
szanujący wybory obywateli	3	nie sympatyczny	3
tolerancyjny	3	nieobowiązkowy	3
trzymający się swojej idei	3	nieodpowiednie słownictwo	3
tworzenie lepszych perspektyw	3	niepoprawny	3
umiący walczyć za polaków	3	niski poziom kultury osobistej	3
uniwersalny-otwarty na inne opinie	3	ograniczony	3
upraszcza prawo i podatki	3	pijastwo	3
wierny	3	podatny na korupcje	3
władczy	3	popełniający gafy	3
wyrozumiały	3	poświecajacy ważne wartości dla tych mniej ważnych	3
wysoki	3	potepiajacy in-vitro	3
wyważony	3	prawicowy	3
wzrost gospodarczy	3	przeciwko aborcji/za zawżanie praw kobiet	3
z poczuciem misji	3	rasista	3
zaangażowanie na arenie midzynarodowej	3	rzadza bogactwa i wpływów	3
zabawny	3	skrajnie religijny	3
zdeterminowany	3	stary kawaler	3
zdrowe podejście	3	szowinista	3
znajomość praw rządzących gospodarką i histirii	3	sztuczny	3
znany w systemie edukacji	3	ślizgacz	3
wytrałość	3	świnia	3
darmowa edukacja	2	tchórzliwy	3
doświadczony	2	tworzy agresywne reklamy swojej parti i osoby	3
nie bojący sie zmian	2	uparty	3
nie dajacy sobie w kasze dmuchać	2	uśmiech	3
nienaganna prezencja	2	używający frazesów	3

sympatyczny	2	walczacy o prawa które godzą w czyjeś przekonania lub wolność	3
wizjoner	2	władza	3
dobrze ubrany	1	z teatralnymi ruchami	3
potrafi podjąć trudna, niepopularną decyzję	1	zachłanny	3
		zacietrzewiony	3
		zaciety	3
		zamknicie na inne poglady	3
		zamkniety na świat i inne kultury	3
		zbyt gruby	3
		zysk	3
		zakapior	2
		asexualny	2
		bied	2
		chłopak Antoniego	2
		krzyż	2
		nie zna ani słowa po angielski	2
		ortodoksyjny	2
		podążanie za liderem	2
		upadek Europy	2
		zakompleksiony	1
		awantura	1
		emigracja	1
		napalony katolik	1
		niemiły	1
		nieotwarty	1
		nierzeczowy	1
		uchodzcy	1
SUM	**1029**		**1116**

Appendix 2: Descriptive statistics for features analysed in a pilot study for Study 2 testing the extent of positivity and negativity of various features describing political candidates

	N	Min	Max	M	SD
ambitious	19	0	10	8.11	2.401
impartial	20	-9	10	3.25	5.609
lacks culture	20	-10	1	-8.20	2.895
greedy	19	-10	0	-7.16	3.948
likeable	20	-4	10	4.85	3.588
cares for country security	20	2	10	8.70	2.227
cares for citizens	20	-5	10	8.50	3.735
experienced	20	-7	10	5.30	4.414
keeping promises	20	3	10	8.95	1.791
empathic	20	2	11	6.80	2.419
stupid	20	-10	-2	-8.55	2.417
not keeping promises	20	-10	1	-8.70	2.716
intelligent	20	5	11	7.40	1.957
good speaker	20	0	10	5.20	3.443
good leader	20	0	10	6.10	3.386
quarrelsome	20	-10	5	-5.05	4.605
competent	20	1	10	7.90	2.808
consistent	20	0	10	7.10	3.110
cultural	20	-5	10	6.60	3.979
lazy	20	-10	0	-7.90	2.751
loyal	20	-8	10	4.85	5.133
radical	19	-10	6	-4.00	5.000
devoted in country matters	20	0	10	8.40	2.703
moral	20	-7	10	6.00	4.304
incompetent	20	-10	-4	-8.70	2.003
disloyal	20	-10	-3	-8.45	2.259
intolerant	20	-10	4	-7.35	4.069
uneducated	20	-10	1	-6.35	3.689
open-minded	20	1	10	6.75	1.916
populist	19	-10	5	-2.89	5.301

truthful	20	0	10	8.05	2.724
just	19	0	10	4.47	4.168
friendly	20	-9	10	3.00	5.099
corrupted	19	-10	0	-9.00	2.728
effective	20	0	10	8.10	2.732
fair	20	0	10	7.90	2.594
consistent	20	0	10	5.35	4.082
biased	20	-10	4	-2.20	4.060
frank	20	0	10	7.50	3.103
honest	20	0	10	7.55	3.187
polite	20	-7	10	3.50	5.011
well-educated	20	0	10	6.55	3.634
devoted	20	1	10	6.80	2.462
kind	20	-5	10	3.75	4.011

Appendix 3: Features and their dominance scores used to create candidate profiles in Study 2.

Five positive features (across all conditions)				Five negative features (across all conditions)			
Feature	DS	M	SD	Feature	DS	M	SD
intelligent	54	7.10	1.744	incompetent	19	8.70	2.003
truthful	51	8.05	2.724	uneducated	19	6.45	3.502
honest	49	7.55	3.187	quarrelsome	20	5.55	3.953
just	31	7.70	2.494	radical	37	4.75	4.051
sincere	31	7.50	3.103	intolerant	26	7.75	3.193

Additional five positive features				Additional five negative features			
Feature	DS	M	SD	Feature	DS	M	SD
open	13	6.75	1.916	populist	11	4.75	3.385
committed	13	6.84	2.522	stupid	21	8.55	2.417
keeping promises	15	8.95	1.791	despotic	11	8.15	2.183
cares for citizens	12	9.00	2.176	greedy	16	7.15	3.843
empathic	12	6.80	2.419	lacking culture	9	8.30	2.577

Appendix 4: Features used to create candidate profiles in Study 3 (with dominance scores and measures of affective loading)

Candidate profile A: 7 positive features, 2 negative features

7 positive features	DS	Affective loading	2 negative features	DS	Affective loading
cares for citizens	12	6.88	greedy	16	-6.5
competent	12	7			
good speaker	11	4.94			
stable in his/ her beliefs	11	3.38			
ensures country security	7	8.5			
consistent	7	6.13			
ambitious	5	5.44	disloyal	8	-7.63
	∑= 65	M = 6.03		∑= 24	- M = 7.06

Candidate profile B: 7 positive features, 4 negative features

7 positive features	DS	Affective loading	4 negative features	DS	Affective loading
cares for citizens	12	6.88	greedy	16	-6.5
competent	12	7			
good speaker	11	4.94			
stable in his/ her beliefs	11	3.38	not keeping election promises	9	-7.81
ensures country security	7	8.5			
consistent	7	6.13	lacking culture	9	-6.94
ambitious	5	5.44	disloyal	8	-7.63
	∑=65	M = 6.03		∑=42	M = 7.22

Candidate profile C: 9 positive features, 4 negative features

9 positive	DS	Affective loading	4 negative features	DS	Affective loading
well-educated	20	6.06			
committed	13	6.94			
cares for citizens	12	6.88	greedy	16	-6.5
competent	12	7			
good speaker	11	4.94			
stable in his/ her beliefs	11	3.38	not keeping election promises	9	-7.81
ensures country security	7	8.5			
consistent	7	6.13	lacking culture	9	-6.94
ambitious	5	5.44	disloyal	8	-7.63
	∑=98	M = 6.14		∑=42	M = 7.22

Candidate profile D: 9 positive features, 2 negative features

9 positive	DS	Affective loading	4 negative	DS	Affective loading
well-educated	20	6.06			
committed	13	6.94			
cares for citizens	12	6.88	greedy	16	-6.5
competent	12	7			
good speaker	11	4.94			
stable in his/ her beliefs	11	3.38			
ensures country security	7	8.5			
consistent	7	6.13			
ambitious	5	5.44	disloyal	8	-7.63
	∑=98	M = 6.14		∑=24	M = 7.06

Candidate profile E: 2 positive features, 7 negative features

2 positive features	DS	Affective loading	7 negative features	DS	Affective loading
			quarrelsome	20	-6.19
			lazy	14	-7.88
cares for citizens	12	6.88	greedy	16	-6.5
			populist	11	-4.06
			despotic	11	-4.5
ensures country security	7	8.5	nepotistic	9	-6.38
			disloyal	8	-7.63
	∑=19	M = 7.69		∑=89	M = 6.15

Candidate profile F: 4 positive features, 7 negative features

4 positive features	DS	Affective loading	7 negative features	DS	Affective loading
			quarrelsome	20	-6.19
well-educated	20	6.06			
committed	13	6.94	lazy	14	-7.88
cares for citizens	12	6.88	greedy	16	-6.5
			populist	11	-4.06
			despotic	11	-4.5
ensures country security	7	8.5	nepotistic	9	-6.38
			disloyal	8	-7.63
	∑=52	M = 7.09		∑=89	M = 6.15

Candidate profile G: 4 positive features, 9 negative features

4 positive features	DS	Affective loading	9 negative features	DS	Affective loading
			quarrelsome	20	-6.19
well-educated	20	6.06			
committed	13	6.94	lazy	14	-7.88
cares for citizens	12	6.88	greedy	16	-6.5
		7	populist	11	-4.06
			despotic	11	-4.5
			not keeping election promises	9	-7.81
ensures country security	7	8.5	nepotistic	9	-6.38
			lacking culture	9	-6.94
			disloyal	8	-7.63
	∑=52	M = 7.07		∑=107	M = 6.46

Candidate profile H: 2 positive features, 9 negative features

4 positive features	DS	Affective loading	9 negative features	DS	Affective loading
			quarrelsome	20	-6.19
			lazy	14	-7.88
cares for citizens	12	6.88	greedy	16	-6.5
			populist	11	-4.06
			despotic	11	-4.5
			not keeping election promises	9	-7.81
ensures country security	7	8.5	nepotistic	9	-6.38
			lacking culture	9	-6.94
			disloyal	8	-7.63
	∑=19	M = 7.69		∑=107	M = -6.46

Appendix 5: The means for affective loading (the extent of positivity/ negativity) of features analysed in the pilot study for Study 3

Positive			Negative			
	M	SD		M	SD	N
ambitious	5.44	2.732	corrupted	-8.25	2.696	16
cares for citizens	6.88	5.328	despotic	-4.50	5.502	16
committed	6.94	4.090	disloyal	-7.63	2.895	16
competent	7.00	3.882	greedy	-6.50	6.753	16
consistent	6.13	4.256	incompetent	-7.69	2.960	16
educated	6.06	3.696	intolerant	-2.56	4.774	16
ensures country security	8.50	2.683	lacking culture	-6.94	3.415	16
experienced	4.25	4.123	lazy	-7.88	3.304	16
good public speaker	4.94	2.645	nepotistic	-6.38	3.722	16
sincere	5.56	3.983	not keeping election promises	-7.81	2.834	16
honest	8.00	2.633	partial	-5.38	4.303	16
impartial	2.81	6.524	populist	-4.06	4.538	16
just	6.94	3.356	quarrelsome	-6.19	3.674	16
keeping his/her word	7.69	4.094	radical	-1.31	5.173	16
loyal	7.81	2.536	stupid	-7.81	3.103	16
stable in his/her beliefs	3.38	4.031	thinking only about him/herself	-2.00	5.692	16
truthful	5.50	4.676	uneducated	-5.44	4.016	16

Appendix 6: Descriptive statistics for positive and negative features used in candidate profiles in Study 3

Positive features				Negative features			
Feature	DS	Affective loading	Affective loading	Feature	DS	Affective loading	Affective loading
		M	SD			M	SD
well-educated	20	6.06	3.696	**lacking culture**	9	-6.94	2.809
committed	13	6.94	4.090	**not keeping election promises**	9	-7.81	2.833
ensures security	7	8.5	2.683	disloyal	8	-7.63	2.895
cares for citizens	12	6.88	5.328	greedy	16	-6.5	2.065
competent	12	7.00	3.882	populist	11	-4.06	3.842
good speaker	11	4.94	2.645	despotic	11	-4.5	3.669
stable in his/ her beliefs	11	3.38	4.031	quarrelsome	20	-6.19	3.439
ambitious	5	5.44	2.732	nepotistic	9	-6.38	3.721
consistent	7	6.13	4.256	lazy	14	-7.88	3.304

Note: In bold, marked features that were added to base candidate profiles

Appendix 7: Planned comparisons for the effect of additional positive and negative features on candidate evaluation for different candidate profiles (Study 3)

In order to investigate the effect of additional positive and negative features on the candidate evaluation of favourable and unfavourable candidates, planned comparisons were used to compare specific candidate pairs. Below I present the results of planned comparisons.

Planned comparisons additional positive features

Table 25: The means and standard deviations for the effect of additional positive features for candidate pairs that differ in their favourability. In the pair the second candidate has always two additional positive features compared to the first candidate from the pair.

Image favourability		Affective evaluation		Similarity to an ideal politician		Similarity to a bad politician		Voting Intention	
very unfavourable	Features	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
	2+ 9-	2.47	1.961	2.03	2.042	7.53	2.255	1.83	1.967
	4+ 9-	2.87	1.978	2.17	1.733	6.93	2.273	2.30	1.968
unfavourable	2+ 7-	2.55	1.901	2.17	1.583	6.62	2.441	2.10	1.896
	4+ 7-	3.23	2.432	3.06	2.658	6.06	2.516	3.06	2.620
favourable	7+ 4-	4.48	2.204	3.90	2.119	5.00	2.236	3.94	2.065
	9+ 4-	4.63	2.341	4.20	2.483	4.97	2.498	4.07	2.728
very favourable	7+ 2-	5.72	2.153	5.55	2.063	4.03	2.163	5.86	2.356
	9+ 2-	6.20	1.584	5.73	2.016	3.53	1.943	6.13	2.224

Planned comparisons revealed that adding positive features did not have a significant effect on any of the tested variables, regardless of the favourability of candidate image.

For candidates with a very unfavourable image (2+ 9- *vs* 4+ 9-): affective evaluation, $t(224) = 0.842$, $p = .400$, $d = 0.203$, similarity to an ideal politician, $t(224) = 0.324$, $p = .745$, $d = 0.074$, similarity to a bad politician, $t(224) = 1.060$, $p = .290$, $d = 0.265$, voting intention, $t(224) = 0.945$, $p = .345$, $d = 0.239$. Table 25 presents the means for candidate pairs.

For candidates with an unfavourable image (2+ 7- *vs* 4 + 7-): affective evaluation: $t(224) = 1.250$, $p = .212$, $d = 0.311$, similarity to an ideal politician, $t(224) = 1.626$, $p = .105$, $d = 0.404$, similarity to a bad politician, $t(224) = 0.936$, $p = .350$, $d = 0.226$, voting intention, $t(224) = 1.651$, $p = .099$, $d = 0.418$. Table 25 presents the means for candidate pairs.

For candidates with a favourable image (7+ 4- *vs* 9 + 4-): affective evaluation, $t(224) = 0.475$, $p = .634$, $d = 0.066$, similarity to an ideal politician, $t(224) = 0.559$, $p = .576$, $d = 0.130$, similarity to a bad politician, $t(224) = 0.063$, $p = .949$, $d = 0.013$, voting intention, $t(224) = 0.293$, $p = .769$, $d = 0.054$. Table 25 presents the means for candidate pairs.

For candidates whose image was very favourable (7+ 2- *vs* 9+ 2-): affective evaluation, $t(224) = 0.875$, $p = .382$, $d = 0.255$, similarity to an ideal politician, $t(224) = 0.328$, $p = .742$, $d = 0.088$, similarity to a bad politician, $t(224) = 0.836$, $p = .403$, $d = 0.243$, voting intention, $t(224) = 0.462$, $p = .644$, $d = 0.118$. Results presented in Table 25.

Planned comparisons for additional negative features

Table 26. The means and standard deviations for the effect of additional negative features for candidate pairs that differ in their favourability. In the pair the second candidate has always two additional negative features compared to the first candidate from the pair.

Image favourability		Affective evaluation		Similarity to an ideal politician		Similarity to a bad politician		Voting Intention	
very	Features	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
unfavourable	2+ 7-	2.55	1.901	2.17	1.583	6.62	2.441	2.10	1.896
	2+ 9-	2.47	1.961	2.03	2.042	7.53	2.255	1.83	1.967
unfavourable	4+ 7-	3.23	2.432	3.06	2.658	6.06	2.516	3.06	2.620
	4+ 9-	2.87	1.978	2.17	1.733	6.93	2.273	2.30	1.968
favourable	7+ 2-	5.72	2.153	5.55	2.063	4.03	2.163	5.86	2.356
	7+ 4-	4.48	2.204	3.9	2.119	5.00	2.236	3.94	2.065
very favourable	9+ 2-	6.2	1.584	5.73	2.016	3.53	1.943	6.13	2.224
	9+ 4-	4.63	2.341	4.2	2.483	4.97	2.498	4.07	2.728

Planned comparisons showed significant effects of additional negative features for situations in which two negative features were added to the descriptions that contained seven and nine positive features, that is for favourable and very favourable candidates. Non-significant results were found for additional negative features in low and very low favourability conditions (seven or nine negative features). Below detailed descriptions of the results of planned comparisons:

For candidates whose image was very unfavourable (2+ 7- *vs* 2+ 9-): affective evaluation, $t(224) = 0.156$, $p = .875$, $d = 0.041$, similarity to an ideal politician, $t(224) = 0.251$, $p = .801$, $d = 0.076$, similarity to a bad politician, $t(224) = 1.524$, $p = .128$, $d = 0.388$, voting intention, $t(224) = 0.460$, $p = .645$, $d = 0.140$. Table 26 presents the results.

For candidates whose image was unfavourable (4 + 7- *vs* 4 + 9-): affective evaluation, $t(224) = 0.546$, $p = .585$, $d = 0.162$, similarity to an ideal politician, $t(224) = 1.536$, $p = .125$, $d = 0.394$, similarity to a bad politician, $t(224) = 1.381$, $p = .168$, $d = 0.362$, voting intention, $t(224) = 1.143$, $p = .253$, $d = 0.326$. Table 26 presents the results.

For candidates whose image was favourable (7+ 2- *vs* 7+ 4-): affective evaluation, $t(224) = 2.252$, $p = .025$, $d = 0.569$, similarity to an ideal politician, $t(224) = 2.867$, $p = .004$, $d = 0.789$, similarity to a bad politician, $t(224) = 1.445$, $p = .149$, $d = 0.441$, voting intention, $t(224) = 3.174$, $p = .001$, $d = 0.866$. Table 26 presents the results.

For candidates whose image was very favourable (9+ 2- *vs* 9+ 4-): affective evaluation, $t(224) = 2.651$, $p = .008$, $d = 0.788$, similarity to an ideal politician: $t(224) = 2.636$, $p = .008$, $d = 0.678$, similarity to a bad politician, $t(224) = 2.219$, $p = .027$, $d = 0.645$, voting intention, $t(224) = 3.343$, $p < .001$, $d = 0.829$. Table 26 presents the results.

Appendix 8:Features used to create candidate profiles in Study 4

	Positive features	M	SD	Negative features	M	SD
initial candidate profiles	stable in his beliefs	-7.50	2.919	despotic	5.08	4.053
	ambitious	-7.79	2.949	lazy	8.08	2.569
	consistent	-7.00	3.912	greedy	6.92	3.106
	open	-2.87	3.055	quarrelsome	-7.00	3.912
	good speaker	-5.08	3.283	lacks culture	-5.21	4.021
	cares for country security	8.46	2.604	nepotistic	6.42	1.932
	cares for citizen security	8.58	2.701	populistic	7.08	2.962
additional morality-related features	just	8.409	2.387	disloyal	8.181	2.609
	always keeping promises	9.09	2.335	corrupted	9.136	2.544
additional competence-related features	competent	7.956	2.560	incompetent	8.739	2.404
	well-educated	6.565	2.792	uneducated	6.391	2.756

Appendix 9: Parameters for generalized linear model with decision certainty as a dependent variable (Study 7). The first column presents parameters for interaction effects for the following predictors: candidate pair (neutral-positive or neutral-negative), framing (choice or rejection), candidate similarity (i.e. similarity between the neutral candidate and the positive or negative candidate), prototype similarity 1 (similarity of a neutral candidate to an ideal politician), prototype similarity 2 (similarity of a positive or negative candidate to an ideal politician). Highlighted are significant parameters.

Parameter	B	Std. Error	95% Wald LCI	95% Wald UCI	p
(Intercept)	3.670	.807	2.087	5.254	.000
NEU_POS*Choice	.454	1.084	-1.671	2.578	.676
NEU_POS*Rejection	2.473	1.286	-.049	4.996	.055
NEU_NEG*Choice	**2.623**	**1.004**	**.655**	**4.591**	**.009**
NEU_NEG*Rejection	0[a]	.	.	.	.
NEU_POS*Choice*Candidate Similarity	.277	.165	-.049	.602	.096
NEU_POS*Rejection*Candidate Similarity	-.167	.238	-.635	.300	.483
NEU_NEG*Choice*Candidate Similarity	-.065	.158	-.376	.246	.682
NEU_NEG*Rejection*Candidate Similarity	.256	.199	-.135	.646	.200
NEU_POS*Choice*Prototype Similarity 1	**.470**	**.110**	**.254**	**.686**	**.000**
NEU_POS*Rejection* Prototype Similarity 1	**-.345**	**.120**	**-.581**	**-.109**	**.004**
NEU_NEG*Choice*Prototype Similarity 1	**.495**	**.129**	**.241**	**.748**	**.000**
NEU_NEG*Rejection* Prototype Similarity 1	**-.323**	**.098**	**-.516**	**-.130**	**.001**
NEU_POS*Choice*Prototype Similarity 2	-.132	.101	-.331	.068	.195
NEU_POS*Rejection* Prototype Similarity 2	.074	.117	-.155	.304	.525
NEU_NEG*Choice*Prototype Similarity 2	-.076	.118	-.307	.156	.521
NEU_NEG*Rejection* Prototype Similarity 2	.145	.101	-.053	.344	.150
Candidate Similarity* Prototype Similarity 1	.000	.017	-.033	.033	.996
Candidate Similarity* Prototype Similarity 2	.009	.017	-.024	.043	.584

a. Set to zero because this parameter is redundant.