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„Communication beyond Time, Space and Social Distance: A Bidirectional Effect of Social Psychological Distance on Communication"

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Abstract (English)

This study investigates a bidirectional link between social psychological distance and construal level of content in communicative settings. Construal level theory (CLT) claims that people mentally represent objects, people, places and events on different levels, ranging from high (abstract representations) to low (concrete representations). Social psychological distance, which is the perceived distance to the self, rises with increasing abstraction. Vice versa, higher psychological distance leads to more abstract representations. This study examined whether people use more abstract content for more socially distant people, replicating an experiment by Amit, Wakslak and Trope (2013) and if individuals communicating more abstractly are perceived to be more socially distant. The replication did not render any significant results, indicating that participants did not choose more abstract content for distant people. Participants perceived senders of abstract content as more distant and dissimilar to the self, in a second experiment however. Possible explanations for these opposing results have been discussed, as for example, level of hypothetical psychological distance and processing level. A mediation analysis did not render any significant results of indirect effect paths, implicating that this effect was not due to a shift in the level of construal.

Abstract (German)

Diese Studie untersucht einen bidirektionalen Zusammenhang von sozialer psychologischer Distanz und dem Construal Level von Inhalten in kommunikativen Settings. Die Construal Level Theory (CLT) besagt, dass Menschen Objekte, Personen, Orte und Events mental auf verschiedenen Ebenen repräsentieren, die von höheren Ebenen (abstrakte Repräsentationen) bis hin zu niedrigeren Ebenen (konkrete Repräsentationen) reichen. Soziale psychologische Distanz, welche die wahrgenommene Distanz zum Selbst darstellt,

steigt mit zunehmender Abstraktion. Umgekehrt führt höhere psychologische Distanz zu abstrakteren Repräsentationen. Diese Studie untersuchte, ob Menschen mehr abstrakte Inhalte für sozial entferntere Personen wählen, wobei ein Experiment von Amit Wakslak und Trope (2013) repliziert wurde, und ob Individuen die abstrakter kommunizieren als sozial entfernter wahrgenommen werden. Die Replikation ergab keine signifikanten Ergebnisse, was darauf hinweist, dass TeilnehmerInnen nicht abstraktere Inhalte für entferntere Personen wählten. Jedoch nahmen die TeilnehmerInnen in einem zweiten Experiment die SenderInnen abstrakter Inhalte als entfernter und verschiedener verglichen mit dem Selbst wahr. Mögliche Erklärungen für die gegensätzlichen Ergebnisse wurden diskutiert wie z.B., das Level der hypothetischen psychologischen Distanz und die Verarbeitungstiefe. Eine Mediationsanalyse zeigte keine signifikanten Ergebnisse für die indirekten Effektpfade, was darauf hinweist, dass dieser Effekt nicht aufgrund einer Veränderung des Construal Levels zustande gekommen ist.

Communication beyond Time, Space and Social Distance:
A Bidirectional Effect of Social Psychological Distance on Communication.

Communication is an integral part of everyday life. It is defined as the social interaction to convey meaning between individuals (Burkart, 2002) and serves different purposes such as influencing or persuading others, establishing and maintaining relationships, resolving conflicts or entertaining others (Berger, Roloff, & Roskos-Ewoldsen, 2010). Communication is often conveyed effortlessly, demanding little attention or thoughtful processing. While individuals usually think about *what* they want to pass on to *whom*, most of the time they do not think too much about *how* they are communicating things. There are matters, for example secrets, that we only tell a few special people that we feel close to and there are stories we do not mind sharing with others, like colleagues, acquaintances or even strangers. Interestingly, however, the way people tell these stories is influenced by the perceived closeness of another person, according to previous studies: People used more face-to-face communication for others who were living close by or were considered as socially close (Baym, Zhang, & Lin, 2004). Similarly, in online settings, visual means of communication (e.g., Videocalls) were preferred over text or voice options for people regarded as close (Baron, 2008). Individuals also tended to present content more abstractly, when communicating with more distant others (Amit, Wakslak, & Trope, 2013). Vice versa, the feeling of being close to someone increased more strongly when communicating face-to-face frequently, compared to email correspondence (Cumming, Kraut, & Kiesler, 2001) and people communicating in a more concrete fashion were perceived as closer (Amit et al., 2013). Research hence suggests that the means of communication is related to perceived distance or more precisely, how close we feel to the person with whom we are communicating. This assumption has its roots in Construal Level Theory (CLT; Liberman & Trope, 2003, 2009), which is investigating how people mentally represent people, objects or

events using different levels of abstraction relating to shifts in perceived psychological distance.

This study examines whether CLT and social psychological distance influence the way people choose to communicate to each other. In particular, it assesses the effect of social psychological distance on the use of visual or verbal information for communication and vice versa. Thereby, an associated and fundamental experiment of one of the most cited studies in the field of CLT will be replicated (Experiment 2 of Amit et al., 2013) and additionally, a further study will be conducted, to extend the findings of Amit et al. (2013). Even though replications are extremely important to prove the validity of previously found results and to determine if effects are applicable to different times, settings, samples and cultures, they are rather unattractive for researchers and journals (e.g., Wiggins & Christopherson, 2019). They are, thus, rare in the field of psychology (Makel et al., 2012) and, especially in the field of CLT, very few studies have been replicated as of now.

The goal is to add to previous research by examining: a) if people prefer more concrete/abstract content for proximal versus distal others (replication), b) if the effect of psychological distance on the means of communication is bidirectional, i.e., if people using verbal/pictorial content are perceived differently in terms of social distance and, c) if the effect of the medium used to present information (verbal vs. pictorial) on perceived distance can be attributed to a shift in construal level.

A better understanding of this matter has many practical implications, because the level of construal's influence on decision making has previously been observed in numerous studies (see Soderberg et al., 2015, for an overview). If our level of mental representation and thus the perceived social distance is indeed influenced by the way we communicate to each other, this means that there are many opportunities to use those findings to influence peoples' attitudes, intentions and behavior (Trope & Liberman, 2010). Studies show that psychological

distance influences consumer decisions and behavior. For example, people preferred more abstract product descriptions when psychological distance was high (Park, 2019). Furthermore, higher psychological distance led to a desirability focus (why) compared to lower psychological distance, shifting attention to feasibility aspects (how) (Kim, Zhang & Li, 2007; Trope, Liberman, & Wakslak, 2007). These findings offer highly relevant insights to economists and provide a basis for marketing decisions, advertisement and selling strategies. Stereotypes and attitudes have been shown to be influenced by CLT as well (e.g., Fujita et al., 2008; Greijdanus et al., 2014). McCrea, Wieber and Myers (2012) for example showed, that a higher level of construal led to more stereotyping. These findings could be used on a bigger scale as well, for example, by the government when campaigning against discrimination by facilitating perceived similarity.

Transcending the Boundaries of Direct Experience by Traversing Mental Distance

Common topics of conversations are own or other persons experiences, as well as people's hopes, dreams, or fears. And while direct experiences are subjective and thus inherently linked to an individual, limiting it to the self, here and now (Liberman & Trope, 2009), hopes, dreams and fears often go beyond these dimensions. They frequently relate to different times, locations, events and people, for example, dreams about our future or the fear of repeating a past mistake in a different situation. They can be highly hypothetical and are not necessarily realistic, implicating that they are no direct experiences, but mental representations of people, objects, places, times, or outcomes.

CLT thus describes these mental representations as cognitive constructs to transcend the boundaries of our immediate experiences (Liberman & Trope, 2009). It further suggests that these representations of the world are portrayed at different levels of construal, ranging on a continuum from low to high level of construal (Soderberg et al., 2015). Lower level

construals are more concrete and very detailed and contextualized representations, that include incidental features, which are rather unstructured and very context dependent (e.g., Liberman & Trope, 2009). Higher level construals are not only more abstract, but more coherent, schematic and decontextualized representations, which include only central and superordinate core features of events, people, or objects. Higher level construals focus on the predominant meaning of an object, person, or event. Shifting from a concrete representation to a more abstract one will always result in a loss of certain details, due to the process of generalization (Trope & Liberman, 2010). Any target, for example “a dog”, can be represented on a high level of construal, which in this case could be as “mammal”, or in a more concrete fashion, for example, “my german sheperd”, on a lower level of construal (Bar-Anan, Lieberman & Trope, 2006).

How and on which cognitive level certain concepts are represented systematically depends on the perceived psychological distance of the specific content (Liberman & Trope, 2009, Trope & Liberman, 2010). Psychological distance describes the subjective perception that something is close to or further away from the individual and their direct experience. This implies an increase of psychological distance, with rising distance of a target from the self, here and now (Kalkstein, Kleiman, Wakslak, Liberman, & Trope, 2016).

People can mentally traverse different kinds of psychological distances, typically classified into four dimensions (Trope & Liberman, 2003, 2010): Temporal (when), spatial (where), social (who) and hypothetical/likelihood (whether). The temporal dimension connects past or future events with the present “now”, where longer time differences imply higher distance (short vs. long time ago or from now). Spatial distance bridges different places with the reference point “here” with an increasing psychological distance with growing geographical distance (close vs. distant). The social dimension refers to the perceived similarity to the “self”, with more similar people feeling closer, and more

dissimilar people feeling further away (similar vs. dissimilar). Likewise, we feel closer to people we consider to be members of a salient in-group and more distant to people of a salient out-group (in-group vs. out-group). The hypothetical side is linking our reality to different possibilities, with psychological distance increasing, the more unlikely an event seems (certainty vs. uncertainty).

What they all have in common is the same point of reference, which is an egocentric one (Trope & Liberman, 2010). Furthermore, their influence on the construal level is the same for all four types of psychological distance (Trope & Liberman, 2010): As the psychological distance of a person, object, place or event increases, people are prone to use higher levels of construal for their mental representation. CLT claims that psychologically close objects result in rather concrete construals, while more distant objects are construed more abstractly (Hess, Carnevale & Rosario, 2018; Liberman & Trope, 2009). It is suggested that this is due to the specific characteristics of high-level construals, with abstract concepts more likely remaining unchanged, when approaching them or retracting from them. This link thereby serves a functional advantage, because more abstract and thus more general representations are less likely to change over context, which implies higher chances of being applicable to other times and settings (Soderberg et al., 2015).

This relationship between psychological distance and the level of construal is characterized as being bidirectional, which means that not only does higher psychological distance lead to a higher level of construal, but inversely, more abstract representations result in growing psychological distance (Liberman & Trope, 2009). The four dimensions of psychological distance not only effect the level of construal and are affected by the level of construal in a similar way though, but are interrelated with one another (Bar-Anan et al., 2006; Liberman & Trope, 2009). This means that if something or someone is distant on one dimension, it will most likely be perceived as distant in all other dimensions too: If, for

example, something is temporally distant, it will be perceived as less likely, and someone who is spatially distant, will be perceived as more socially distant and hence, more dissimilar (e.g., Macrae, Bodenhausen, Milne, & Jetten, 1994; Mooney, Cohn, & Swift, 1992). Maglio, Trope and Liberman (2013) showed in a cross-dimensional study, that any kind of initial perceived psychological distance overshadowed effects of later initiated psychological distances. The framing of something as being far away or close in one dimension thus reduced the sensitivity for other implemented or manipulated dimensions of psychological distance.

Research suggests that CLT plays a crucial role in many different processes, from information processing and categorization, causal inferences, self-control, language development and communication (e.g., Badre & d'Esposito, 2007; Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976; Sermin & Fiedler, 1988; see Burgoon, Henderson, & Markman, 2013, for a review). If communication is defined as a form of social interaction, the social dimension of psychological distance seems to be particularly interesting, when looking for influencing factors.

Social psychological distance emerges with the distinction between the self and others (e.g., describing myself vs. another person) and it varies with the similarity and dissimilarity of others to the self, their familiarity or unfamiliarity or their affiliation as members of certain in-groups or out-groups (Liberman & Trope, 2014; Trope et al. 2007). To measure this type of distance, social psychological distance is often operationalized as interpersonal similarity (e.g., Liviatan, Trope, & Liberman, 2008; Miller, Down, & Prentice, 1998), describing the similarity or congruence of different individuals in specific characteristics. Research concerning comparison processes between the self and close or distant others is grounded on the presumption, that social closeness arises with growing interpersonal similarity (Liviatan et al., 2008). Similar others are processed on a lower construal level, hence similarity

correlates negatively with social distance. In contrary, dissimilarity is represented on a higher level of construal, meaning that they are seen and evaluated more abstractly, with more emphasis on primary aspects (Hernández-Ortega, 2018; McCrea et al., 2012). Rising abstraction is related to more holistic processing of people, inducing perceptions of stability and personality coherence (Hess et al., 2018). This, in turn, may enhance the possibility of person-perception biases, as for example, correspondence bias or fundamental attribution error.

The importance and scope of a connection between CLT and communication becomes evident, when looking for a way to traverse (psychological) distance. What we experience may be limited to the self, here and now, communication however allows to transcend these boundaries: Not only can we talk to others about the past or future and different places or people, but technological advances make it possible to communicate over distance easily and preserve messages over long times. Communication thus bridges the here and now with other places, other times, other people and even offers a hypothetical dimension, hence forming relations with all four types of psychological distance. Social psychological distance is involved in any case though, because there is always a sender *and* a recipient of every message.

The Influence of Social Psychological Distance on Interpersonal Communication

The term communication is frequently used in everyday language. Most of the time, when we talk about communication, we refer to the exchange of messages between individuals (Beck, 2007). An etymologistic examination of the term is in consensus with this conception, since “communication” derives from the Latin words communis and communicare which are translated as common, sharing or even doing things together. These roots are addressed in a very basic definition by Burkart (2002) referring to communication as a form of social interaction, with the goal being the conveyance of meaning between

individuals. Berger et al. (2010) empathize the interpersonal aspect of communication and describe it as a complex, situated - referring to the fact that communication always occurs in specific situations - and social process, including two or more people.

Because of its heterogeneity in definition, the term communication is a very complex construct, occurring in many different contexts and serving many different functions (Berger et al., 2010). Its main purpose lies in generating shared meaning, aiming to achieve various social goals. Communication for example is the basis on which individuals establish, define and maintain interpersonal relationships. It is often used to accomplish personal, economic or politic objectives through strategic influence or persuasion. Furthermore, it is used by society to establish social structures by negotiating rules, norms, and roles. Bauer (2014) indicates that a central function of communication is to describe one's relationship with the environment, which, again connects construal level theory with language use, because psychological distance is always evoked by comparison of self and environment (e.g., Trope & Liberman, 2010). In accordance with this, Amit et al. (2013) propose that the form of language is able to expedite the traversing of distance, with words and pictures offering different advantages and thereby having diverging impact on different social situations. Their unifying element lies in their basic function: They are both symbols we use to represent our reality, for example, objects, people, events, or actions. Words on the one hand are more abstract representations, only carrying the core meaning and thus, stimuli are generalized into their primary, invariable characteristics. Words have an arbitrary relationship with the things they represent. It is not always clear to which object, person or event words are exactly referring to, because each word is actually rather a category, including various concrete objects (Glaser, 1992; Paivio, 1986). They preserve central features but omit details while in contrast, pictures, since they almost always resemble the things they are representing, are more concrete representations, providing additional information (Amit et al., 2013). These

specific details only benefit people knowing the object, situation or person though, while broader, more holistic concepts allow to share reality with social partners, who exist in different places or times or are more dissimilar.

Visual and verbal content hence differs in the level of abstraction, implicating also varying cognitive functions with recent research indicating, that pictures are more suitable when representing psychologically proximal things, while words are more suitable when representing psychological distal concepts (Amit, Aglom, & Trope, 2009). Because the connection between construal level and psychological distance is bidirectional, more abstract representations, e.g., words, are not only chosen more frequently for distal social partners, but people use to communicate in a more abstract fashion about distal objects, events, or others, as well (Amit et al., 2013).

Many previous studies have investigated the connection between medium and psychological distance in interpersonal relationships because communication plays a very important role, especially in the context of interpersonal relations (Berger et al., 2010). Baym et al. (2004) found that face-to-face communication predominated in local relationships, while the Internet was used especially in long-distance relationships. Similarly, a study by Cummings et al. (2001) suggested that one way people tended to traverse spatial distance is through phone and online communication. They further showed that a feeling of closeness led to a more frequent use of phone and face-to-face communication, compared to emails and text messages. This implies a relationship between perceived social psychological distance and medium preferences. When focusing exclusively on online communication, research also suggests that more visual and thereby concrete options like videocalls are preferred over emails, texts or calls, for people considered close, for example, partners and friends (Baron, 2008).

The rationale behind this medium-distance association is based on CLT because media with more visual information offer more detailed but context-specific information. The problem with comparing different media with each other and attributing effects on construal level is, that it is not entirely clear if the effect is only due to the level of construal or if other factors, as for example the effect of expression or other qualities of the medium are responsible for these preferences (Amit et al., 2013). Amit et al. (2013) conducted a study using purely pictorial or verbal information for the same content to examine the link between different types of psychological distance and the level of construal of the content. In an experiment investigating the relationship between social psychological distance, they were able to show a significant effect of distance ($\eta_p^2 = .26$, $p < .05$). This effect was not a product of differences in the content, since each stimulus included both pictorial and verbal information, thus differing only in the salience of the type of content presented (picture salient vs. text salient). These findings indicate that there is indeed a link between the level of construal and medium preferences for socially close vs. distant people.

Bidirectional Effects of Social Psychological Distance and Construal Level of Content in Communicative Settings

Because communication influences perceived (social) psychological distance and can be used to influence people deliberately or unconsciously, it seems important to investigate its central aspects as well as underlying rationales. The process of abstraction has been shown to be a critical part of communication among various other fundamental psychological processes (Burgoon et al., 2013). Numerous previous studies have investigated the link between level of construal and psychological distance, with many of them focusing on social interaction contexts. In regard to content presentation in communicative settings, studies showed preferences for more concrete content for more proximal communication partners, and preferences for more abstract content for more distal ones, which indicates that people

take into account the perceived distance of others when communicating (Amit et al, 2013). Being part of Constual Level Multilab Replication Project (CLIMR, n.d.), this study aimed to replicate the findings by Amit et al. (2013), hypothesizing that people prefer pictures relative to words when communicating with socially close persons and vice versa, words over pictures when communicating with socially distal others.

This effect of CLT and psychological distance is always conceptualized as being bidirectional (e.g., Liberman & Trope, 2009), but few studies actually test both possible directions of an effect. This study aimed to fill this research gap in the context of social psychological distance, which is the least researched type of psychological distance but is essential in any form of social interaction. Assuming bidirectionality between construal level of content and perceived psychological distance, it was hypothesized that others communicating more abstractly using more verbal content should be perceived as more socially distant, while people communicating more concretely using more pictorial content should be perceived as more socially close.

Previous studies (e.g., Amit et al., 2013) assumed that this link between the use of words or pictures and perceived distance is due to a shift in construal level. This has not been tested though, and other possible factors cannot be ruled out yet. Lastly, this study thus aimed to examine, whether this effect of pictorial versus verbal content on perceived social distance is mediated by the level of construal. The proposed mediation model is depicted in figure 1.

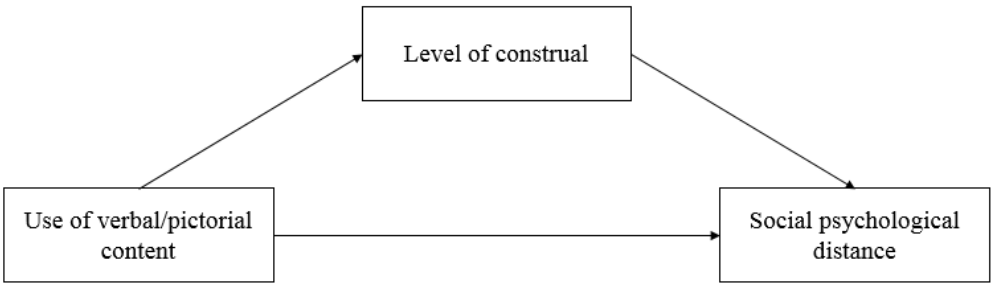

Figure 1. Proposed mediation model. Predictor: Abstract/concrete salient content; Mediator: Level of construal; Outcome: Perceived social psychological distance.

The study included two experiments, which were presented in a counterbalanced order to prevent any order effects. Recruitment thus took place at the same time for both experiments simultaneously and both experiments used the same pool of participants. The study design is illustrated in the following figure 2.

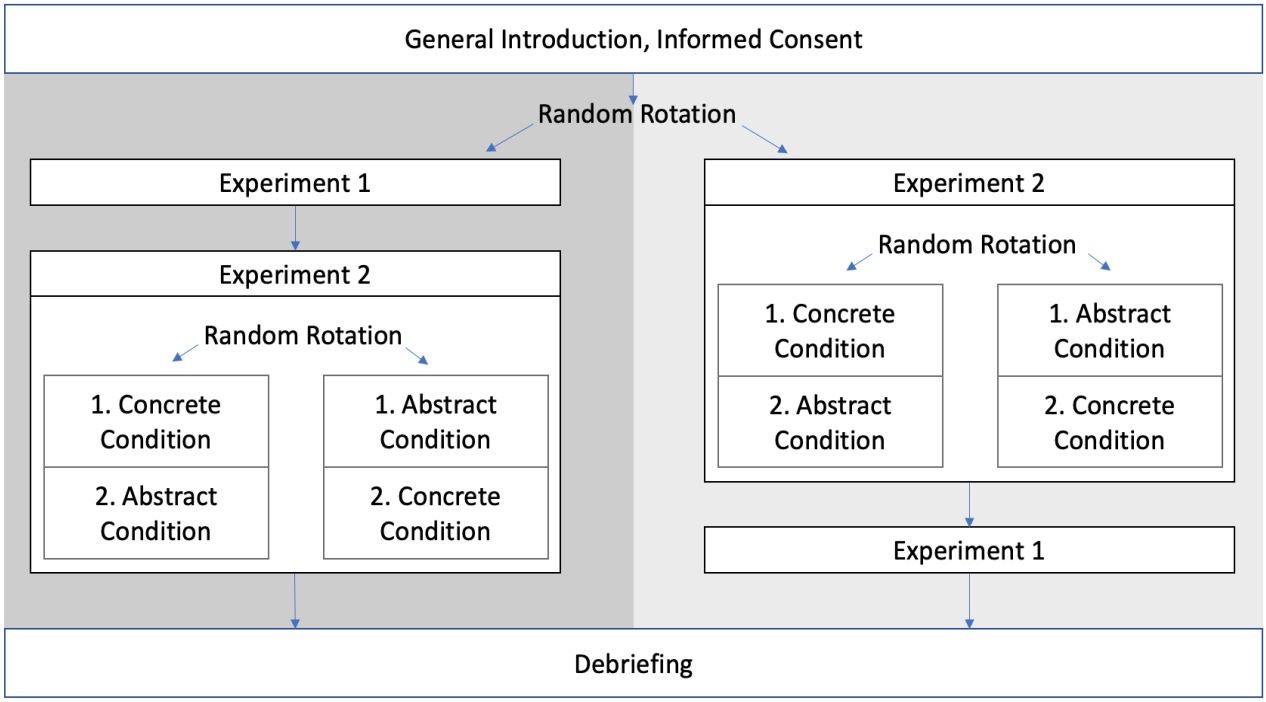

Figure 2. Study design with random rotation of experiment 1 and 2 as well as conditions in experiment 2.

The aim of the study was to test the following three hypotheses: H1: People choose more abstract (text-salient) content to communicate with socially distal others. H2: People choosing more abstract content are perceived as more socially distant by others. H3: The effect of abstract means of communication on perceived psychological distance is mediated by the level of construal.

The study including both experiments was approved by the Institutional Review Board of the Department of Work, Economy, and Social Psychology of Vienna (IRB number: 2020/S/016).

Experiment 1 (Replication Study)

As a part of CLIMR (n.d.), experiment 1 is the replication of a study conducted by Amit et al. in 2013, which tested the effect of social psychological distance on medium preferences (abstract vs. concrete).

Method

Following experiment 2 of Amit et al. (2013), in the present study, a within subject design was used to test hypothesis 1 ("People choose more abstract content to communicate with socially distal others"). All participants received both the socially close and the socially distant condition, exploring the preference of abstract or concrete content (dependent variable) for either socially close or socially distant people (independent variable).

Participants. To determine the necessary sample size, G*Power calculations as well as specifications of CLIMR (n.d.) had to be taken into account. CLIMR (n.d.) required a minimum sample size of 100 participants for the replication experiment. G*Power calculations for the mediation analysis conducted in experiment 2 yielded a result of recommended participant of 74 ($\alpha = .05$, $\beta = .8$) based on a medium effect. This type of effect was determined by joint significance (Fritz & MacKinnon, 2007), including findings of medium effect sizes between perceived similarity on the level of construal by Trope & Liberman (2008) and effects between perceived distance and medium choice found by Amit et al. (2013), ranging from medium to large effects. After adding 30% for possible missing values and exclusion criteria, a required number of approximately $N = 100$ was determined.

Different exclusion criteria have been defined: Insufficient comprehension manifesting as not following instructions (e.g., not using both types of cards in experiment 1) or wrong answers in the comprehension check item ("Which statement below best represents how the invitation card looked like?") resulted in exclusion. Moreover, participants who paid

insufficient attention, i.e., who incorrectly answered one or more attention check items ("Are you still attentive?"), were excluded as well.

Originally, the study was planned to be conducted on a computer in a laboratory setting. Due to the current situation with the Covid-19 pandemic resulting in numerous governmental restrictions including a nationwide lockdown however, a laboratory study was not possible. To ensure the safety and health of all parties involved, recruitment took place online via snowball sampling as well as the online platform poll-pool (https://www.poll-pool.com), designed to access survey participants for empirical research. This means that the present data sample is a convenience sample.

Materials and Procedure. For experiment 1, all materials of the study by Amit et al. (2013) were provided by CLIMR Project (n.d). Because the experiment was originally conducted in English and the present study was taking place in Austria with a German speaking sample, all materials were independently translated, using back-to-back translation and were peer-reviewed multiple times.

Information of Participants. Before participating in the study, the participants received some general information about the aim and the procedure of the study. They read that they were taking part in an experiment, exploring how people interact in different personal events, how different depictions of contents are evaluated and how their communicators are perceived. They then learned that they would be asked to imagine three fictious scenarios and afterwards answer some questions connected to these scenarios and in a last part of the study, would be asked for some demographic data. They were told that their participation is voluntary and that they are free to leave at any time. Furthermore, they were told that their participation is anonymous and that their data will be used exclusively for the purpose of the study. Before beginning the experiment, participants were asked for their

written consent. After completion of the study, participants were debriefed with regards of the purpose of the study.

Imagination Task. According to the original Experiment conducted by Amit et al. (2013), people were asked to imagine the following scenario:

"You and your girl-/boyfriend moved into a brand-new apartment. Everything is like you had in mind. The rent is not too expensive and the location is fantastic. All the shopping facilities are around the corner. To celebrate this event you decided to host a housewarming party. You want to invite your guests by sending them an invitation card. You prepared two types of cards: One card contains a small box of humoristic text and a big funny picture. The other card contains a big box of humoristic text and a small funny picture."

The following pictures of these cards were shown:

Figure 3. Picture card (concrete condition) on the left and text card (abstract condition) on the right.

Participants were asked to choose an invitation card for different people, with the notion that each person can only receive one card and both cards have to be used. To indicate their preferences, they were provided with a list of 14 people, which differed in their closeness (e.g., "a first degree family member" or "a person I met at a party"). At the end of the study, people indicated how close they feel to each of these persons on a scale from 1 ("not close at all") to 7 ("very close").

Comprehension Check. To make sure participants actually read and understood the description of the invitation card, a comprehension check item, asking about the content of the invitation card ("Which statement below best represents how the invitation card looked like") was added, as it was in the original study.

Collection of Demographic Data. After finishing both experiment 1 and 2, demographic data about the participants gender, age, education and current occupation was collected.

Statistical Analysis. As with the study of Amit et al. (2013) the close and distant categories were calculated from the perceived closeness ratings participants gave in the end of the study and a paired-sample t-test was conducted, using IBM SPSS Statistics for Windows, Version 26.0 (n.d).

Results

Sample Descriptive. Overall, a total of 199 people finished the study. Several of the participants had to be excluded due to a lack of comprehension (27) or attention (10). After applying all given exclusion criteria, the sample consisted of $N = 162$ participants. 60 males (37%), 101 females (62.3%) and one person identifying as non-binary (.6%) participated in the study, within an age range from 18 to 70 and a mean of $M_{age} = 32.44$ ($SD = 13.05$). The educational level was rather high with 58.6% reportedly having a university degree and another 27.2% having a high-school degree. 11.1% had finished an apprenticeship and the remaining 3.1% had either finished mandatory or secondary school. The most frequented occupations by participants were working (64.8%) and/or studying (47.5%). Respectively 3.1% of the participants were either still going to school or already retired and 2.4% declared themselves as homemakers. Only 1.9% were currently without occupation.

Out of the 162 participants, 56.2% received the replication study (experiment 1) first, compared to 43.8% starting with the additional study (experiment 2).

Main Analysis. To generate the close and distant condition to compare for a preference of text or picture salient cards in a paired sample t-test, the closeness ratings of the 14 people provided on the guestlist were used. Using these ratings, the three target individuals being perceived as most proximal and the three target individuals being perceived as most distal, as shown in table 1, have been determined.

Table 1

Closeness ratings of target persons

Condition	Target Person	Closeness Rating (SD)	Condition Mean (SD)
Close			**6.50 (.77)**
	My best friend	6.67 (.81)	
	A first degree family member	6.48 (.96)	
	A close friend	6.36 (.93)	
Neutral			
	A school friend	4.73 (1.45)	
	A coworker	4.44 (1.28)	
	My brother's girlfriend	4.36 (1.53)	
	My cousin	4.23 (1.65)	
	A friend of my boy-/girlfriend	4.07 (1.30)	
	An acquaintance from a sportsclub	3.70 (1.44)	
	A distant family member	3.38 (1.39)	
	My neighbor	3.33 (1.55)	
Distant			**2.76 (.89)**
	A fellow student who is not a personal friend of mine	2.99 (1.21)	
	A person I met at a party	2.75 (1.17)	
	A person that I met in my last vacation	2.55 (1.31)	

Note. Mean closeness ratings for the three most proximal and distal target individuals plus condition average.

In the close condition, the average perceived closeness was $M_{close} = 6.50$ ($SD = .77$) compared to $M_{distant} = 2.76$ ($SD = .89$) in the distant condition and an overall mean of all 14 persons of $M_{total} = 4.29$ ($SD = .62$). A paired sample t-test revealed that the closeness ratings in the close condition were significantly higher than in the distant condition, $t(161) = 39.344$, $p = .000$, CI [3.5530, 3.9285]. In a next step, the mean number of text cards chosen for each condition was calculated. It was hypothesized that people prefer abstract content for distant people and thus should use more text cards for the distant condition compared to the close condition. However, the number of text cards chosen for each condition was exactly the same (223) with a mean of text cards chosen of $M = 1.3765$ in the proximal and distal condition (SDs = 1.38 and 1.29 respectively).

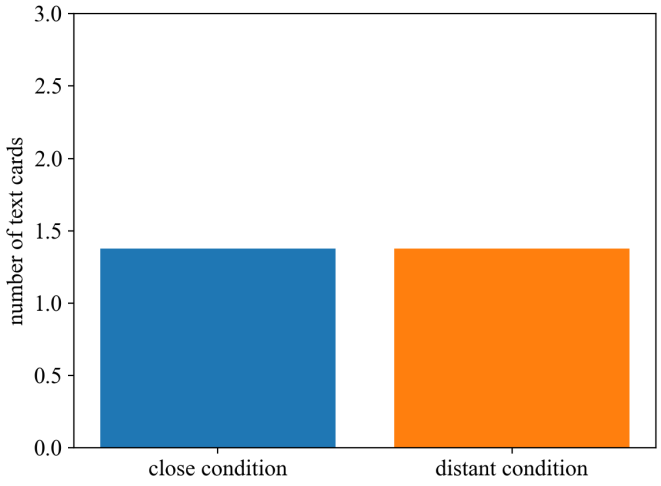

Figure 4. Number of text cards sent to socially close and distant people.

Because there is no mean difference, this results in $t(161) = 0$ $p = 1$, CI [-.3936, .3936], strongly indicating that there was no effect of condition at all. This means that participants did not prefer the text salient card for target individuals in the distant condition and vice versa, participants did not choose the picture salient card more often for target individuals in the close condition.

Exploratory Analysis: Order Effects. To investigate the possibility of an effect of the presentation order of experiments 1 and 2, an exploratory analysis was conducted. Therefore, the dataset was split and participants receiving experiment 1 first and participants with the reversed presentation order of experiments were explored separately. Results of separate t-tests showed that mean differences of text cards sent to either socially proximal or socially distal others did not significantly differ in the group of participants who received experiment 1 first (M = .11, SD = 2.26, p = .673), or in the group of participants who received experiment 1 after finishing experiment 2 (M = -.14, SD = 2.62, p = .673). This means, that neither participants receiving experiment 1 first, nor participants receiving experiment 1 second, chose significantly more text cards for more distant others, indicating that the results were not simply due to an effect of order.

Discussion

The presented experiment aimed to investigate preferences for text salient (more abstract) and picture salient (more concrete) content for socially proximal and distal others. Based on the assumptions of CLT (e.g., Liberman & Trope, 2003, 2009), people should prefer more abstract means of communication for people they perceive as far away compared to people they feel socially close to. Since the amount of text cards chosen was the same in both conditions however, the hypothesis that people prefer more abstract content for more distal others and more concrete content for more proximal ones could not be verified. In contrary, these results suggest that people choose the same amount of abstract or concrete content for others perceived as socially close or socially distant. These findings are in stark contrast to the results of Amit et al. (2013) who found a significant effect (η_p^2 = .26, p < .05) showing a strong preference of text salient cards for distant others compared to proximal ones. This highlights the importance of replication studies however, since reproducibility is one of the most essential aspects of science, offering credence to previous findings

(OpenScienceCollab, 2015). In a large-scale replication project, OpenScienceCollab (2015) investigated the reproducibility of psychological science and found that significant replications were rather rare with only 36% of the replications rendering significant results compared to 97% of the original studies. Furthermore, they showed a decline in effect size and found that one of the most critical factors for a successful significant replication was a low *p* value of the initial study. In the present case however, it remains unclear what the exact *p* value of the study by Amit et al. (2013) was, because the authors merely reported a *p* value lower than 0.05 ($p < .05$).

Due to differences (e.g., sample, methodical) between the studies, there are multiple possible explanations for these contradictory findings. Firstly, there are major differences of the samples used in the studies: Compared to the relatively high sample size of the present study ($N = 162$) the number of participants in the study by Amit et al. (2013) is relatively low ($N = 16$). This opens up the possibility of a false positive result, due to lower internal and external validity of very small sample sizes (e.g., Faber & Fonseca, 2014). Furthermore, the actual sample is more heterogenous in education, occupation and especially age, as illustrated in the sample descriptive section, compared to the original study, which used the data of 16 undergraduates participating for fulfillment of a course requirement. Few studies actually test these variables as possible moderators, so their influence on mental representations and CLT remains unclear. There are differences in preferences for certain types of communication regarding to age however, with younger people using significantly more online communication than older people (Thayer & Ray, 2006). With increasing preferences of online communication, especially in younger generations (e.g., Robinson & Stubberud, 2012), the question arises, if it is even realistic to send out an invitation in card form, or if it would be more realistic to send out an invitation via social media or messenger services. The problem with this scenario not being realistic and lifelike enough is, that a low likelihood of

this possibility leads to higher hypothetical psychological distance (Trope & Liberman, 2010). Because all types of psychological distances are in fact interrelated (Bar-Anan et al., 2006; Liberman & Trope, 2009), this could bias the results, with people perceiving the likelihood to send out a card rather low choosing more abstract content.

Additionally, there is a difference in language (German vs. English) and even though all materials were back-to-back translated to ensure semantic precision and accuracy, this could be an influencing factor as well. Since Austrian and American culture differ not only in language but in certain cultural dimensions (e.g., Hofstede, 2011) such as short (North America) vs. long term orientation (Europe) or uncertainty avoidance (higher in Europe), an effect of culture cannot be ruled out. Literature shows that there are cultural effects on decision making and communication (Shachaf, 2008) and it is suspected that different cultures generate different cognitive, behavioral and communication types (Zotzmann, van der Linden, & Wyrwa, 2019). In regard to CLT, a study by Kim, Sung, and Drumwright (2018) showed that cultural orientation had indeed an effect on construal level and temporal psychological distance. If there are differences for perceived temporal psychological distance between cultures, this could be the case for social psychological distance as well. A meta-analysis conducted by Soderberg et al. (2015) however did not find a moderating effect of culture or nationality, making it unlikely that differences in culture are the sole reason for these differences in findings of the present study and the replicated study.

The samples also differ in the way they were acquired, since recruitment in the original study took place at university and the experiment was conducted in a laboratory setting, while it was not possible to proceed in this fashion in the present study due to health and safety concerns because of the Covid-19 pandemic. Evidence to the question if laboratory settings are necessarily better than studies conducted online is inconclusive: Research on the one hand shows that there are certain problems regarding dishonesty or multiple

participations (Birnbaum, 2004) and distractions (Clifford & Jerit, 2014) in online settings. On the other hand, studies also suggest that attention does not differ significantly (Clifford & Jerit, 2014) and social desirability bias is weaker in online studies (Skitka & Sargis, 2005) and they offer lower measurement errors. There are certain advantages and disadvantages in online recruitment as well, as for example low economic costs and time efficiency for both participants and researchers (Birnbaum, 2001, 2004). People using online studies however differ from nonusers (e.g., digital divide; Lenhart et al., 2003) and due to the high non-responder rate on the internet, chances for a non-responder bias grow (Skitka & Sargis, 2005). In a meta-analysis in the field of CLT, Soderberg et al. (2015) found significantly higher effect sizes as well as lower *p* values in laboratory studies compared to online studies, implicating that online studies need higher sample sizes to achieve significant effects. In the present study, the sample size was more than 50% higher than originally calculated ($N = 162$ instead of 100), but because there is no mean difference and a *p* value of 1, it can be ruled out that this is merely due to sample size issues.

Secondly, the method and materials used to test this effect of social psychological distance have to be considered. Because the invitation cards themselves are rather abstract and contain only a text and a picture box, the participants had to come up with the specific content themselves. Compared to studies investigating the effect of construal level on psychological distance using different media which are rich in verbal or pictorial content (e.g., Baron, 2008; Cummings et al., 2001), this serves the advantage, that effects are not due to personal medium preferences, content type or other attributes of different media (Amit et al., 2013). This task however is rather complex and demands active effort and a certain degree of creativeness of the participants. Furthermore, this design makes it impossible to control for the exact manner people envisioned the card like, which is problematic, since a text can be written in a more abstract or concrete fashion, and vice versa, a picture can depict

more concrete or more abstract images. Thus, there is a possibility that the specific content people imagined differed in construal level and this affected the choice of cards, but with the present design, there is no possible way to investigate this any further. Both cards included both kind of information and differed only in salience, trying to ensure that there are no significant differences in content (Amit et al., 2013).

Because of this combination of bigger and smaller text and picture boxes, there is an alternative explanation however, which could account for an opposing effect, explaining a preference for text salient cards for more proximal others: There is the possibility that people just have a lot more to say to close people compared to more distal ones, thus needing a bigger text box. In turn, people may have not much to say to others that are perceived as very distant, thus preferring the card with a smaller text box. Additionally, it probably takes less time and effort to formulate a short text compared to a longer and more detailed one, which could be an effort people are more willing to provide for proximal others than for distal ones. These considerations seem especially reasonable, given that guests in the distant condition are perceived as very socially distant ($M_{distant}$ = 2.76 on a scale from "1 = very distant" to "7 = very close"), and it remains highly questionable, if participants would even consider inviting these people to a housewarming party in real life. Because this may not be very realistic, this could in turn impact the perceived hypothetical distance as well, since the likelihood of inviting these people is probably rather low. As aforementioned, this could bias the results of the current study, as all types of psychological distance are interrelated (Bar-Anan et al., 2006; Liberman & Trope, 2009). In this respect, the Covid-19 pandemic is an important context factor, which has to be considered, since governmental curfews and restrictions limit personal contacts and prohibit social gatherings like (housewarming) parties, making the presented scenario highly hypothetical. Hence, there are several factors as, for example, the medium used (card), the guestlist (very distant others) as well as context factors

(governmental restrictions) making the whole invitation scenario highly unlikely, which could lead to the immense hypothetical psychological distance overshadowing the effect by reducing the sensitivity for social psychological distance, as proposed by Maglio et al. (2013).

Even though social psychological distance is one of the less researched types of psychological distance, there is a large body of work indicating that there is indeed a relationship between level of construal and social psychological distance (e.g., Liviatan et al., 2008, see Soderberg et al., 2015, for an overview). It is thus possible that there are issues with the current study design and context factors.

Experiment 2

In addition to the replication experiment, the second part of the study was designed to a) test the bidirectionality of the link between level of construal of content used and perceived social psychological distance, looking for an effect of type of content (abstract vs. concrete) on perceived distance and b) examine if this relation of type of content and perceived social psychological distance is due to a shift in the level of construal.

Method

Experiment 2 used a within subject design. Participants were randomly assigned to start with either the abstract or the concrete condition. To test hypothesis 2 (People choosing more abstract content are perceived as more socially distant by others), social closeness ratings of others (dependent variable) that used either abstract or concrete content (independent variable), were used. To test the mediation proposed in hypothesis 3 (“The effect of abstract means of communication on perceived psychological distance is mediated by the level of construal”), the level of construal of descriptions of both senders have been used as a mediating variable.

Participants. Because all participants completed both experiment 1 and 2, G*Power calculations included parameters of both experiments, as described in the "Participants" section of experiment 1 in detail. G*Power calculations for the mediation analysis conducted in experiment 2 showed a recommended participant number of 74 ($\alpha = .05$, $\beta = .8$) based on a medium effect. A medium effect size was determined by joint significance (Fritz & MacKinnon, 2007), including findings of medium effect sizes between perceived similarity on the level of construal by Trope and Liberman (2008) and effects between perceived distance and medium choice found by Amit et al. (2013), ranging from medium to large. When including the required number of participants for the replication study (CLIMR, n.d.), this resulted in a required sample size of approximately $N = 100$.

As already noted above, exclusion criteria include a comprehension check from experiment 1 ("Which statement below best represents how the invitation card looked like?") and an attention check of experiment 2 ("Are you still attentive?"), with wrong answers leading to exclusion from both parts of the study.

The recruitment did not take place in a laboratory setting and was conducted online via snowball sampling and the online platform poll-pool (https:/www.poll-pool.com), due to health concerns, as reported in experiment 1. Therefore, the present sample is a convenience sample.

Materials and Procedure.

Information of Participants. Participants starting with experiment 2 received the same general instruction as participants commencing with experiment 1. They read that the aim of the study is to explore how people interact in different personal events, how different depictions of contents are evaluated and how their communicators are perceived. They were informed that they would have to imagine three fictious scenarios and answer some questions

about them afterward, before answering some demographic questions in the end of the study. They also read that participation is voluntary and were asked for written consent.

Before starting experiment 2, participants were further informed that they were going to read two fictious scenarios, in which they are the receiver of a message. They were told that they should pick different persons for the different scenarios. There were two conditions, in a counterbalanced order, to prevent order effects. Planned as a within subject design to compare effects of the cards, all participants participated in both conditions.

Imagination Task. Participants were asked to imagine the following scenario: *"Outside your window you have just observed the mailman arriving and putting something in your mailbox, so you decide to go check it out. When you open your mailbox, you spot a card inside. Someone you know has sent you the following card to invite you to their birthday party. As you inspect the card, you can see a big/small funny picture and a big/small box containing a humoristic text."*

Participants randomly received either the more abstract (bigger text box) or the more concrete (bigger picture) invitation card first, shown in figure 5. These cards were modified versions of the invitation cards by Amit et al. (2013) as used in experiment 1, they only differed in terms of color scheme and type of invitation (birthday instead of housewarming).

Figure 5. Abstract (text salient) card on the left and concrete (picture salient) card on the right.

They then were asked to imagine how the card could look like in reality and type in the initials of the person who they thought could have sent this invitation. Then they received questions about how close they feel to the person sending this invitation, ranging from a scale from 1 (very far away) to 7 (very close) and how similar they feel to the person sending that invitation ranging from 1 (very dissimilar) to 7 (very similar), among some other decoy questions (e.g., "how happy are you to receive this invitation"). These scales again were equivalent to the scales used in experiment 1, asking people how close they feel to all target individuals instead of the sender of the card.

Behavioral Identification Form (BIF; Vallacher & Wegner, 1989). To assess the participant's level of construal for the mediation hypothesis, participants were afterwards instructed to imagine that the sender (using the initials participants had named when identifying the sender earlier) was showing different behaviors, using the Behavioral Identification Form by Vallacher and Wegner (1989). They were given a list of 24 different actions (e.g., "making a list"), each followed by two restatements, one being more abstract ("getting organized") and one be ing more concrete ("writing things down"). They were then asked to pick the restatement, which in their opinion describes the behavior of the sender best.

Attention Check. To make sure that the participants actually read the items, the BIF included an attention check item in each condition.

Collection of Demographic Data. As mentioned in the description of Experiment 1, in the last part of the study, demographic data about the participants gender, age, education and current occupation was collected.

***Statistical Analysis*.** Similarly to experiment 1, paired t-tests were conducted using IBM SPSS Statistics for Window, Version 26.0 (n. d.), to test the mean differences of perceived similarity and closeness between the conditions. To test a possible mediation

effect, the SPSS macro MEMORE (Montoya & Hayes, 2017), designed for testing mediation effects in within-subject designs, was used.

Results

Sample Descriptive. Because all participants participated in both experiments, the remaining sample size after applying all exclusion criteria was $N = 162$, with a mean age of $M_{age} = 32.44$ (SD = 13.05). The majority of participants identified as female (62.3%) and reported a high degree of education. For a more detailed description, see the sample descriptive section of experiment 1.

Due to the random rotation, 43.8% of the participants commenced the study with experiment 2. Because experiment 2 included two conditions (abstract vs. concrete), which were presented in a randomized order, 49.4% of the participants received the abstract condition first, and the remaining 50.6% commenced with the concrete condition.

Main Analysis. To examine the effect of the abstract vs. concrete salient card, a paired t-test was used. First, the preconditions for this analysis were checked. There were no outliers found in the dataset. The difference between the values of both conditions were not normally distributed as assessed by the Shapiro-Wilk test ($p = .011$). Due to the fact that the t-test is a robust measure with higher sample sizes, this can be neglected (e.g., Glass, Peckham, & Sanders, 1972; Harwell, Rubinstein, Hayes, & Olds, 1992; Lix, Keselman, & Keselman, 1996; Salkind, 2010).

In the abstract condition, perceived social psychological distance of the sender was higher ($M_{abstract} = 4.81$, $SD = 1.44$) than in the concrete condition ($M_{concrete} = 5.55$, $SD = 1.41$). A paired sample t-test showed a significant medium effect ($d = 0.521$) of abstract content on perceived similarity and closeness, $t(161) = -4.557$, $p < .001$, CI [-2.1235, -.8395]. This means that participants receiving the abstract salient card rated the sender of that card as

more socially distant. In turn, participants rated the sender of the concrete salient card as more socially close.

Perceived similarity and closeness have been combined since they are both markers of social psychological distance and have been both used in numerous studies (e.g., Amit et al., 2013; Liviatan et al., 2008). However, perceived similarity is not necessarily identical to perceived closeness, so additionally, a paired sample t-test has been performed for both operationalizations of social psychological distance separately. They both rendered significant results, with perceived similarity, $t(161) = -2.185$, $p < .001$ CI [-1.630, .741], being impacted more strongly by content type (abstract vs. concrete) compared to perceived closeness, $t(161) = -5.267$, $p = .03$, CI [-.564, -.028]. Figure 6 depicts the mean values of perceived closeness, perceived similarity and the average of the two, including all standard errors, in both the abstract and concrete condition.

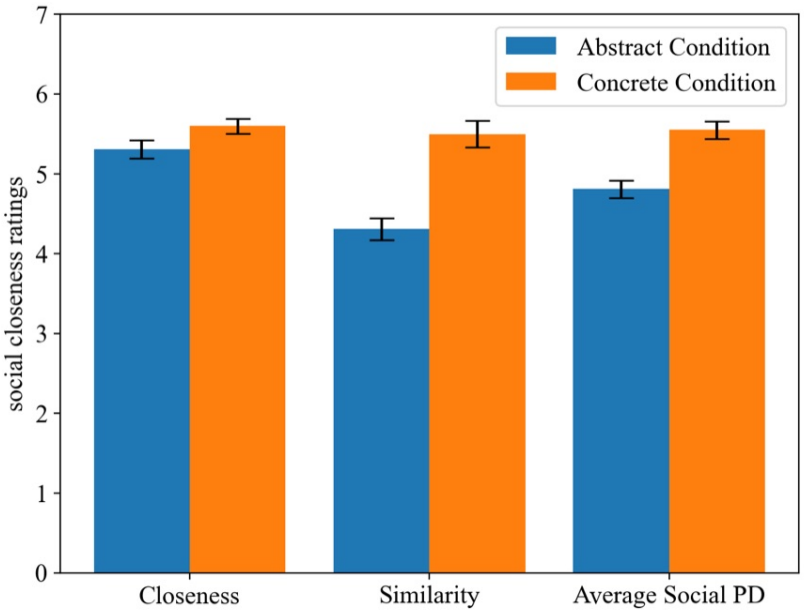

Figure 6. Perceived social psychological distance between conditions. Mean values and standard errors of perceived closeness, perceived similarity and averaged social psychological distance ratings of both conditions, ranging on a scale from 1 = “not close at all” to 7 = “very close”

To explore if this effect of verbal and pictorial content on perceived social psychological distance is mediated by construal level, a mediation analysis for within subject designs was conducted, using the SPSS macro MEMORE (Montoya & Hayes, 2017). The results of this mediation analysis are depicted in Figure 7.

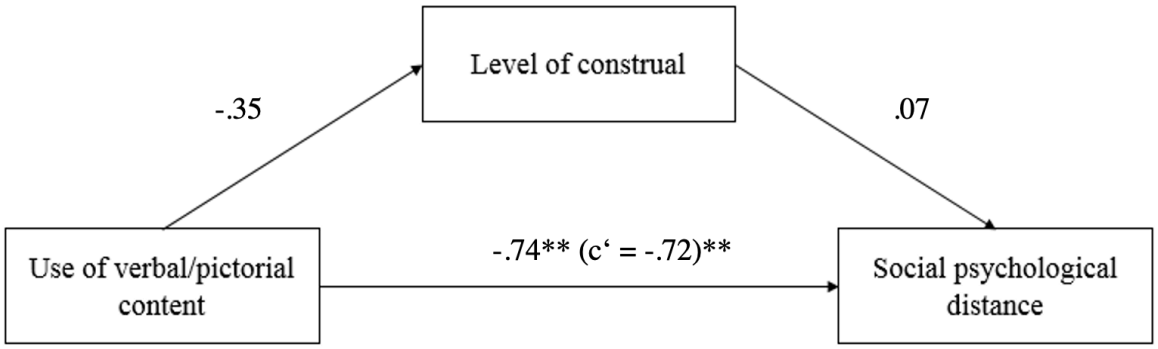

Figure 7. Results of the mediation analysis show a significant direct effect ($p < .001$) and nonsignificant indirect effect paths ($p > .05$).

The bootstrapped mediation analysis revealed that the level of construal, as measured via the BIF, did not mediate the effect of verbal or pictorial content on the perceived psychological distance of the sender (10,000 resamples; indirect effect = -.03, BCa CI of -.1059 and .0186). Results indicate that the amount of abstract and concrete behavior descriptions of the senders did not significantly differ between the abstract ($M = 36.26$, $SD = 2.29$) and the concrete condition ($M = 36.61$, $SD = 2.44$), $t(161) = -1.60$, $p = .112$, $d = .15$ (95% CI of the mean difference: -.7864, .0827). The perceived psychological distance of the sender was not significantly influenced by the level of construal of the behavior description of that sender either ($b = .07$, $p = .220$, 95% CI of the mean difference: -.0434, .1872).

Discussion

Basing on the assumption that the effect of level of construal on psychological distance is bidirectional, experiment 2 tested if others communicating in a more abstract

fashion (text salient card) are perceived as more distant and dissimilar and vice versa, others communicating in a more concrete way (picture salient card) as more socially close and similar. Results showed that the sender of the invitation card in the distant condition (text salient card) was indeed perceived as significantly more distant and dissimilar compared to the sender of the card in the close condition (picture salient card), verifying hypothesis 2. Because experiment 1 did not render any significant results, bidirectionality could not be shown in the present study, however.

It seems questionable why these studies, using the same pool of participants and a very similar scenario and materials, render such contrasting results. There are certain relevant differences between the studies however: Firstly, the task investigating the link between CLT and psychological distance in the second experiment (additional study) is less complex and less time consuming compared to the replication study. This seems important, since Soderberg et al. (2015) suggest that the effects of psychological distance might depend on effort and engagement of the participants. A study by Park (2010) showed that more engaged individuals processed information more thoughtfully, which led to larger effects of temporal distance. A more complex and time and energy demanding task might consequently lead to less thoughtful information processing in experiment 1 (replication study), because participants were asked to imagine not one or two target individuals (compared to the additional study) but 14 targets, adding more distractors and making it more likely that people used heuristics instead of active and thoughtful processing for each of these target individuals. Secondly, the measure of perceived social distance is different. While the replication study only uses perceived social closeness, the additional study takes into account both the perceived social closeness and the perceived similarity, showing that the effect of perceived similarity was much higher than just perceived closeness.

Furthermore, the perceived distance of the conditions is different in both experiments: In the replication study, the distant condition is very distant ($M_{distant} = 2.76$), making it unlikely to even invite these people. When looking at the perceived distances of the abstract and concrete condition of experiment 2 however, these people were considered much closer ($M_{abstract} = 4.81$, $M_{concrete} = 5.55$), leading to a much lower hypothetical psychological distance of actually inviting these people to a party (or being invited by them). Concerning the perceived likelihood of the scenario it also seems noteworthy to add that it might be easier to come up with a person who would send out an invitation in card form, even if the participants themselves would not choose this medium, making the scenarios of experiment 2 even more likely, compared to the scenario of the replication study.

Experiment 2 further tried to confirm the hypothesis, that the underlying basis for differences in perceived distance and similarity of the senders of both conditions is indeed the level of construal. This however was not possibly, since participants chose the same amount of abstract and concrete restatements in both conditions (and even within conditions). Consequently, their mental representations did not significantly differ in abstractness when describing the behavior of the sender in both the close and the distant condition and the construal level of these descriptions did not influence the perceived social psychological distance significantly either. Hence hypothesis 3 could not be verified.

As mentioned in the discussion of experiment 1, due to a large body of work suggesting that construal level successfully influences perceived distance and vice versa (see Soderberg et al., 2015, for an overview), it should definitely be looked into the present mediation, because it seems unlikely that the level of construal of the mental representation of the sender is not related to their perceived social distance. One possible explanation is that there is an issue with the measurement of construal level. The BIF (Vallacher & Wegner, 1989) is widely used for measuring construal level in studies investigating social

psychological distance however (e.g., Liviatan et al., 2008; Yan, Sengupta, & Hong, 2016). Especially when comparing behavioral descriptions for the self and others, the BIF often yields significant results. It is possible though, that it is harder to find these significant differences when comparing two other individuals, because the point of reference for social psychological distance, the self, is not concretely included in the comparison. In the presented study, a German translation of the BIF was used, which has not been validated yet. Possibly, cultural differences or differences in the wording might negatively affect the validity of the measure. Future research should attempt to validate translated versions of the BIF and direct efforts at developing new and suitable alternative measurements for construal level.

General Discussion

The presented study investigated whether there is a bidirectional link between the construal level of content and perceived social psychological distance in communicative settings. Therefore, the preference of abstract and concrete salient means of communication was examined for socially proximal and distal others, as well as the impact of construal level of content on perceived social psychological distance.

Experiment 1, being a replication study, tested the hypothesis of Amit et al. (2013), that individuals prefer more abstract content (text salient) for more distant others, and more concrete content (picture salient) for closer ones. This hypothesis could not be verified because participants chose the exact same amount of text and picture salient cards for both the distant and close condition. These findings however highlight the importance of replication studies and several alternative explanations have been discussed: The likelihood of this scenario actually happening in the reality perceived as low, due to methodical issues (low likelihood of using cards) and because of external factors (high hypotheticality of inviting someone due to the Covid19 pandemic) might evoke a high hypothetical psychological distance. In particular, hypothetical distance might have overshadowed the

effect of social distance (Maglio et al., 2013), leading to a higher preference of abstract content (text salient cards) in general. A plausible reason of participants choosing the picture salient card more for distal others may lie in other qualities of the card rather than construal level. Writing a long and personal text usually takes more effort than writing a short text – an effort people probably are more willing to provide for close people than for very distant ones.

Experiment 2 investigated whether people communicating in a more abstract or concrete manner are perceived differently in terms of social psychological distance. Results show that people communicating more abstract content (text salient) are indeed perceived as more socially distant, while people using more concrete content (picture salient) when communicating are perceived as more socially close. These findings are in line with the assumptions of CLT (e.g., Liberman & Trope, 2003, 2009), bidirectionality, however, could not be proven in the presented paper. There are some possible explanations accounting for these differences in findings of experiment 1 and 2. Perceived social psychological distance is much lower in both conditions in the second experiment, compared to the distant condition of experiment 1, and thus making the scenario more likely. Additionally, hypothetical distance might be lower in the second study, because it may be possible to come up with a person who might send out a card, even if the participant him/herself would not. Furthermore, similarity as an operationalization of social psychological distance was considered in the additional experiment and the task participants had to execute was less complex. This may lead to a deeper level of processing, which is necessary for the successful manipulation of psychological distance (Park, 2010).

To confirm that CLT is underlying basis of this link between construal level of the content and the perceived psychological distance, a mediation analysis was conducted. The result however showed no shift in the level of construal in behavior descriptions of the sender provided by the participants. Because the link between level of construal of content and

social psychological distance, as aforementioned, is actually shown by a large body of work, these results may be due to methodical issues, like the German version of the BIF used, not being validated yet.

Limitations and Implications

As mentioned throughout the discussion parts of this thesis, there are several limitations of the presented studies. Firstly, it seems questionable how realistic these scenarios are. Future researchers should adapt their materials to reflect the prevailing zeitgeist and adjust the scenarios to current circumstances to obtain unbiased and valid results. In context of different types of psychological distance interrelating with one another (e.g., Liberman & Trope, 2009) and even influencing sensitivity for other types of psychological distance (Park, 2010) similarly to priming, it seems essential to investigate this issue further. Related to this, research whether different types of distance produce stronger or weaker effects, as suggested by Trope and Liberman (2010), would be highly relevant.

A further limitation lies in the fact, that it was not possible to control for the specific content of the cards people imagined. Future studies should consider including an appropriate task, asking the participants to describe the text and the picture on the card briefly. This would add the benefit of participants having to engage in the scenario in a more thoughtful manner.

Because the alternative explanation of other qualities of the bigger/smaller text boxes/pictures being more relevant for verbal vs. visual content preferences seems rational in this scenario, future research regarding this matter would be essential to investigate factors influencing medium preferences under different circumstances. Having major implications (e.g., influencing intentions, behavior and attitudes), as mentioned in the beginning, it seems highly important to shed some light on this matter and fill this current research gap.

It has to be taken into account that the present data relies on a convenience sample, and therefore, a sampling bias cannot be ruled out. Furthermore, a lab study offering higher internal validity was not possible due to safety and health concerns. Thus, it would be interesting to compare these results with a lab study in the future.

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