FROM PEOPLE TO PLACES: THE ROLE OF PERCEIVED PERSONALITY IN FORMING IMPRESSIONS OF TOURIST DESTINATIONS

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RESUMO

Vasta investigação sobre perceção de pessoas mostra que, ao aprender e formar impressões avaliativas sobre os outros, a informação recebida é codificada organizada de forma não aleatória. Neste processo, a personalidade – sobre a qual partilhamos um conhecimento implícito – funciona como um modelo ou princípio organizador. A investigação sobre atitudes, incluindo as relativas a objetos não sociais, foca, por outro lado, o resultado da avaliação e as circunstâncias em que esse resultado pode ser alterado. Este, e não a organização da informação, tem sido o foco dos estudos sobre objetos que não pessoas, ou diretamente associados a pessoas. No estudo de como percebemos outros objetos, tanto quanto sabemos, não existem esforços significativos para compreender como a informação recebida sobre o mesmo, com objetivos avaliativos, é estruturada ou organizada. Este projeto situa-se no meio destas perspetivas, abordando, através de indicadores específicos, se e como estruturamos a informação sobre um objeto não humano face ao qual estabelecemos uma atitude. A existir tal organização, esperamos que esta seja gerida pela personalidade percebida desse objeto (caso esta seja comprovada). Consequentemente, abordamos um objeto não-humano que é percecionado como tendo uma personalidade semelhante à humana (isto é, ao qual atribuímos traços humanos): o destino turístico. Em proximidade com a personalidade humana, também a personalidade do destino é dimensional, variando no grau em que é considerada excitante, convivial, ou sincera.

Com vista aos nossos objetivos, foram desenvolvidos três conjuntos de estudos. O primeiro expande a literatura sobre personalidade de destino turísticos, até agora baseada exclusivamente em traços, ao avaliar e validar, em quatro estudos, quais as características de um destino que estão associadas às suas três dimensões de personalidade.

Os estudos seguintes abordam o processo de formação de impressões de destinos turísticos, recorrendo a teorias e paradigmas metodológicos de perceção de pessoas. Nestes, utiliza-se a dimensão (traço) excitante, e abordam-se indicadores específicos de que esta dimensão subjaz a organização mnésica de informação relativa ao objeto: os outputs de tarefas de memória que podem sugerir a presença de efeitos de incongruência e de padrões de probabilidades condicionais de recordações emparelhadas. Nestes estudos focam-se objetos de diferente complexidade: um "destino" geral, no Estudo 1; um bairro, no Estudo 2, seguindo literatura que demonstra que um objeto menos complexo e mais homogéneo favorece a ocorrência do efeito de incongruência (por exemplo, alvos unitários, como pessoas, vs. múltiplos, grupos). Os resultados dos ambos os estudos sugerem, porém, uma organização aparentemente baseada não no traço, mas sim na valência da informação recebida – uma recordação preferencial de informação pouco excitante que, coincidentemente, tem valência negativa (i.e., um efeito de negatividade).

O terceiro e último conjunto de estudos procura perceber o papel da valência e conteúdo do traço, distinguindo-os. Assim, os estudos replicam o paradigma experimental dos estudos anteriores, eliminando variações percebidas na valência ao utilizar informação tanto excitante como não excitante, que demonstrámos ser percebida como igualmente positiva. Sob valência constante, a evidência empírica dá relevo ao traço; a personalidade percebida exerce um efeito ao induzir uma preferência pela recordação (e subsequentes probabilidades condicionais de recordação emparelhada) dos itens mais informativos do traço. Identificamos nestes resultados um efeito de informatividade, já patente na literatura de formação de impressões.

Em suma, os principais resultados dos estudos realizados indicam que a personalidade percebida de um objeto, em conjunto com a valência de informação recebida, pode guiar a organização da informação sobre um objeto não humano durante a formação de atitudes. As semelhanças com a perceção de pessoas, bem como os pontos de divergência, são discutidos detalhadamente ao longo do projeto, assim como as várias possibilidades para investigação futura que poderá usar este trabalho como ponto de partida.

ABSTRACT

Vast research in person perception has shown that, when learning about and forming evaluative impressions of others, incoming information is encoded and organized in non-random ways. In this process, personality – of which we share implicit knowledge – acts as a model or organizing principle. Research on attitudes, including those toward non-social objects, conversely focuses on the outcome of evaluation and the circumstances under which it may change. This outcome, rather than the organization of information, has been the primary focus in studies of objects that are neither people nor directly associated with people. In the study of how we perceive other objects, to our knowledge, there have been no significant efforts to understand how incoming information, when received with an evaluative goal, is structured or organized. This project sits in the middle of these perspectives, exploring, through specific indicators, whether and how we structure information about a non-human object towards which we establish an attitude. If such organization exists, we expect it to be guided by the object's perceived personality (provided that such perception is demonstrated). Consequently, we examine a non-human object perceived as having a human-like personality (i.e., to which we attribute human traits): the tourist destination. Much like human personality, destination personality is dimensional, varying in the degree to which it is considered *exciting*, *convivial*, or *sincere*.

In pursuit of our goals, three sets of studies were developed. The first expands the literature on destination personality, so far exclusively trait-based, by assessing and validating, across four studies, which characteristics of a destination are associated with its three personality dimensions.

The subsequent studies address the process of impression formation for tourist destinations, applying theories and methodological paradigms from person perception. These studies focus on the *exciting* dimension (trait) and explore specific indicators that this dimension underlies the mnemonic organization of object-related information: recall outputs that may suggest the presence of incongruence effects and patterns of conditional recall probabilities for paired items. These studies examine objects of differing complexity: a general "destination" in Study 1, and a "neighborhood" in Study 2, following literature suggesting that less complex, more homogeneous objects favor the occurrence of an incongruence effect (e.g., unitary targets, such as individuals, vs. multiple entities, such as groups). However, results from both studies suggest an organization seemingly based not on the trait itself, but rather on the valence of the received information—specifically, a preferential recall for *unexciting* information, which, coincidentally, has negative valence (i.e., a negativity effect).

The third and final set of studies seeks to disentangle the role of valence and trait content. These studies replicate the experimental paradigm of the previous ones while eliminating perceived valence variations by using both *exciting* and *unexciting* information that we demonstrate to be perceived as equally positive. Under constant valence, empirical evidence highlights the role of the trait; perceived personality exerts an effect by inducing a preference in recall (and subsequent conditional probabilities of paired recall) for the most informative items within the trait. We identify in these results an informativeness effect, previously documented in impression formation literature.

In sum, our main findings indicate that an object's perceived personality, in conjunction with the valence of incoming information, can guide the organization of information about a non-human object during attitude formation. Similarities to person perception, as well as points of divergence, are discussed in detail throughout the project, along with various possibilities for future research that may use this work as a starting point.

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Within a socio-cognitive approach to the human mind, to know something is to represent it. As we appraise or evaluate social and non-social objects, as we learn about them, information is stored in memory. From it, we abstract evaluative impressions, or attitudes. This information is stored in memory in some specific way – it is not placed in cognitive space randomly. Where is each item of information placed in respect to the others – or to the evaluation itself? Looking at this network of information about a given object, how strongly are the inherent inter-item associations? What guides such strengths and placement?

In the mid-twentieth century, a strong tradition in psychological research was interested in the mechanisms behind how we form impressions of other people, trying to unveil the rules operating under the hood, attentive to how it influenced how much we like or dislike another person. The advent of the cognitive revolution saw algorithmic attempts at predicting this evaluation of another person. From here, a divergence: the evaluations of both social and non-social objects were studied under the term *attitudes*; those who continued to work under the umbrella of person perception, however, shifted their attention from the evaluative component of an impression towards the knowledge contained in it – and how it was organized, asking perhaps the same questions as those in the previous paragraph. Not that object-related knowledge was not relevant in research on attitudes – it, and its organization, were simply addressed as cognitive, affective, or behavioral information that support an attitude.

From the divergence, then, a gap in need of bridging: while volumes of research and knowledge exist on how we organize and structure information about another person, as well as what principles guide it, less is known about how we organize incoming information about an object that is not other than a person, as the emphasis has been on the nature of the information and its implications for the resulting evaluations.

This dissertation is, then, an effort to bridge this gap – or to, at least, lay the groundwork. We aim to provide empirical evidence of mnesic organization of object-related knowledge when forming attitudes. This is achieved by using a non-person attitudinal object, while relying heavily on person perception theory and methods. The central lesson from person perception literature is that personality – of which we share an implicit understanding – is an extremely efficient template that guides mnesic organization. Thus, our choice of non-person object falls on one in which we tend to perceive a personality, one not only described with typically human traits, but also shown in literature to be dimensional: the tourist destination. If, like with person perception, mnesic structure happens for non-person objects, it should be detectable when a human-like personality is perceived, allowing for the use of a tried-and-true template.

We advance our goal through different sets of studies, each developed to address distinct aims. The first: to assess and validate a set of specific features of a destination associated with the dimensions that compose its perceived personality, akin to how behaviors are associated with traits when perceiving a person. This set of studies provides the materials for subsequent studies, while simultaneously addressing a gap in what is an exclusively trait-focused literature (Empirical Chapter I).

The goal behind our second set of studies is to identify the role of perceived personality in structuring incoming information about the destinations when forming attitudes, as well as the role of perceived valence of the information. With the previous studies' outputs as stimuli, we draw from person perception paradigms and look at specific indicators of mnesic organization (Empirical Chapter II).

The final empirical chapter is a direct follow-up to the previous chapter. The final study – a variation of the preceding studies' procedures – aims to disentangle the roles of personality and valence of the incoming information, thus clarifying their interplay in mnesic organization when forming attitudes of non-person objects (Empirical Chapter III).

This project offers a new, and likely valuable, contribution to the field. It is rooted in a review of the literature concerning conceptualizations of attitudes, and how it has approached its structural properties. Furthermore, the field of person perception provides a useful example of how the structure of attitudinal objects can be approached; namely, that besides a focus on the structural properties of the attitude itself, there is value in studying how the structure of object-related knowledge can also be determinant. This argument is sustained in a review of person perception literature, with special attention to studies that demonstrate, and theories that advance explanations of, the non-random codification and, organization of information that underlies the formation of evaluative impressions of others (Section I). Finally, from both a review of destination personality literature and our own results and insights, this project can meaningfully contribute to the development of new and effective communication strategies for destination branding.

Section I:

Literature Review

Attitudes and impressions, evaluation and organization

It is no surprise that a substantial body of research has tackled the question of "how we perceive our social reality", being it "how we perceive other people" or other social objects. After all, navigating the social world implies an understanding of others – their qualities, their thoughts and beliefs, the causes for their behavior – and an understand of the objects and events that compound our social reality. It is through our social perceptions we evaluate, categorize, make predictions, generate expectations, and behave accordingly.

Throughout decades of research, the approaches to the perception of objects and people were similar: focused on the evaluation of their targets. However, since the 1980's, the two fields of research diverged; people and other non-person objects were approached differently. Objects become targets of attitudes; people, of mental representations. Throughout this section we will detail the most relevant advances in research concerning impressions of others as well as non-social objects, initially centered around how we evaluate (Chapter I). We move to our impressions of others as representational, highlighting the interest on how information about another is displayed, connected, structured in cognitive space (Chapter II). Subsequently, we dive into representational conceptualizations of attitudes (Chapter III) before expanding on how a structural approaches to impression formation of non-person objects, with a detailed section of our object of choice for this project: the destination personality.

Chapter I.

Impressions of person and non-person objects as attitudes

Early inquiries into impressions of others had a specific interest in *how* impressions came about, in a clear break from a previous interest in *how well* we judge others; in other words, a difference between a focus on *accuracy* and a focus on the *process* (Bruner & Tagiuri, 1954, p. 19). This curiosity about the many peculiarities intrinsic to impression formation was set off by Solomon Asch's seminal work; his findings and claims would trigger the curiosity of later researchers. Besides the determination to uncover the guiding principles of impression formation, another aspect was transversal to these research efforts: the conceptualization of an impression as, ultimately, an overall valenced evaluation of another – sometimes along a positive-negative axis, sometimes a measure of likeability, or along a specific dimension such as warm-cold. These were, effectively, attitudes.

The focus on the evaluation was shared with the study of attitudes, in which the attitudinal object was virtually anything – not only another person, but also physical and abstract objects, such as products and services or public policies. This chapter outlines these early contributions to the study of both attitudes and impressions, highlighting their focus on the evaluative component, as well as different conceptualizations of attitude – some heavily focused on the evaluative aspect, others with a more explicit role for the knowledge we have of the attitudinal objects.

I. Approaches to attitudes

Attitudes' centrality to social psychology is attested by a rich array of perspectives, theories, models, and practices. This vast interest is only natural; after all, towards most things, if not all things, we find that we hold an *attitude* – a general, relatively stable, and overall evaluation of a given entity or *target*, typically expressed in a continuum such as that of like-dislike or approve-disapprove (Albarracín et al., 2005; Eagly & Chaiken, 1993, 2007; Petty et al., 1997). This target, or object, can be virtually anything: a literal object, but also a person, our own person, a group of people, an idea, an ideology, a city, and so forth; there are as many examples as there are things. The *umbrella definition* states, then, that an attitude is "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 1993, 2007). This definition is purposefully abstract and generic, so as to be compatible with the variety of approaches and theoretical conceptualizations of a construct that was deemed "the most distinctive and indispensable" in social psychology (Allport, 1935, p. 798). The importance attributed to attitudes is not exaggerated in this quote, as summary evaluations are essential in navigating and organizing a social surrounding that is otherwise too complex. These evaluations serve specific functions: they can help decide whether to approach or avoid an object, but also be used to foster and express identity and core values; they can be used to maintain a positive *self* or to avoid inconsistency (for a review of attitude functions, see Maio & Olson, 2000). Studying attitudes remains, more than justified, necessary.

Throughout a century of research, many conceptualizations of attitude were advanced – some, like many modern approaches, are easily encompassed by the umbrella definition of attitudes as evaluations (Eagly & Chaiken, 1993, 2007). Early efforts were dedicated to the measurement of attitudes and the development of adequate, validated formal techniques and instruments that could include different components of this evaluation. This includes direct self-report measures, such as the Thurstone (Thurstone, 1928), the semantic differential (Osgood et al., 1957), and the Likert scales (Likert, 1932), as well as indirect measures, vital when respondents are, for some reason, unlikely to provide truthful information, and exemplified by procedures such as projective techniques (Proshansky, 1943) or the information error test (Hammond, 1948).

What an attitude *is* was, for a while, elusive. The umbrella evaluative definition may seem to convey a unitary perspective, a view of attitudes as a whole, or an indivisible entity. This definition, however, is purposely abstract, as if a distillation of its object's essential features, or the intersection of different conceptualizations; consequently, it does not venture into other important features of the construct. Attitude can, perhaps most obviously, differ in *valence*, being placed along a continuum that ranges from negative to positive – whether someone likes or dislikes, approves or disapproves, etc., of a given object (Eagly & Chaiken, 1993; Fabrigar & Wegener, 2010). An attitude's *extremity* represents how close it is placed to the extremes of this continuum – in colloquial terms, *how much* a person likes/approves of, or dislikes/disapproves of an object – so that two people can hold attitudes towards an object that are both positive, but different in extremity (e.g., "I like the Dire Straits; my father, however, *loves* them"). We can also hold attitudes of different *strength* – stronger attitudes are expected to be longer-lasting (e.g., stable when measure across time), more resistant to counter-persuasion, as well has to exert a higher impact on, and be more predictive of behavior (Briñol et al., 2019).

Some of these conceptualizations had a componential view of attitudes, such as the largely influential *tripartite* perspective made popular by Rosenberg and colleagues (1960) that is still featured, at the time of writing, in most social psychology textbooks. The tripartite model sees attitudes as composed of, as the name suggests, three parts or components; namely: an *affective* component which refers to an individual's emotions, or positive or negative affect towards the attitudinal object (e.g., being scared of spiders); a *behavioral* component, referent to both past experiences and intended behavior associated with the object (e.g. "I hate cats; every time I tried to pet one, it bit me"); and a *cognitive* component which encompasses thoughts or beliefs, accurate or not, or attributes associated with the object (e.g., "I like this detergent because it is effective").

While ubiquitous in learning materials, the tripartite model is not without its issues. Zanna and Rempel (1988) note, for example, that, in this model, the relationship between attitude and behavior is assumed, when in fact, as established by vast evidence, this relationship can be extremely volatile, and sometimes fully absent (LaPiere, 1934; Petty & Cacioppo, 1986; Wicker, 1969). Furthermore, it seems implausible that an attitude, whatever it may be, *must* consistently rest on these three chronic components; difficulties in detecting them as factors in statistical analysis (Eagly & Chaiken, 1993) only add to its implausibility. In fact, many well-known approaches have proposed that attitudes can be based on a single of the three components: Bem's (1972) Self-Perception theory, for example, states that we can derive our attitudes towards any given object from observation of our own past behavior; likewise, an individual's attitudes have also been proposed to be "a function of his beliefs about the object" (Fishbein, 1966, p. 205; Fishbein & Ajzen, 1977).

Zanna and Rempel (1988) note other limitations of the tripartite model in their review but, in recognition of the model's merits and usefulness, use it as a jumping-off point to a revised conceptualization of attitudes: instead of components (and instead of an atomized attitude), there are now three "classes of information", which attitudes are "based on, or generated from" (Zanna & Rempel, 1988, p. 319). These classes or categories of information were defined by the content previously assumed as determinants of the old components: cognitive information; affective/emotional information; and information concerning past behavior or behavioral intentions; all of which can be present and contribute simultaneously to an attitude. Perhaps the crucial difference is that the attitude is, then, considered to be anchored on information stored in memory – attitudes as "items of knowledge".

The umbrella definition of attitude as evaluation is, however, always present. Whether the focus was measurement, or a concern with the structure or composition of an attitude, it was always taken to be an evaluation of a target along a continuum, at the extremes of which we find a variation of the positive-negative dichotomy: like/dislike, approve/disapprove, agree/disagree. The *neotripartite* proposition (Zanna & Rempel, 1988), innovatively, attributes weight to the information that eventually results in an attitude, even considering that informational incongruence (a *structural* aspect of, e.g., an associative network) can even "make a difference in, say, the prediction of behavior" (p. 323). In the presence of multiple informational components, some incongruent among themselves, it is possible for individuals to hold different attitudes towards the same object if these are based on different sources of information; furthermore, the authors propose, attitudes based on consistent sources of information (regardless of their category) are more likely to translate to behavior.

II. Approaches equating impressions and attitudes

The study of how we make an impression was mainly pioneered by Solomon Asch. Asch was a product of his *zeitgeist*: in the beginning-to-middle of the 20th century, the Gestalt school of psychology was in full swing. Its core idea has now become a popular adage, *The whole is greater than the sum of its parts*, meant to convey the idea that our experience of any reality cannot be equated to or described by a simple adding of its parts – it exceeds it. Thus came about Asch's novel conceptualization of forming impressions, relying on the concept of *holistic*, and *cohesion*. In short, for the author, we do not strive for *any* impression, but for one that *makes sense*. This implies an active effort by the perceiver that takes a flow of information and organizes it into a coherent impression, establishing the perceiver as a *de facto* active organizing agent.

Asch (1946, p. 258), then, asks "[h]ow do the several characteristics function together to produce an impression of one person? What principles regulate this process?" To answer this, Asch resorted to new methods of inquiry: in ten now famous experiments, he developed a simple procedure consisting of reading a list of traits, supposedly belonging to a person, to his participants, who were instructed to form an impression of this person. They would subsequently write down this impression in a short paragraph and choose, from a list of pairs of opposing attributes (e.g., *generous–ungenerous*, *reliable–unreliable*, *strong–weak*), those that, in their opinion, would better describe the target person. Between the experiments, the list is changed in different ways, to different results – thus, by simple iterating on a core method, the said principles that substantiate impression formation are uncovered. With such variations on a theme, Asch put several hypotheses to the test and demonstrated different principles of impression formation: for example, some traits, deemed *central* (e.g., *warm* and *cold*), would play a more decisive role, exerting more influence on the final impression when compared to other *peripheral* traits. In the same set of studies (Asch, 1946), the author shows how listing traits either in a positive-to-negative order, or its reverse, leads to corresponding positive or negative impressions – a *primacy effect* (distinct from the effect of the same name, coined by Ebbinghaus, 1964, which describes an advantage in recall of items that were presented at the beginning of a list), in which the first perceived items have disproportionate weight and influence in the final impression.

Regardless of the Gestalt movement being short lived, the relevance of Asch's experiments and conclusions is undeniable: impressions are firmly established as cohesive units; each trait, *central* or *peripheral* can impact others in different ways; traits do not exist in a vacuum but assume different meanings from their context and their interrelations. Regarding this context, Asch himself (1946) notes that participants, when describing the target person (of whom they heard only a list of selected traits), ascribe traits that were never read to them – information they added themselves. Some even reporting an understanding that traits tend to co-occur: "These qualities initiate other qualities. A man who is warm would be friendly, consequently happy. If he is intelligent, he would be honest" (Asch, 1946, p. 277, Experiment IX). The *context*, then, is larger than the list of traits; it includes beliefs about trait co-occurence (i.e., individuals' implicit theories of personality, Bruner & Tagiuri, 1954; Schneider, 1973).

Subsequent authors tried to further formalize the principles of impression formation, some to the point of mathematizing them. For example, Cronbach (1955, p. 186) explicitly proposes that individuals' implicit beliefs about trait co-occurrences are a matter of "means, variances, and covariances"; likewise, Wishner (1960), expanding on Asch's (1946) trait lists methods, proposed that a quantifiable correlation is the underlying force behind trait *centrality*.

At the forefront of the mathematizing effort (and aligned with Psychology's cognitive revolution), Anderson (1962, 1981) set out to study how likeability ratings of individuals for a target person could be predicted by a *weighted arithmetic mean* of the individual likeability of trait-adjectives – and expressed as a formula. Anderson's Information Integration Theory models precisely how trait-adjectives are predictably integrated into an overall impression:

> "From an integration-theoretical perspective, the operations of valuation and integration are central in the personality adjective task. The adjectives are discrete verbal signs that have to be interpreted and made meaningful within the cognitive system of the individual subject. Furthermore, they have to be integrated into some more or less unitary

impression of the person. Valuation and integration are thus primary problems for investigation" (Anderson, 1981, p. 103)

The author's formal approach allowed for an empirical approach that, compared to Asch's holistic perspective, was distinctly quantitative and additive both the value of each trait and the overall evaluation were quantified through the use of rating scales that assessed their likeability, and the weight given to each trait was thus possible to calculate. Furthermore, this body of work provided reinterpretations of Asch's (1946) main ideas, such as *centrality* and *changes of meaning* (N. H. Anderson, 1965b, 1965a; N. H. Anderson & Barrios, 1961; N. H. Anderson & Hubert, 1963; N. H. Anderson & Norman, 1964). While Asch's and Anderson's approach may seem antithetical (the former holistic, the latter quantitative and formulaic), at the core of their work we find a fundamental agreement: impression formation is a dynamic process that heavily relies on the interaction between different bits of information. Anderson, like many researchers post-Asch, was not questioning this assumption; rather, the effort to mathematize Asch's findings was in fact deepening them, shedding further light, uncovering the more intricate principles behind Asch's (1946) original principles, and, by consequence, rendering them predictable.

Another common aspect of the research reviewed so far is how an impression was conceptualized, which is also expressed in the methods these authors used. In Asch (1946), for example, participants reported their impressions by selecting the applicable trait for each pair of traits in a list. This would include pairs such as *generous–ungenerous*, *reliable–unreliable*, *strong–weak*, in all cases representing the negative and positive ends of a given trait. Additionally, participants wrote their impressions in the form of short paragraphs, from which the author determined whether these were generally positive or negative. Likewise, Anderson (1962) pre-tested the appraisal of every trait for their likeability, simultaneously using this measure for participants' overall impression of the target person. In short, impressions seem to be, up until this point, researched and operationalized as a point on a negative-to-positive continuum on one or more dimensions – effectively an evaluation (attitude).

Interest in the integration of information supporting the impressions of others, however, did not disappear, but was instead picked up by social cognitivists who developed the field of person perception, simultaneously shifting the focus from the evaluation to our cognitive representation and organization of the impression itself and the information that sustains it.

Chapter II.
Impressions of people as mental representations

The advent of the cognitive revolution had a significant impact on psychology. We have seen the adoption of the "human mind as an information processor" metaphor exemplified by Anderson's *Information Integration Theory* (1981); another inherited theoretical concept was the idea that knowledge had to be *represented* somehow. A definitive overarching definition of what is a representation of knowledge is a philosophical and epistemological challenge that, naturally, falls far outside the scope of this text. We can perhaps go as far as to say, with some assurance, that "[f]irst, and most importantly, representations *represent something*", and that in this process they can also *misrepresent* (Morgan, 2014, p. 217). In general, representing seems to equate to a sort of mapping of objects from the external world in cognitive space, such that "at least some relations in the represented world are structurally preserved" (Palmer, 1978, p. 226).

Like most objects of study in psychology, representations do not manifest themselves directly. To demonstrate their existence, their properties, their structure, psychologists make use of different tools and methods such as the frequency of certain behaviors (e.g., recalls) or the time it takes to react to certain stimuli (Neisser, 1967). Through such methods, for example, came the theory that knowledge is organized in an associative semantic network (Collins & Loftus, 1975), which states that represented concepts are nodes, interconnected in a network, with semantically related concepts being more strongly linked. Encountering (or thinking of) an object activates its corresponding represented node in the network, and this activation spreads to other linked concepts as strongly and as fast as the links are strong. These linked concepts are activated if a certain threshold is met. This framework helps to explain why, for example, when thinking of "pets" we quickly list "dog, cat, fish" – all concepts strongly linked with "pets" that were consequently activated. Thinking of "cat" may immediately bring the concept of "dog" to mind, as these are also strongly linked between themselves. For someone who has twelve pet iguanas, "pet" might activate "iguana" with ease, as that association was repeatedly established through experience, and its threshold of activation consequently lowered.

Different types of cognitive representations were theorized – mental models (Ford & Johnson-Laird, 1985) to schemas, scripts and semantic associative networks (Anderson, 1996; Fiske & Taylor, 1991) were supporting social cognitive approaches. In the following subsections, we will explore how the socio-cognitive paradigm, rooted in semantic networks, has shaped theoretical frameworks and influenced the conceptualization of impressions of others.

I. Impressions as mental representations

After the period of intensive focus on impressions as information integration and what algorithm would best describe this process (Anderson, 1981), later authors continued Asch's (1946) interest in the impression as something cohesive and coherent. What concerned the authors of this distinct stage of person perception research? In sum, they asked how information about a social target (social information) is organized in memory – a novel interest, absent in the research reviewed so far. And social information is, in short, anything about a person, any unit of information about them, that can be observed – behavior, trait, even physical characteristics – whether observed directly, in interaction, or described to us (Hamilton, 1981; Hamilton et al., 1980b). As such, impressions were taken to be "a perceiver's organized cognitive representation of another person" (Hamilton et al., 1980b, p. 123), yet another purposely broad definition that aims to convey that many different cognitive processes can be involved in the establishing of such a representation.

A semantic associative network (Collins & Loftus, 1975) was at the basis of this understanding of our representations of others as something organized – a person would be represented as a node (Anderson & Hastie, 1974), with the aforementioned units of social information associated with it .The main methodological tools used to demonstrate how we organize that social information in memory were recall task outputs and reaction-time measurements (e.g., Anderson & Hastie, 1974). Of utmost importance was the idea that the social information – that is, information we perceive about others – "is not processed into a vacuum" (Hamilton et al., 1980b, p. 123). Instead, we apply a pre-existing template abstracted from our own previous experiences of understanding others. In this sense, an implicit personality theory includes a set of cognitive categories into which information is sorted at encoding.

Organization, then, is imposed by the perceiving individual. One way to make this evident is through the analysis of clustering in free recall – a technique built on the assumption that if organization is indeed imposed by the individual over randomly ordered information, it should impact the order in which items are recalled. The reasoning behind this assumption is relatively simple: if *n* number of items are organized neatly according to categories, then a) more items should be recalled, by virtue of the strategy, made available by organization, of recalling from one category until it is exhausted before moving on to another, and b) items of the same category will tendentially be recalled together, as they have been organized so. We can ask what will constitute the categories under which the information is organized – what is the organizing principle in person perception? *Person*, for example, already seen to be represented as nodes under which we store social information, can perform the role of an organizing principle: after reading a randomized list of nine items of information, three per well-known individuals, participants recalled them freely and effectively recall the items grouped around the different persons they described, demonstrated by high clustering scores (Bousfield & Bousfield, 1966), indicating greater-than-chance levels of clustering (see pilot study, Hamilton, 1981).

II. Traits as organizing principles

It is a likely scenario in everyday life (influencing the methodological approach to person perception research) that we perceive, directly or indirectly, multiple items of information about a single person. In this situation the person-node is not the organizing principle – *traits* are (Hamilton, 1981). Traits are usually equated to personality characteristics, relatively stable. They are also categories by themselves: multiple behaviors express a single trait. Furthermore, we quickly and effortlessly infer and attribute a trait to a person that displays a trait-related behavior (Winter & Uleman, 1984). If traits are categories of behaviors, and if they are evoked by these behaviors, conditions are met for a reliable organizing principle when perceiving another. These notions were tested in a number of studies described by Hamilton and colleagues (1980b). Three assumptions constitute their jump-off point: first, our impressions are as coherent as possible; second, each unit of information is related to other units known about the target person; third, an associative network of links between these units is established, benefiting recall. From this, they stipulate that those operating under an impression-formation processing goal would recall more items than those perceiving the same information under, for example, a standard memory task. Furthermore, recognizing that individuals carry their own implicit theories of personality and make use of them in processing information about others, they expect participants under impression-formation contexts to organize information "in terms of meaningful schematic categories concerned with personality content" (Hamilton et al., 1980b, p. 129). The studies share a basic procedure: participants are told that they are performing either an impression-formation task (i.e., their task is to form an impression of the person described), or a memory task (i.e., they should try and remember as many behavior descriptions as possible). They then read sentences describing a person's behavior (e.g., "rented an apartment near where he works"). These sentences evoke one of four specific trait-categories: *social* (e.g., "had a party for some friends last week"), *intellectual* (e.g., "checked some books out of the library"), *athletic* (e.g., "jogs every morning before going to work"), and *religious* (e.g., "volunteered to teach a Sunday school class at his church"). After a short distractor task, a free-recall task is administered. Results show the expected evidence of organization: participants under impression-formation instructions not only recall significantly more items than those instructed to simply memorize (Hamilton et al., 1980a), but also tend to cluster their recalls around the trait-categories (Hamilton et al., 1979).

There is an underlying issue in the analysis of clustering in recall. The first step of the analysis is to go through participants' outputs from the free recall task and code each recall as the category it belongs to. These categories are *a priori*, assumed or determined by the experimenters. Other categories are possible – can "volunteered to teach a Sunday school class" not be seen as *social*? Thus, while the highest scores indicate that the *a priori* categories match participant perceptions, the low scores pose an interpretative problem: there is no way to tell whether participants did not organize at all or organized in accordance with different perceived categories – *subjective organization*. Hamilton and Lim (1979) posed this question regarding participants in the memory condition. Using a measure of subjective organization (Sternberg & Tulving, 1977), namely the bi-directional pair frequency analysis (which looks into how many times two items are recalled together across the different trials), the authors report a main effect of trials – organization increases as trials progress, for both experimental groups indistinctly;

whether instructed to form impressions or to simply memorize. All participants organize this information in memory, with the former making use of personality-relevant categories. In short, they differ not in amount of organization, but in quality: those under impression formation instructions made use of a very effective schema for person-related information – traits – while those under memory instructions reach organization by alternative, less efficient, rules.

In summary, we see traits acting as an organizing principle when we form impressions of others, determining how items of social information about a person are stored in memory. We see its influence in recalls: improving recall performance generally but also clustering remembered material by the trait they exemplify and evoke.

The centrality of traits in this organizing process was the starting point for Hastie and Kumar (1979), who worked with information that would be either congruent or incongruent with expectations regarding an overall impression, and providing further evidence of organization by demonstrating the *incongruence effect* – the phenomenon by which individuals tend to recall items incongruent with their impression of another with higher frequency rather than congruent items. Demonstrations of this effect were done over three experiments, all sharing the same procedure: participants were asked to form an impression of a target person from a list of eight trait-adjectives (for example, to create an impression of *intelligent*, this list would be composed of *intelligent, clever, bright, smart*, *quick, wise*, *knowledgeable*); they would subsequently read a list of twenty behavioral descriptions, some of which congruent with the previously created impression (e.g., “won the chess tournament”), some incongruent (e.g., “made the same mistake three times”), and some neutral (e.g., “took the elevator to the third floor”). The main measure was the output of the free-recall task the participants performed afterwards, consisting of writing down all the behaviors they could remember. From this output, proportions of congruent, incongruent, and neutral items were calculated. The lists in the first study were composed of twelve congruent, four incongruent, and four neutral behaviors; the results were unequivocal: a clear mnesic advantage for incongruent items (with subsequent studies showing this effect to be stronger with lower proportions of incongruent items, and for incongruent items in central positions on the list).

In light of these results, the authors advance tentative explanations based on previous memory theories (e.g., the Human Associative Memory model, HAM; Anderson & Bower, 1974), while leaving the door open to "some currently unspecified alternative [that] will provide the most satisfactory account of these results" (Hastie & Kumar, 1979, p. 36). This new alternative – the Associative Network Model of Person Perception (Hastie, 1980; Srull, 1981; Srull et al., 1985; Srull & Wyer, 1989) – would soon emerge, accommodating these results and those of subsequent research that explored different variables associated with the incongruence effect (e.g., extremity of the incongruent behavior, delays between study and recall) and established it as a robust phenomenon (see Hastie, 1980). At the core of this person memory model is the assumption that "the probability of retrieving a particular item should be a function of the number (or strength) of associative paths that have been formed during encoding" (Srull, 1981, p. 441). Under this assumption, Hastie and Kumar's (1979) incongruent items would have benefitted from more inter-item connectivity when compared to their congruent or neutral counterparts. This is intelligible under the light of one pillar of impression formation research: that perceivers attempt to create an impression that makes sense. To make sense of a behavior that is opposed to a previous impression or expectation of a person, that behavior must "receive extensive consideration during encoding" (Hastie, 1980, p. 156) – that is, we wonder why and how this unexpected behavior fits into our expectations. This extensive consideration consists of multiple comparisons of the incongruent item with other items – congruent or incongruent –, thus resulting in a relatively higher number of inter-item links (e.g., as shown in Sherman & Hamilton, 1994) and, consequently, a relatively higher probability of being recalled as activation, initiated at the person-node, runs along these associative links. It is easier to get somewhere into which many paths lead.

From Srull and Wyer's (1989) formalization of the model we can thus derive: that congruent items only link to incongruent items and the person-node; that incongruent items link both to other incongruent but also to congruent items, as well as the person-node; that irrelevant items do not connect to other items; and that congruent items, even when more numerous, have an inferior number of pathways that lead to them when compared to incongruent items. Research has provided convergence evidence of the validity of the model, such as Srull's (1981) experiments, designed specifically to test its assumptions and predictions: for example, that irrelevant items are the least recalled (even compared to congruent items); that an impression formation processing goal should lead to better overall recall rates; that conditional recalls of two congruent or incongruent items is less likely that cross-congruency paired recalls; or that the conditional probability of recalling an incongruent item after a congruent one if larger than that of recalling a congruent item after an incongruent one (see also Srull et al., 1985). Furthermore, the model's applicability was also extended to different conditions, such as the perception of both singular individuals as well as groups (Wyer & Gordon, 1982), or by settings expectations through a description of the target-person as belonging to a social group (Wyer & Martin, 1986). Meta-analytic reviews further confirmed the solidity of this associative model of person memory, reporting the advantage of schema-inconsistent material in recall, as well as the effects of multiple moderating variables (Rojahn & Pettigrew, 1992; Stangor & McMillan, 1992); particularly, it was evidenced that conditions that promote elaborative encoding of such schema-inconsistent information lead to benefits in its recall (e.g., the processing goal to form accurate and complete impressions, in which the motivation to resolve incongruencies between behaviors and expectations is high).

In short, the literature reviewed in this section underscores a historical shift in how impressions and the perception of others are conceptualized and researched. While the previous focus was on the evaluative outcome of an impression, that component, while not necessarily discarded, is not the main object of enquiry within the social cognitive approach. Instead, picking up on Asch's (1946) legacy – that we perceive others as a cohesive whole –, researchers looked into *the information* about others, how it is represented in memory, how every unit of information is placed and interconnected to others, how trait-congruency affects this organization. As we will see, this focus on the knowledge and its structure was a novel contribution from the field of social cognition, and person perception specifically, yet to be established in the field of attitudes.

Chapter III.
Attitudes as mental representations

In the previous chapter we described a componential conceptualization of attitudes, reliant on the affective-behavioral-cognitive triad – either as direct components of an attitude (tripartite, M. J. Rosenberg et al., 1960), or their reframing as different informational sources of an attitude (neotripartite, Zanna & Rempel, 1988). Other approaches reflect a specific interest in how attitudes are cognitively represented. This chapter will outline examples of such representational attitude theories, while outlining how these examples differ from the approaches to the representation of a person as an attitudinal object.

A representational conceptualization of attitudes implies, essentially, that attitudes are stored in memory as a relatively independent entity – that is, available for recruitment and use when and if needed. Perhaps the more prominent representational model of attitude is Fazio's (1995, 2007; Fazio et al., 1982) two-node conceptualization of an attitude as an object-evaluation association. Within this framework, as we hold cognitive representations of objects, we similarly hold an evaluative summary of representation affective tone linked to the representation of the object. When we encounter or think of the object, this summary evaluation can be retrieved. Whether it is retrieved, or how quickly and easily this happens – in short, how *accessible* the attitude is – depends on the strength of the object-evaluation association. Furthermore, according to the author, it is the more readily accessible attitudes that are the most impactful (e.g., on information processing, guiding behavior; Fazio, 1989). As to the nature of the summary evaluation that is linked to the object, the model also incorporates the basic assumptions of the neotripartite view of attitudes (Zanna & Rempel, 1988) in which attitudes draw from any or all of the categories of information: cognitions, affect, and behavioral information (Fazio, 1989, 2007). The basic concept of the model – the object-evaluation association, and its strength determining the attitude's accessibility – was demonstrated by Fazio and colleagues (1982) in a set of experiments. The first two experiments established that participants evaluate puzzles more quickly in a response-time task when they learn about them through direct experience rather than by watching a video (Experiment 1) and when they consolidate their attitudes by reporting them on a rating scale before the response-time task rather than afterward (Experiment 2). The third experiment tests the assumption that accessibility is driven by the strength of the object-evaluation association and examines whether repeated expression of an attitude enhances its accessibility. Participants reported their evaluation of puzzles either once or three times after learning about the puzzles via video, then performing the response-time task. Whether by means of direct experience, of an opportunity to consolidate attitudes, or of repeatedly expressing an attitude, the added accessibility "enhances the speed and ease with which one can retrieve his/her attitude toward the object from memory" (Fazio et al., 1982, p. 352).

An alternative view of what is the structure of an attitude is provided by Fabrigar and Wegener (2010, pp. 178–179). These authors approach the concept trough a social cognition lens, defining an attitude as "a type of knowledge structure stored in memory" (an example of which is detailed in Chapter IV), and describing it as "an object-evaluation association and the knowledge structures linked to it in memory". This means that we can expect to find attitudes embedded in a network of many other qualities of represented items; on attitudes as knowledge structures, Pratkanis (1989, p. 90) lists "arguments for and against a given proposition, esoteric and technical knowledge towards the object, goals and wishes about the object, the social meaning of adopting a certain attitude position, personal episodes and events, and other pieces of information". Fabrigar and Wegener (2010) also note that structure can equally refer to structural *properties* of an attitude and the knowledge structures linked to it. For example, accessibility, which we have seen to be a direct consequence of the strength of the object-evaluation association. Likewise, *attitudinal ambivalence* can also be a direct consequence of a particular attitudinal structure, namely that in which the representation of the object is linked simultaneously with positive and negative evaluations (for reviews of research on these and other structural properties, see Albarracín et al., 2008; Fabrigar et al., 2005; Fabrigar & Wegener, 2010). This approach saw empirical support in research based on the dual-attitude (Wilson et al., 2000); for example, the PAST model (Petty et al., 2006) – Past Attitudes Still There – conceptualizes ambivalence as the dual association, of the same object, to opposing evaluations. Using both deliberative and automatic measures, the authors show that, after receiving information contradicting a previous attitude, the explicit (deliberative) measure reflects the rejection of the old attitude and adoption of the new one, while the implicit (automatic) measure shows a lag in updating, reflecting a continued association with both the old and new evaluations.

One example of a representational model that also addresses ambivalence, built on Fazio’s (1995, 2007; Fazio et al., 1982) two-node conceptualization, is the Meta-Cognitive Model (Briñol et al., 2019; Petty, 2006), which adds a validity tag – a meta-cognition. Validity tags are associated, with varying strength, with the evaluation-object association, and work as instruments used by individuals to endorse or reject the core association. These meta-cognitions, such as certainty or doubt, are, in general, thoughts about one’s own thoughts, their validity or reliability. These are higher-order processes that can influence whether we endorse our attitudes. This endorsing seems applicable, mostly, to explicit attitudes, but may influence implicit attitudes when this perceived validity is automatically activated by virtue of its own association strength – another structural property. Under this proposal, the model also deals with attitude ambivalence as a consequence of structure, by conceptualizing it as attitudinal objects linked with both positive and negative evaluations, with these connections themselves associated with separate validity tags. Ambivalent attitudes are, then, those in which both evaluations linked to an object (positive and negative) have effectively similar validity tags attached (e.g., confidence in both evaluations) with the required strength of association for them to be retrieved, and the evaluation consequently endorsed.

An important feature of the structural approaches reviewed above is their focus on advancing the theorization of persuasion. While the field primarily investigates the impact of various variables on the effectiveness of persuasive communications, its ultimate aim is to explain the processes underlying attitude change. Historically, the field has been guided by dual-process models (e.g., Chaiken, 1980; Petty & Cacioppo, 1986), which propose that attitudes can be changed either through peripheral cues unrelated to the argument or centrally through careful elaboration of the message's content. A key concept in this framework is *elaboration*—the degree of relational thinking about the positives and negatives of an object. Elaboration is influenced by both the cognitive capacity and motivational resources of the individual (Petty & Cacioppo, 1986). When elaboration occurs, it is assumed to alter the structure of attitudes, integrating more cognitively demanding changes in object-related knowledge with evaluative summaries. This integration is particularly significant because it strengthens attitudes, enhancing their predictive power for behavior.

Not all interest in attitudinal structure is of the intra-attitude variety. For example, Judd and Krosnick's (1989, p. 99) interest in attitude structure define it "by reference to constellations of attitudes rather than by reference to components in a single attitude"; it is within this system of interconnected attitudes that the authors explore inter-attitudinal consistency. Their model is firmly within the associative network framework, assuming represented objects linked between them and linked to evaluations. Additionally, links themselves describe implicational relations: positive, in which one represented object implies the other linked object; negative, in which a represented object implies the opposite of the other linked object – very much in-line with Heider's (1958) Balance Theory. By representing an object's associated evaluation and its implication relations with the mathematical plus and minus signs, the model defines consistent attitudes as those in which the product of the two object's evaluation sign and their implication relation is positive; conversely, inconsistent attitudes are those in which this formula's output is negative.

Alternative approaches to "attitude structure" do not conceptualize it as a representation but as a process that emerges from represented knowledge. These approaches focus on the structure of issue-relevant information in memory. An example of such information and its relevance is *working knowledge* (Biek et al., 1996; Wood, 1982; Wood et al., 1995), the issue-relevant knowledge that can be easily recalled by individuals when faced with an attitudinal object. Mobilizing knowledge has been shown to be a factor in how easily individuals resist counter-persuasion by allowing them to engage in biased processing in defense of pre-existing attitudes (Biek et al., 1996) by the generation of counter-arguments (Wood, 1982). Furthermore, those without this array of knowledge at their disposal are more reliant on cues contained in the persuasive message (Wood, 1982). Wood (1982, p. 198) highlights a tradition in which an attitude is considered to be constructed "on-the-spot"; we are now in *constructivist* territory, where it is assumed that attitudes are derived from "whatever information happens to be accessible at the time" (Albarracín et al., 2008, p. 19), and determined by it, under the assumptions that individuals do not have a stored evaluation to activate. This is, then, a contextual-dependent attitude that will remain stable for as long as this context – working knowledge – is stable itself. Representational models are advantageous for, among other reasons, their simplicity, pragmatism, and consensual focus on the evaluative aspects; constructivist approaches, however, can account for the noise in the signal, while simultaneously proposing a model reliant on a reasonable assumption of adaptability to context. In this sense, context effects are simply the expected result of an adaptative system (for a more complete discussion on this approach, see Schwarz, 2007; Schwarz & Bohner, 2001).

A more extreme version of the "on-the-spot" perspective of attitudes would be the Potentiated Recruitment Framework (Bassili & Brown, 2005), a framework proposed in response to the multiple empirical observations of context effects, in which reported attitudes appeared sensitive to a multitude of contextual variables – for example, the order in which multiple questions are presented (Schwarz & Sudman, 1992); it assumes attitude malleability as the norm, not the exception. What distinguishes the Potentiated Recruitment Framework is the proposal that attitudes, and meaning in general, is *configural* – that is, not an autonomous entity represented and stored in memory, even if abstracted from whatever cognitions were activated in an associative network, but a configuration of a given set of elements of a network that are "recruited". One way to think of it is to consider a digital clock: when turned off, none of the elements that compose the number are active (Figure 1, panel A). However, throughout the day, different elements are recruited to display the current time (panels B and C). We read different information at different times – or, more accurately, in different configurations or recruited elements. The meaning we extract from each configuration exists for as long as that configuration also exists, disappears when the configuration changes, and returns when that configuration is repeated.

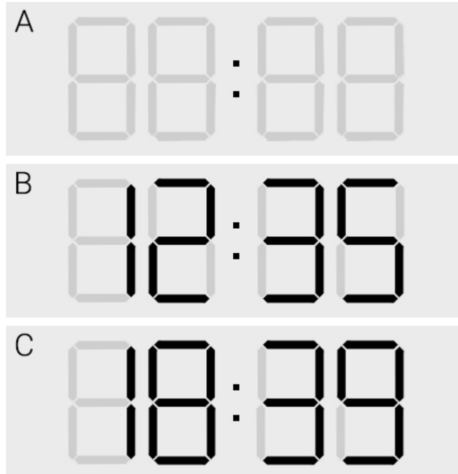

Figure 1. The face of the digital clock, with different meanings achieved by recruiting different elements of a network: A shows no recruitment (i.e., the network itself). B and C show different configurations from which we extract different information.

In the terminology of the Potentiated Recruitment Framework, each of these elements is called a *microconcept* – "molecular elements of knowledge that yield meaning when assembled into networks with other microconcepts" (Bassili & Brown, 2005, p. 552). These are housed in the *attitudinal cognitorium* – akin to the cognitive space containing the network of connections – and can be *potentiated* (a framework-specific term for activation) by multiple sources, such as past experience, previous activation, spread of activation, or other eliciting conditions such as the characteristics of the attitudinal object or the phrasing of a question. Like with the example of the digital clock, in which one element can be recruited to configure different numbers, a microconcept can also be recruited for different configurations of potentiated microconcepts; for the authors, these configurations are the attitudes themselves – an emerging property of the activity of networks. The framework does away with the necessity of having knowledge, or other knowledge structures, connected in any relatively permanent way to an object, relying instead of what configuration the presence of an object (or the phrasing of a question, or any other eliciting condition) effects in the network – "meaning and feelings emerge from these patterns of activation in a configural manner" (Bassili & Brown, 2005, p. 553). This provides the model with intrinsic flexibility: configurations emerge and disappear in reaction to the specifics of the context; microconcepts are combined and recombined; the instability or malleability of an attitudes is only natural – part of the signal, not the noise.

In sum, from this short review of the field, we can conclude that much like the study of impressions and person perception, the study of attitudes conceptualized its object in representational terms. The difference between the field of person perception and the structural approaches to attitudes is what they assume to be represented: the former looked principally at the knowledge about the target person, how it is disposed and organized in memory, the different associations between informational items, and the structuring principles that determine these associations and their resulting consequences; the latter maintained the focus and proposed representational conceptualizations of the evaluation itself, and investigated its structural properties as derived from how this evaluation is linked to the object and other relevant structures (such as validity tags). A more direct link between the two fields is established with the processual approaches to attitude. These proposals include a relevant role for target-relevant knowledge; either calling it *working knowledge* or *microconcepts*, these advance a more malleable perspective of attitudes – constructed dynamically based on available (or recruited) information, which itself varies with a wide range of contextual influences (e.g., phrasing). Despite this inclusion of relevant, object-related information in these "on-the-spot" approaches, the study of attitudes remains distinct from the social-cognitive approaches to impression formation in one key aspect: the empirical approach to how this knowledge about a target is organized, and what principles guide their placement and the associations they establish in an associative network.

Chapter IV.

Impressions of non-person objects as mental representations

I. Structural approach to impressions of non-person objects

Not that there was no interest in how knowledge about a target is placed in cognitive space, how this placement is related to an evaluation, and under what guiding principles, with non-person objects. One example is the model proposed by Kitayama and Burnstein (1989), focused on the relationship between opinion and memory in *on-line* opinion formation (i.e., when the evaluative opinion is formed as the relevant information is presented and perceived, Hastie & Park, 1986), and attempting to make sense of contradictory results regarding what is best remembered and why.

The use of the term "opinion" is not an accident. The model draws heavily from models of person perception, even stating that opinion formation happens as described by associative network models (Hastie, 1980; Srull & Wyer, 1989): through elaborative encoding of target-relevant information in order to obtain an evaluative gist (i.e., the opinion itself), with the added result that "arguments become interconnected" (Kitayama & Burnstein, 1989, p. 93). However, as hinted by the use of the term "arguments", the model is not restricted to the perception of other people, neither are the principles stated to guide the relationship between opinion and memory.

What makes this model *structural* in its approach is the centrality of two concepts: associative density and structural centrality. These concepts come into play after the attitude, or gist or opinion, is abstracted from the perceived target-relevant information. It is after this step that, according to this model, organization is established using this gist as its basis. The first concept, associative density, "refers to the extent to which arguments are connected to each other"; consequently, to say that a particular item of information has higher associative density is to say that is has a higher number of connections to other items in memory. On the other hand, structural centrality refers to an item's position in relation to the gist itself – in short, whether it is connected directly to the evaluative opinion (Kitayama & Burnstein, 1989, p. 92). In sum, after the abstraction of the gist, each informational item in memory will vary in how much it is connected to other items and in the degree to which it is associated with the gist. The authors further state that the opinion-congruent items are the most likely to be connected directly to the opinion itself, reflecting their importance in the opinion's maintenance.

This set of assumptions allows for predictions regarding the type of items one can expect to benefit from advantages in recall when an individual perceives an attitudinal object. The evaluative gist, "usually the first thing that comes to mind" (Kitayama & Burnstein, 1989, p. 93), is initially activated; activation then spreads through existing associations to other items in the mnesic network. One obvious consequence is that opinion-congruent information has priority of entry into working memory, by virtue of being connected directly to the activated gist; this, so far, matches predictions of models of person perception (Srull, 1981; Srull et al., 1985; Srull & Wyer, 1989). A novel introduction by the model is *when* memory-search is terminated. In short, when for any reason it is ended prematurely, we should expect opinion-congruent information to be better recalled; on the other hand, if the search is exhaustive (as is typical of recall tasks), both congruent and incongruent items are as likely to be remember – and since the congruent have priority of entry into working memory, the incongruent simply wait their turn until activation recruits them.

This seems contrary to associative network models of person perception and, particularly, to the incongruence effect (Hastie & Kumar, 1979). The authors note, however, that a series of factors can modulate these predictions, such as a pre-existing opinion (e.g., a stereotype). In this case, elaborative encoding happens as described in person perception models (Srull, 1981), with the goal of discounting or reinterpreting information in ways that do not happen with opinion-congruent information. In the model's term, incongruent items now benefit from higher associative density. In sum, "when an opinion is formed *on-line* and when memory-search is exhaustive, congruent arguments need *not* be recalled better than incongruent arguments" (Kitayama & Burnstein, 1989, p. 95).

The model's predictions were empirically put to the test, manipulating not only the items' congruency with the opinion or gist, but also their informativeness, as well as how much participants incurred in elaborative processing of the material and making use of the typical recall tasks. Results confirm the model: under this exhaustive memory-search, no benefit in recall was detected, either for opinion-congruent or incongruent information. In parallel, opinion-congruent items did show priority of entry into working memory, being recalled first; consequently, and as predicted, had memory-search stopped after a certain time, a congruency effect would have been detected.

The empirical support for the model continues, encompassing memory-based opinion formation. In this scenario, less elaborative encoding is performed. This leads to lower associative density for opinion-incongruence information, which translated to fewer associative pathways to activate such information. Thus, both as predicted in the model and as demonstrated empirically, no mnesic benefit is reported whatsoever even when memory-search is exhaustive.

The value of Kitayama and Burnstein's (1989) model is that it is written as an attempt to expand person perception literature's methods and theoretical contributions to all objects. In this sense, it talks of neither attitude nor of impressions, but of evaluative gists and opinion formation that apply to a much broader category of objects other than people. It is, then, a relevant step in bridging attitude and social cognition theories.

II. Inferring personality of non-person objects: the tourist destination

The literature reviewed in Chapter II highlights personality, and the trait-behavior relationship, as a crucial aspect in the organization of target-relevant information in memory. In short, personality acts as a template, with traits assuming the role of categories according to which observed behaviors are stored in memory in different degrees of association to one another. It is known that individuals attribute personality to more than other people, and often to non-person objects. This is recognized in both common sense (most people, if not everyone, can recall instances of traits being used to describe object, such as "my stubborn computer" or "a lonely tree") and in literature – some attempting to study the phenomenon itself (Epley et al., 2007; Gray et al., 2007; Waytz et al., 2010), others focused on the human-robot relationship (Duffy, 2003; Nass et al., 1994), and others focused on the consequences of perceiving products as humanized (Aggarwal & McGill, 2007; Mourey et al., 2017; Shao et al., 2020).

An acute awareness of this human tendency to see personality in non-person objects is seen in marketeers who strive to create and convey specific personalities for their brands. As such, the field of brand personality (Llanos-Herrera & Merigo, 2018; MacInnis & Folkes, 2017; Saeed et al., 2021) was developed, much rooted in the pioneering work by Aaker's (Aaker, 1997; Aaker & Fournier, 1995) Brand Personality Scale (BPS) – as the name implies, a validated scale that measures a brand's association with a set of human traits (e.g., "intelligent", "imaginative", "confident", "masculine"). From this work, and with explicit inspiration from the Big Five personality scale (John et al., 1991), the author reports that brands can be assessed along a five-dimensional personality: *sincerity*, *excitement*, *competence*, *sophistication*, and *ruggedness* (see also Eisend & Stokburger-Sauer, 2013).

A testament to this work's influence is that it has been, critiqued, reviewed, and adapted to different contexts or purposes (e.g., Bosnjak et al., 2007; Geuens et al., 2009; Kumar, 2018; Mutsikiwa & Eniola, 2024). One of the adaptations of Aaker's BPS (1997) was its translation to tourist destinations – destination personality, or the set of human traits attributed to a given tourist destination (Ekinci & Hosany, 2006). This reflects an increasingly competitive global tourism reality in which instruments that allow for the precise communication of a destination as a brand, to shape and evoke specific perceptions by potential visitors, are crucial. In this translation of brand personality to destination personality many efforts were made, with the majority relying on Aaker's (1997) BPS (for a review, see Nella, 2023; Zulfiqar et al., 2022) and its trait-based approach; essentially, to have participants rate how much they perceive a given destination to have each trait from a list (e.g., Murphy, Benckendorff, et al., 2007; Murphy, Moscardo, et al., 2007, p. 201; Usakli & Baloglu, 2011). Different scales resulted, highlighting the relative conceptual volatility within the destination personality field. Among these, a noteworthy contribution was that of Ekinci and Hosany (2006), who propose a three-dimensional destination personality, with each dimension containing specific facets: *sincerity* (reliable, sincere, intelligent, successful, wholesome), *excitement* (exciting, daring, original, spirited), and *conviviality* (friendly, family oriented, charming). What makes this contribution noteworthy is that, unlike most studies, the authors did not focus on a single destination; instead, participants were asked to recall and use a destination they had recently visited, thus generating a more universally applicable conceptualization of destination personality. Additionally, convergent evidence of this same three-dimensional structure was reported in independent studies (e.g., Opoku, 2009; Sahin & Baloglu, 2011; Usakli & Baloglu, 2011), as well as detected when the focus was a specific destination (e.g., Turkey, Ekinci et al., 2007).

Tourist destinations present themselves, then, as a particularly apt object for the goals of this project. First, it is perceived to hold a personality, thus providing a template known to be used to organize target-relevant information in memory under conditions of impression formation; second, and most importantly, this personality, like with humans, is dimensional, and as such assumed to act as a category into which we naturally cluster different features of a destination – akin to how a person's behavior is clustered around traits. Yet undetermined is what these behavior-like features are.

In conclusion, in this literature review, we highlighted work that reflects the evolution of research on impressions and attitudes: from their evaluative roots to their reconceptualization as structured mental representations. The conceptual shifts underscore the growing recognition of the intricate ways in which social and non-social targets are perceived, organized, and encoded in memory. Of particular note is the extension of these frameworks to non-person objects, which reveals the human tendency to attribute personality and structure even to non-person entities. The subsequent experimental chapters build on this, aiming to empirically investigate whether and how impressions of non-person targets make use of the available perception of personality as a template that directs the organization of target-related information in memory. With these studies, we aim to bridge the theoretical and methodological gap between the literatures on person perception and that of attitudes; along the way, we hope to expand our understanding of both the shared and the distinct mechanisms behind mnesic organization, when a personality template is available, between a person and a non-person object.

Section II:

Empirical Section

Overview of Empirical Studies

This thesis is structured around three empirical chapters, each designed to investigate different aspects of the mnesic organization of object-relevant information when forming evaluative impressions of non-person objects. Using theories and methods from person perception, each chapter progressively builds on the previous, aiming to establish whether and how perceived personality serves as an organizing principle in memory.

Empirical Chapter I had a methodological objective: to address a gap in destination personality research by identifying and validating the features that instantiate each of its three dimensions – excitement, sincerity/genuineness, and conviviality. While existing literature relies exclusively on traits, studies in person perception use trait-diagnostic behaviors; thus the necessity for a set of destination features that correspond to personality traits. Across four studies, participants first generated features associated with high and low levels of each dimension, followed by independent assessments of their representativeness and diagnosticity.

Empirical Chapter II addressed the core question of mnesic structure by testing whether object-relevant information is organized in memory according to perceived personality dimensions. Using the *exciting* dimension of destination personality, this chapter adapted methods from person perception research. Specifically, we adapt Hastie and Kumar's (1979) experimental paradigm in detecting the incongruence effect: in an impression-formation condition, participants are presented with trait descriptors of a person (in our case, a tourist destination) in order to experimentally set expectations, and subsequently perform an impression formation task by reading a set of behaviors – some expectation-congruent, some expectation-incongruent. In a memory condition, participants are asked to simply memorize a list of behaviors. For both, a recall task follows. From the outputs of this recall task, we examine indicators of structured encoding and recall: overall recall performance, a sign or organized (and this easier to recall) mnesic structure typical of impression formation conditions; the incongruence effect, the preferential recall of expectation-incongruent information that attests to elaborative encoding; and conditional recall probabilities of paired recalls, evidence of non-random associative patterns that reflect structure.

Empirical Chapter III directly tested the interplay between trait-based organization and valence by removing perceived valence differences while maintaining variations in trait representativity. A forced-expectation paradigm generated a new set of unexciting but positively valenced features, allowing a direct test of whether perceived personality could guide memory organization independently of valence.

Together, these empirical chapters demonstrate that the perception of personality in non-person objects shapes how object-relevant information is encoded, stored, and retrieved.

Empirical Chapter I.

Destination personality beyond traits: Features behind the inference of personality

Introduction

A growing body of research on destination branding highlights that destinations are perceived to have "personality". That entities other than people can be perceived to have personality (and be associated with typically human traits) is not new for marketers who create such perceptions for brands – *brand personality*, the "set of human characteristics associated with a brand" (Aaker, 1997, p. 347; for reviews, see Llanos-Herrera & Merigo, 2018; MacInnis & Folkes, 2017; Saeed et al., 2021). Thus, it is unsurprising that tourist destinations are also perceived to have a personality – places are often ascribed human traits: exciting, energetic, genuine, etc. Research has picked up on this, showing that destinations are also perceived to have a personality and are associated with human characteristics (Ekinci & Hosany, 2006; Hanna et al., 2021; Hosany et al., 2006). For example, Lam and Ryan (2020) report that Macau is perceived as "friendly", "open-minded", "a middle-age and mature person", even "like a friend to me".

What does it mean to describe Macau as friendly? What features make it so? What is expected of a friendly city? We aim to provide information regarding which features of a destination fit its personality-defining traits. This is central to both understanding personality inference processes, and for interventions aiming to change how tourists perceive a destination's personality, as communicating a strong personality can impact attitudes towards the destination (Hultman et al., 2017)

Literature Review

The concept of a destination's personality refers to how individuals perceive destinations as having characteristics, or traits, that make them unique, akin to individuals. These "traits" are expected to help individuals perceive the destination, form expectations, generate emotions and behaviors (e.g., Murphy, Beckendorff et al., 2007; Papadimitriou et al., 2015) as if the destination was a person. Perceived personality of others shapes perceptions, understanding, guiding our social interactions and decisions (Weiß et al., 2023).

When proposing the scientific study of personality, Gordon Allport (1927) referred to personality as a constellation of traits. He contends that traits are fundamental, enduring qualities that guide our behavior and emphasize individual uniqueness. Since then, Psychology has approached personality from different perspectives. Three of these perspectives are relevant for destination personality. Directly following Allport's' approach, most research has been focused on understanding the dimensions that structure our perception of traits (e.g., McCrae & Costa, 2008). Research also follows a functional perspective, referring to the consequences of perceiving personality, for instance, on our attitudes towards the target (Bekk & Spörrle, 2010). Social cognition offers a processual perspective, trying to understand from what stimuli we infer the traits associated with the target (trait inferences; Ebbesen, 1981; Garcia-Marques et al., 2023; Winter & Uleman, 1984) and how we organize such information in our memory (Hamilton et al., 1980; Hastie et al., 2014). The extension of the study of personality to a destination has partially followed these perspectives.

Under an understanding of traits as latent to human behavior, human-personality approaches propose different models, ranging from the "BigOne" (Musek, 2007) to the "Big Seven" (Benet & Waller, 1995). The most recognized model suggests five personality dimensions (see McCrae & Costa, 2008) while other models, relying on perceived structures, suggest that individuals tend to infer traits structured solely around two dimensions (Abele et al., 2008; Fiske et al., 2007; Trapnell & Paulhus, 2012). To infer these structures, the most common methodology consists of using lists of personality traits, subsequently asking participants to rate how strongly they perceive the target to have those traits. How participants structure those traits is informative regarding the underlying personality dimensions.

Pioneering the field of brand personality, Aaker (1997) drew from this dimensional perspective and methodology and developed the Brand Personality Scale (BPS), by analyzing the dimensions associated with how perceivers attributed each of a set of "personality traits" to brands. Five dimensions emerged: *sincerity*, *excitement*, *competence*, *sophistication*, *ruggedness* (see also Eisend & Stokburger-Sauer, 2013). The same approach to tourism destinations (akin to a brand; Ekinci & Hosany, 2006) suggests that that Aaker's (1997) personality dimensions did not translate unchanged from brands to destinations, as different dimensions were reported in research (e.g., Hanna & Rowley, 2019; Hosany et al., 2006; Usakli & Baloglu, 2011).

Consequently, different scales were created, focusing either on specific destinations or specific populations (Davies et al., 2018; Hanna et al., 2021; Hassan et al., 2024; Pan et al., 2017; Rojas-Méndez et al., 2013). Ekinci and Hosany's (2006) proposal is that destination personality is mapped on to three dimensions. As in human personality studies, the authors reach these dimensions by asking participants to recall their last visited destination (allowing variability) and deciding which of 27 traits describe it. They conclude on three dimensions, further subdivided in facets: *sincerity* (reliable, sincere, intelligent, successful, wholesome), *excitement* (exciting, daring, original, spirited), and *conviviality* (friendly, family oriented, charming). These three dimensions, they propose, capture the variability of traits attributed to different destinations (see also Hosany et al., 2006). The same three-factor structure, and the same facets, was then found when measuring the perceived personality of the Mediterranean region of Turkey (Ekinci et al., 2007). Further research corroborates this three-dimensional destination personality structure (Chen & Phou, 2013; Opoku, 2009; Sahin & Baloglu, 2011; Usakli & Baloglu, 2011).

The functional approaches found in human personality research focus on the ways in which we perceive others' personalities, and how it guides our expectations and behaviors (e.g., Chan et al., 2012; Malle & Holbrook, 2012). Likewise, both brand personality and destination personality literature have approached this question. Brand personality guides brand attitudes (e.g., Lee & Kang, 2013; Madrigal & Boush, 2008) and purchase intention (e.g., Wang & Yang, 2011). Destination personality guides tourist behaviors (e.g., Atay et al., 2020; Papadimitriou et al., 2015). For instance, Hultman and colleagues (2016) show that destination personality can promote tourist satisfaction, tourist–destination identification, positive word-of-mouth, and revisiting intentions.

Social cognition, assuming traits as the building-blocks of personality, focuses on the process by which they are inferred from behavior, thus helping in the organization of our impression of a target. As such, the understanding of the behavior-trait link is crucial (e.g., Bargh & Thein, 1985; Crocker et al., 1983; Garcia-Marques & Hamilton, 1996; Hastie, 1984; McConnell et al., 1994; Oliveira et al., 2019; Srull et al., 1985; Srull & Wyer, 1989; Stern et al., 1984). Research has thus sought to understand how traits manifest in corresponding behaviors (Borkenau et al., 2004; Church et al., 2008; Mehl et al., 2006; Wu & Clark, 2003).

Brand personality studies offer some information on feature-personality links, suggesting the relevance of features such as color (Baxter et al., 2018; Boudreaux & Palmer, 2007), type font (Grohmann et al., 2013), and brand name (Baxter et al., 2018), with specific personalities. However, we find no such approach regarding destination personality. It is not known which features of a destination participants derive their perceptions of its specific personality from. Destination branding has either focused on a destination's personality, or its attributes, such as beaches, mountains, or beautiful scenery, in their promotional campaigns (Usakli & Baloglu, 2011; Murphy, Moscardo et al., 2007) but has provided no information on how one is linked to the other, in order to understand how these attributes lead to inferences of specific personalities.

To test whether it is possible to identify the tangible features or characteristics associated with a destination's personality, we assess a set of such features and subject them to a multi-stage validation process, which reveals both their unique association with the original personality dimension (in contrast with the other dimensions), and their association with real-world destinations known to be characterized by the personality dimension under analysis. As such, we develop a study in four stages, through which we are able to guarantee a validated set of features of destinations perceived to represent three destination personality dimensions, and to set apart features that are either ambiguous or non-diagnostic of a personality trait.

Overview of the studies

Different data sets organized into three studies provide support to the development and validation of a set of features of destinations perceived to represent three destination personality dimensions. Different lists are offered as outputs as supplemental material (a general list of features evaluated in their level of representativeness, and a list describing how 80 capitals are associated to each personality dimension, see https://osf.io/g9af4).

Study 1 follows a forward-backward strategy to support a claim for an association between a trait and a feature, encompassing two stages. In the first, participants generated descriptive sentences of destination features that could be described as each of the three dimensions. In the second stage, an independent sample of participants rated the association of those features with their original dimensions. We use this data to reduce the evaluated features to a set of the most representative, used in the subsequent studies.

Study 2 reinforced the identified associations by assessing how much a feature is associated with its original versus an alternative dimension. We address this general hypothesis, adding detailed data concerning each specific feature to inform readers on how each feature can discriminate the specific personality dimension from other dimensions.

Study 3 takes the set of features from Study 2 and assesses the likelihood with which each feature is perceived as a characteristic of a city that was previously evaluated as high or low in the respective personality dimension. Accordingly, a first sub-study assesses typical exemplars of each personality dimension, by determining the capitals more frequently associated with each dimension. From this analysis, we selected a set of touristic destinations that score both high and low in all dimensions. In the second sub-study, participants reported how much they thought each of these cities could be characterized by each of the previously identified features (those used in Study 2). Thus, Study 3 offers a match between personality dimensions, identified features, and their typical exemplars (destinations). General analyses are provided in this paper, with the details for individual features made available in the supplemental material document (https://osf.io/g9af4).

Study 1

Study 1.1. aimed to generate a set of sentences that describe specific features of a destination that instantiate the two poles (*high* and *low*) of each of the three dimensions: *conviviality*, *excitement,* and *genuine/sincerity*[1].

Study 1.2. tested if the previously identified features associate with their original dimensions correctly (being representative of the *high* or *low* level of the dimension). From this

[1] The studies reported in this paper used samples of Portuguese participants. The word *sincere*, less commonly used for destinations, was replaced by the more common *genuine*.

analysis we can select those that represent the highest and lowest level of each dimension to integrate subsequent studies.

Study 1.1. Generating features from dimensions

Participants. An online survey was conducted, asking participants to write down features of previously visited destinations that they considered representative of each of the three dimensions. 18 participants of both genders were recruited (*Prolific*, 2014) and paid for their participation at a rate of 6 GBP/hour.

Procedure. Upon accessing the online survey (*Qualtrics*, 2005) and agreeing to an informed consent form, participants read the instructions. These explained that touristic destinations can often be seen as very (or very little) exciting, genuine, or convivial. In the next section, participants were asked to "describe typical characteristics of a touristic destination that you consider very…/very little…" (representativeness of *high/low* levels of the dimension) of each of the three dimensions. Participants wrote their answers in up to 10 fields. Everyone provided descriptions for both scenarios of all three dimensions.

Results

Descriptions mentioning multiple aspects of the same location were split into different descriptions; those that were identical in meaning were considered duplicates. The final set contained 184 descriptions – 60 *sincere*, 60 *convivial,* and 64 *exciting*. Examples can be seen in Table 1 (for a full list, see supplemental materials, https://osf.io/g9af4).

Table 1.
Examples of features provided by participants for each personality dimension.

Sincerity/Genuine

Very sincerity/genuine	Very little sincerity/genuine
Many locals speak the local dialect.	There is no tourist information.

The quality of life is good.	Flights there are frequently canceled.
The population enjoys living there.	Stores do not comply with opening hours.
Conviviality	
Very convivial	Very little convivial
Everyone greets you with a smile.	There is prejudice against certain ethnicities.
There is a welcoming environment around us.	Drivers honk and shout a lot.
Locals like to help tourists.	Playgrounds are run-down.
Excitement	
Very exciting	Very little exciting
It has easy access to wonderful beaches.	There is a lot of garbage in natural spaces.
Restaurants have authentic and typical regional menus.	Walking along the riverbanks is not allowed.
There are almost daily outdoor concerts.	Tourists cannot rent boats.

Study 1.2. Evaluating features within its original dimension

This study aimed to understand how participants perceive each feature in relation to dimension it was generated from (Study 1.1.), thus guaranteeing a set of features representing the *high* and *low* levels of each dimension. This study includes two phases. In Phase 1, all 184 sentences (Study 1.1.) were evaluated. However, since not all generated sentences were likely to be evaluated according to our expectations, and to maintain a counterbalanced set of features within each dimension, Phase 2 was also planned to evaluate new sentences if necessary.

Phase 1

Method

Participants. An online survey (*Qualtrics*, 2005) was conducted with 81 participants (age $\bar{x}$ = 21, SD = 7.9; 60 women) recruited (*Prolific*, 2014) and paid at a rate of 6 GBP/hour.

Materials. The full set of 184 features from Study 1.1.

Procedure. Upon accessing the survey, participants read the goals of the study and agreed to an informed consent form. The study initiated by offering participants information about the three dimensions in which tourist destinations are usually classified: *exciting*, *sincere*, *convivial*, and defining them based on their respective facets (Ekinci & Hosany, 2006). Subsequently, participants were randomly assigned to consider a single dimension (e.g., “think of the characteristic *convivial*”) and asked to “rate, in this dimension, each of the descriptions of the touristic destination shown below”. Only the subset of features belonging to that dimension (Study 1.1.) was shown, along with a seven-point rating scale anchored on “1 – Not at all” and “7 – Very” relative to the respective dimension.

Results

Global level of analysis

We first address the general hypothesis that the set of features defined as representative of the dimension’s *high* level would be strongly associated with it, as opposed to the set of features defined as representative of the dimension’s *low* level. Data was analyzed within a mixed model, with the original dimension, the representativeness of a *high* versus *low* level of the dimension, and participants as factors. Features and participant were included as random factors; features were a higher source of variability (variance = 0.53, *SD* = .73, *ICC* = .19) than participants (variance = .15, *SD* = .34, *ICC* = .06).

Figure 2 shows the average rating of the features according to the dimension they originally represented and whether they represented the high or low level of that dimension (*high* and *low*.

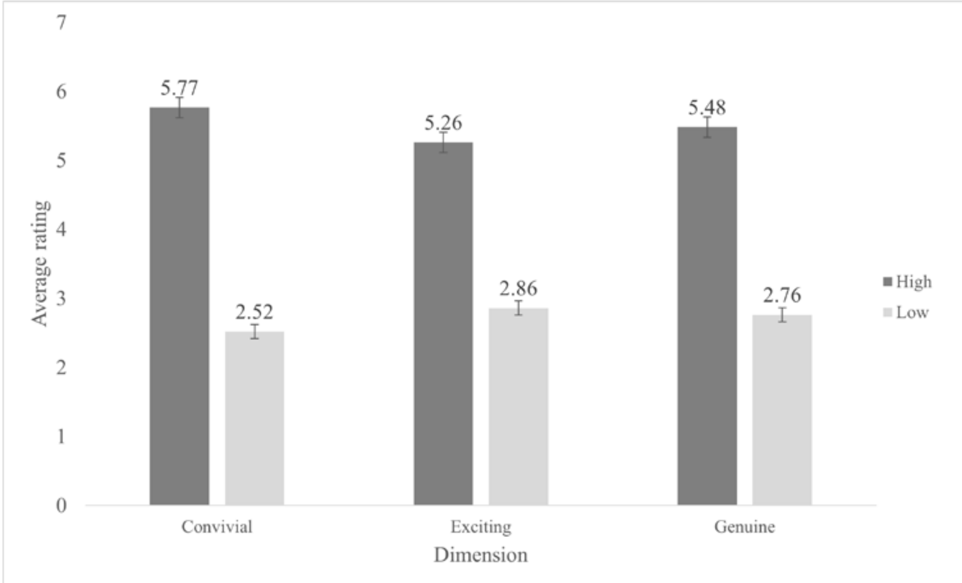

Figure 2. Ratings by representativeness (high vs. low level of the dimension) and feature's original dimension (bottom axis).

Results show the expected main effect of the high versus low level of the dimension representativity, $F(1, 177) = 377.64$, $p < .001$, $\eta^2_p = .68$, and a significant interaction, $F(2, 177) = 27.17$, $p < .001$, $\eta^2_p = .24$, suggesting that although, in general, sentences were distinguished according to their representativeness of the high vs. low levels of the dimension ($M = 5.15$, $SD = 1.78$ vs. $M = 2.90$, $SD = 1.75$), this distinction varied between dimensions; *genuine/sincerity* features were less discriminated in their representativeness. No main effect of dimension was observed, $F(2, 177) = 0.75$, $p = .475$, $\eta^2_p = .00$.

Feature level of analysis

We aim to know how well features represent their specific dimensions. We thus analyzed data at the feature level, calculating descriptive statistics and confidence intervals each feature's ratings (detailed in the supplemental material, https://osf.io/g9af4).

We observe low dispersion in participants' ratings (*SD* range: [.68; 2.39]; IC amplitude range: [.53; 1.85]), which suggests high consensus in their ratings. Additionally, Cronbach-alpha indexes corroborate that participants were consistent in their evaluation of features associated with both the *convivial* and *exciting* dimensions, both for the "representative of the high level of the dimension" (*convivial* alpha = .92 and *exciting* alpha = .80) and "representative of the low level of the dimension" (*convivial* alpha = .74 and *exciting* alpha = .77) features. This did not occur for the *sincerity/genuine* dimension (alpha < .50), making the number of properly evaluated features unbalanced across dimensions. Consequently, we conduct Phase 2.

Phase 2

Method

In this phase we replicated previous procedures only for the *genuine/sincerity* dimension. A total of 60 sentences were first generated based on the facets (Ekinci & Hosany, 2006) and evaluated by seven judges. (33 *very sincerity/genuine*; 27 *very little sincerity/genuine)*. These sentences were then evaluated as in Phase 1, in their dimension, by a sample of 40 undergraduate students (M_{age} = 23.5, *SD* = 8.3; 95% female).

Results

Evaluations of features representing high levels of *sincerity*/*genuine* and of features representing low levels *sincerity*/*genuine* were analyzed with a mixed model, with participants and features as random factors and the representative status of the features (of the high or low level of the dimension) as fixed factors. Results show a main effect of the fixed factor, $F(1, 58) = 537$, $p < .001$, , $\eta^2_p = .90$, suggesting that, as expected, sentences representing low levels of *sincerity/genuine* were evaluated as significantly lower (*M* = 2.76, *SD* = 1.77) than those representing *high* levels (*M* = 5.48, *SD* = 1.58).

Descriptive analysis and confidence intervals for each feature's ratings show all features scoring congruently as representative of the *low* or *high* levels of the dimension (see supplemental materials, https://osf.io/g9af4); for most features, cross-participant agreement was high (with SDs between 1.04 and 2.03, 75% below 1.81). Additionally, Cronbach-alpha indexes corroborate that participants were consistently evaluating as *high* the sentences that represent the high level of the dimension (C-alpha =.93) and as *low* those representing the low level of the dimension (C-alpha =.91) of the *genuine/sincerity* dimension.

Conclusions

Study 1.1. establishes a general list of sentences describing features that participants associate with the *high* and *low* levels of the personality dimensions. Study 1.2. shows this to be applicable to subset of those features, defined as the workable set, with 58 *convivial* (60 original sentences minus the 2 sentences that scored incongruently), 57 *exciting* (seven incongruently scoring sentences removed), and 60 *sincerity/genuine* features.

This workable set provided the first relevant output of this paper: a list of materials fit to support future research (enabling manipulation of personality-representative features, while also providing more ambiguous features).

Study 2

From the materials generated in Study 1, we selected the set of features that better represent the *high* and *low* levels of each dimension to assess their diagnosticity power (if represent their original dimension exclusively). This is necessary for the assumption that the feature's original dimension can be inferred from it. This, Study 2 assesses participant ratings of the perceived diagnosticity of each feature for the three dimensions.

Method

Participants. 79 undergraduates (87% female; M_{age} = 21.21, *SD* = 4.11) took part in exchange for course credit.

Materials. From Study 1's features, the ten with highest and lowest scores on each of the evaluated dimensions were selected (i.e., how much they represent the *highest* and *lowest* level of their original dimensions). These are shown in Table 2[2] (detailed scores in supplemental material, https://osf.io/g9af4).

Table 2
Selected features from Study 1

Exciting

High	Low
Museums are open all night on Saturdays.	There is a lot of garbage in natural spaces.
There are many different neighborhoods to explore.	The city center has a lot of car traffic.
There are festivals that last all night.	Restaurants all close very early.
It's a very multicultural city.	Walking along the riverbanks is not allowed.
There are always themed parties happening.	Tourists cannot rent boats.
It's an exotic culture, totally different.	Locals are uncommunicative.
You hear all kinds of music in the streets.	There are neighborhoods with very poor lighting.
Restaurants have authentic and typical regional menus.	Bars tend to close before 10 pm.
There are almost daily outdoor concerts.	On weekends, shops are closed.
It has easy access to wonderful beaches.	Locals don't go out or socialize at night.

Convivial

High	Low
Children don't pay at museums.	There's prejudice against certain ethnicities.
Everything offers discounts for families.	Libraries cannot have children's books.
It's common for a local to help a tourist looking at a map.	Many restaurants don't allow children.
The police are very polite.	Playgrounds are run-down.
Locals tell us stories of the city.	Drivers honk and shout a lot.
Everything has easy access for the elderly.	There are tourist-only spaces where locals cannot enter.
There is a welcoming environment around us.	Public toilets don't have diaper changing facilities.
Many activities promote interaction between generations.	People walk with their eyes on the ground.
Locals like to help tourists.	Prostitution is legal on all streets.
Everyone greets us with a smile.	Building accesses don't have ramps.
	There's prejudice against certain ethnicities.

Sincerity/Genuine

High	Low
Tourist information centers are very informative.	Tobacco is very cheap.
There are seasonal festivals every year.	Local handicrafts are "made in China".

[2] Due to a technical error while running the experiment, two features were not shown.

There are museums of historical-cultural handicrafts.	Cars do not stop at crosswalks.
Natural resources are used to generate energy.	There is no tourist information.
Planting trees has improved air quality.	Stores do not comply with opening hours.
Dishes still follow traditional recipes.	The metro is always closing for renovations.
Quality of life is good.	Many services have hidden fees.
The local population enjoys living there	
There are bikes/scooters to visit the city.	

Procedure. The study was conducted in the university laboratory using the Qualtrics survey platform (*Qualtrics*, 2005). Participants were welcomed to the lab in groups of five to ten and instructed to sit in individual open booths along the corridor. During the study, the experimenter waited in the corridor. After reading and agreeing to an informed consent form, participants read the instructions for the task provided on the computer screen. These informed participants that throughout the task they would see a set of 30 sentences that described different features of a touristic destination. Each sentence was presented in isolation on a screen; for each sentence, participants were asked to provide their opinion regarding how useful that feature would be to learn about a specific characteristic of a touristic destination (perceived diagnosticity). Participants received as an example the sentence, "The temperature is mild", and were asked to provide their opinion about how useful this information would be to determine whether a destination was or was not "Tropical". These instruction were reinforced, such that in the next screen they were reminded that their task was to evaluate "whether the sentences are useful to understand whether a destination has certain characteristics" and further examples were provided: "«The city is completely flat» helps to understand whether the city is «Mountainous»"; "«No one lives there» helps to understand whether the city is «Residencial»; "«The temperature is mild» does not help to understand whether the city is «Populous»".

Subsequently, participants advanced to the experimental task. On each screen they were prompted with the sentence "Consider the following feature of a destination:", (e.g., "Many residents speak in local dialect"). "This feature helps to understand whether a city is:". Below the sentence, in a random order, three adjectives – original dimension, one of the two other dimensions, and a filler-adjective ("Residential", "Coastal", "Plain", "Inner", or "Circular") – were presented alongside a rating scale anchored in "1 – Very little" and "7 – Very much". Also on the same screen, a second question asked for a forced decision regarding which of the three previously shown adjectives was the sentence more helpful to determine. “Other”, was included and always presented last.

Finally, participants entered general demographic information (gender, age), were thanked, and left the laboratory.

Results

Perceived diagnosticity ratings

We first analyzed whether the selected statements were, on average, able to discriminate levels of one dimension over the others. A mixed model analysis was conducted with the features' original dimension, representative status of the features (of the *high* or *low* level of the dimension), and the diagnostic dimensions evaluated as fixed factors (Appendix A, section 1.1). Feature and participant were incorporated into the analysis as random factors; participants were a higher source of variability (variance = 0.34, *SD* = 0.58, *ICC* = .10) than features (variance = 0.18, *SD* = 0.37, I*CC* = .04).

As expected, a main effect of the diagnostic dimension (i.e., the dimension the sentence was deemed more helpful to determine) emerged, $F(2, 50) = 42.65$, $p < .001$, $\eta^2_p = .63$. Contrast analysis suggest that this happens because features are seen as more helpful in determining whether a destination is characterized by the feature's original dimension (*M* = 4.17; *SD* = 2.35) than the other two alternative dimensions (*M* = 3.55, *SD* = 2.23) $t(50.1) = 5.51$, $p < .001$, $d = 1.56$), or the filler dimension (*M* = 2.64, *SD* = 2.02), $t(50) = -8.75$, $p < .001$, $d = -2.47$.

The diagnostic dimension effect was qualified by the feature's original dimension, $F(4, 50) = 3.10$, $p = .024$, suggesting that diagnosticity was not equal for the three dimensions. Contrast analyses show that diagnosticity is higher for the *exciting* and *convivial* features. These features were more helpful in determining their original dimensions (respectively: *M* = 4.36, *SD* = 2.33 and *M* = 4.38, *SD* = 2.38) than either with an alternative dimension (*exciting*: *M* = 3.64, *SD* = 2.20, $t(50.1) = 3.96$, $p < .001$, $d = 1.12$; *convivial*: *M* = 3.46, *SD* = 2.22, $t(50.1) = 5.16$, $p < .001$, $d = 1.46$) or the filler response option (*exciting*: *M* = 2.65, *SD* = 1.98, $t(50) = -6.62$ *p*

< .001, *d* = 1.87; *convivial*: and *M* = 2.50, *SD* = 2.01, *t*(50) = -6.79, *p* < .001, *d* = 1.92). However, although the same pattern occurred for the *sincerity/genuine* dimension, differences were not significant (original: *M* = 3.66, *SD* = 2.25; alternative: *M* = 3.55, *SD* = 2.29; filler: *M* = 2.79, *SD* = 2.07).

The diagnostic effect was also qualified by feature's representation status (of a *high* or *low* level of the dimension). This significant interaction, *F*(2, 50) = 19.99, *p* < .001, η^2_p = .44, shows that the diagnostic dimension effect was more clearly observed for sentences representative of a high level of the dimension *F*(2, 50) = 60.63, *p* < .001, η^2_p = .71, than of the low level, *F*(2, 50) = 4.71, *p* = .013, η^2_p = .16. A main effect of the feature's representation status (from *high* or *low* level of the dimension) also emerged, *F*(1, 49.7) = 217.77, *p* < .001, η^2_p = .81, with features representing high levels of the dimension obtaining generally higher scores (*M* = 4.22, *SD* = 2.28) than those of the low level (*M* = 2.63, *SD* = 2.00), *t*(49.7) = 14.8, *p* < .001, *d* = 4.2.

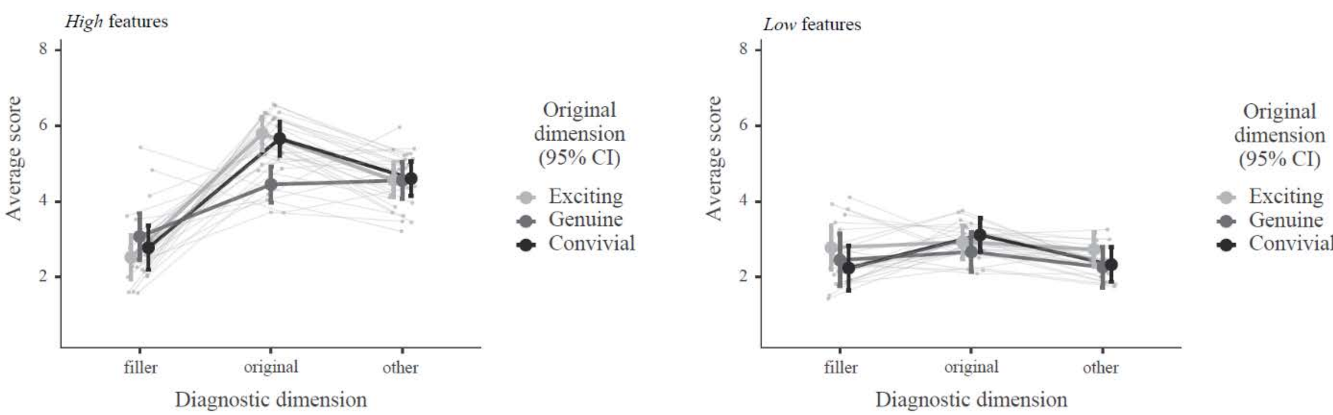

Figure 3. Average diagnosticity score for features of each dimension in each response option, with high representativeness features on the leftmost plot, low representativeness features on the right[3].

Finally, a significant three-way interaction was detected between diagnostic dimension, original dimension, and the feature's association with the levels of the dimension, *F*(4, 50) =

[3] While line plots are typically used for continuous data, they are used here for clarity purposes; namely, to make trends and interactions more apparent and readable.

2.69, p = .042, η^2_p = .21. Figure 3 clarifies that the previously described two-way interaction, in which the *high* features differed between the levels of diagnostic dimension, is not fully observed in the *sincerity/genuine* dimension; for this dimension, features representative of the high level did not score higher in their original dimension when compared to an alternative dimension.

Forced-choice

Forced-choice decisions were made between four options: the feature's original dimension, one of the other two personality dimensions (counterbalanced), a filler adjective, or the option "none".

Dummy coding decisions were analyzed within a mixed model with the features' original dimension, representative status of the features (of a *high* or *low* level of the dimension), and the four choice dimensions evaluated as fixed factors (Appendix A, section 1.2). Both feature and participant were incorporated into the analysis as random factors, but show null effects (variance = 00, *SD* = 00, ICC = 00); we maintain the analysis for consistency.

Matching occurred in the choice dimension, $F(3, 9456) = 151.70$, $p < .001$, $\eta^2_p = .04$; features were more associated with their original dimension (*M* = .40, *SD* = .49), than with other dimensions (*M* = .20, *SD* = .34), "none" (*M* = .22, *SD* = .42; $t(9456) = 14.99$, $p < .001$, $d = .30$), or the filler option (*M* = .18, *SD* = .38; $t(9456) = 19.04$, $p < .001$, $d = .40$). This was further qualified by the feature's original dimension, $F(6, 9456) = 34.3$, $p < .001$, $\eta^2_p = .02$. The matching pattern was clearer for the *exciting* (original: *M* = .44, *SD* = .50 alternative: *M* = .23, *SD* = .42; filler: *M* = .16, *SD* = .37; none: *M* = .18, *SD* = .38) and *convivial* (original: *M* = .50, *SD* = .50; alternative: *M* = .14, *SD* = .34; filler: *M* = .15, *SD* = .35; none: *M* = .22, *SD* = .41) features, but not for the *genuine/sincerity* dimension, where "filler" (*M* = .22, *SD* = .42) differs significantly from "none" (*M* = .28, *SD* = .45; $t(9456) = -2.85$, $p < .001$, $d = -.03$) and from "original" (*M* = .27, *SD* = .44; $t(9456) = -2.29$, $p < .001$, $d = -.05$), while "none" also differs significantly from "other" (*M* = .23, *SD* = .42; $t(9456) = 2.42$, $p < .001$, $d = -.05$).

A second interaction emerged, as matching within the choice dimension was also not equal across the feature's representative status, $F(3, 9456) = 197.3$, $p < .001$, $\eta^2_p = .06$. It is clearer for the *high* level features, with significant differences between "original" (M = .53, SD = .50) and "other" (M = .27, SD = .44; $t(9456) = 15.64$, $p < .001$, d = .32), and with "none" (M = .09, SD = .29; $t(9456) = -26.01$, $p < .001$, d = -.53) and "filler" (M = .12, SD = .32; $t(9456)$ = 24.49, $p < .001$, d = .50). It is less clear for the *low* level features where "none" is the most frequent choice (M = .36, SD = .48), differing significantly from "original" (M = .20, SD = .34; $t(9456) = 4.81$, $p < .001$, d = .10), from "other" (M = .20, SD = .34; $t(9456) = 13.61$, $p < .001$, d = .28) and from "filler" (M = .20, SD = .34; $t(9456) = -7.24$, $p < .001$, d = -.15).

A three-way interaction was significant, $F(6, 9456) = 13.4$, $p < .001$, $\eta^2_p = .08$, suggesting that we can only expect personality correspondent inferences for high *exciting* and *convivial* features. No matching is guaranteed for the remaining features.

Conclusions

Overall, results suggest that although features are perceived as associated with a specific dimension, not all features are equally able to underlie its inference; only features representative of a higher end of the dimension are perceived as diagnostic. Representativeness of a low level of the dimension is less likely to sustain personality inference processes. For example, an *exciting* feature is deemed helpful in determining how exciting a location is, but a less *exciting* feature will not clearly convey that the place is unexciting. Importantly, the fact that representing low levels of the dimension has low diagnosticity, increasing "none" responses, suggests that they are perceived to be uninformative of the personality of a destination. This will be expanded on in the general discussion.

Study 3

Study 2 established the exclusive link between features and their original dimension, showing this to be truer for the features representative of a high level of their dimension. Study 3 assesses whether the set of features isolated in Study 2 can be differentially associated with a tourist destination known to score high in the correspondent dimension.

The study integrates two sets of data and analyses. Study 3.1. assesses how tourist destinations (world capitals) were perceived regarding the three dimensions of personality. Study 3.2. tests the direct association of descriptive features with a capital previously reported to be highly evaluated in the corresponding personality dimension.

Study 3.1. Perceived personality of world capitals

Method

Participants. An online survey (*Qualtrics*, 2005) was conducted with 38 participants (42% female, 24% nonresponses; M_{age} = 37, *SD* = 12.09) recruited and paid at a rate of 6 GBP/hour (*Prolific*, 2014).

Materials. A list of 80 world capitals, randomly selected from a list of every world capital.

Procedure. Upon accessing the survey, reading about the goals of the research, and agreeing to an informed consent form, participants were instructed that they would see names of various world capitals, along with three adjectives (*exciting*, *sincere*, *convivial*). They were instructed to "decide, for each capital, in your opinion, how much the adjectives apply" and that there were no wrong answers; they should use whatever opinion they have of each city, even if they had never visited.

Subsequently, cities were presented one by one, in random order, along with its country (e.g., "Madrid, Spain"), and three rating scales (the personality dimensions). For example, for *exciting*, the rating scale ranged from "1 – Not exciting at all" to "7 – Very exciting", and similarly for the other dimensions. An added option, "No opinion", was added. The order with which the cities were presented was random. After rating the 80 cities participants were thanked for their participation

Results

To select the cities with high and low scores in the three dimensions, we averaged participant evaluations made on each dimension for each city. The evaluations of the 80 capitals constitute the second relevant output of this paper (see supplemental materials, https://osf.io/g9af4).

Four cities were selected: those that scored lower (*convivial* [1.77; 4.04]; *exciting* [3.00; 3.30]; *sincerity/genuine* [3.00; 3.95]) and higher (*convivial* [4.73; 6.00]; *exciting* [5.30; 6.17]; *sincerity/genuine* [5.30; 6.25]) in each dimension (Table 3).

Table 3
Perceived personality of cities that scored the lowest and highest for the three dimensions.

	Convival	Exciting	Sincere/Genuine
Baghdad, Iraq	1.77	3.25	3
Kabul, Afghanistan	1.95	3.09	3
Khartoum, Sudan	2.15	3	3
Luxembourg, Luxembourg	4.04	3.30	3.95
Madrid, Spain	5.77	5.53	5.30
Reykjavik, Iceland	4.73	5.30	6.25
Rome, Italy	6	6.14	5.69
Tokyo, Japan	4.75	6.17	5.79

Study 3.2. Matching features to destinations

Study 3.2. tests whether cities scoring high in one dimension are perceived to have the features that are representative of the *high* pole of that dimension (e.g., an *exciting* city should be strongly associated with *very exciting* features). Thus, we aim to provide converging evidence of the claim that the selected features operationalize a personality dimension and have a role in the personality inference process.

Method

Participants and design. 177 participants (77% female, 22% male, 1% non-respondents; M_{age} = 22.57, *SD* = 9.12) were recruited (*Prolific*, 2014) platform and paid at a rate of 6 GBP/hour. To avoid overloading participants, we opted for a Latin square design, defining eight sets of materials (a-g). Participants were randomly allocated to one set. In each, participants were shown three of the eight capitals (Study 3.1.); each capital was shown alongside the features of one of the three dimensions. For example, a participant assigned to group *a* would see “Tokyo, Japan” paired with features from the *convivial* dimension, followed by “Reykjavik, Iceland” paired with features from the *exciting* dimension, and finally “Rome, Italy” paired with features from the *genuine* dimension. Those in group *b* saw “Reykjavik, Iceland” paired with features from the *convivial* dimension, “Rome, Italy” paired with features from the *exciting* dimension, and “Madrid, Spain” paired with features from the *genuine* dimension.

Procedure. Upon accessing the survey, reading about the goals of the research, and agreeing to an informed consent form, participants were instructed that they would be shown “descriptions of various characteristics of touristic destinations” and asked to indicate how much they felt the characteristic described the specific city presented. It was made clear that there were no wrong responses and that they should respond even if they had not visited the city.

On each trial, a capital was presented alongside a feature. Participants were asked to rate how much they thought the sentence described the city, in a rating scale anchored in “1 – Does not describe at all” to “7 – Fully describes”. Trials were organized into three blocks. As each trial paired one city with features of one dimension, each block consisted of twenty trials (ten features representative of the *high*, and ten of the *low* level of the dimension), for a total of sixty trials across the three blocks. Between blocks, a screen informed them that they had completed part of the task, and that they should proceed when ready. After the three blocks, participants progressed to a second task in which they rate each of the eight capitals in the three dimensions.

Finally, participants provided demographic information, were thanked, and dismissed.

Results

The general analysis aimed to test if**,** on average**,** cities scoring high in one dimension were perceived to have features representative of that dimension when compared to cities scoring low. Participants' evaluations (how much each feature describes the destination) were thus analyzed within a mixed model examining the influence of dimension (feature's dimension), city personality (whether they had scored *high* or *low* in Study 3.1.), and the features' representativeness (of the *high* versus *low* level of the dimension) on participants' ratings (Appendix A, section 2). Features and participant were incorporated into the analysis as random factors; participants were a higher source of variability (v*ariance* = 0.33, *SD* = 0.58, *ICC* = .12) than features (*variance* = 0.21, *SD* = 0.46, *ICC* = .08).

The main effect of feature representativeness level, $F(1, 54) = 23.47$, $p < .001$, $\eta^2_p = .30$) corroborates that *high* features (*M* = 3.91, *SD* = 1.79) were more clearly attributed to a destination than *low* features (*M* = 3.29, *SD* = 1.73). The main effect of dimension, $F(2, 54) = 4.99$, $p = .010$, $\eta^2_p = .16$, occurred due to all evaluated cities being perceived to be higher in *sincerity/genuine* dimension (*M* = 3.84, *SD* = 1.81) than *exciting* (*M* = 3.60 *SD* = 1.78), and less in *convivial* (*M* = 3.37 *SD* = 1.74).

More importantly, we find the expected interaction between the *high* and *low* cities with the level of representativeness of *high* or *low* levels of dimension of each feature ($F(1, 10476) = 389.90$, $p < .001$, $\eta^2_p = .04$; see Figure 4); features that are representative of a higher level of the dimension are better at characterizing cities that scored high in that dimension (*M*= 4.23; *SD* = 1.76) than cities that score low (*M* = 3.56, *SD* = 1.75; $t(11.7) = -8.76$, $p < .001$). Also, features that are representative of a low level of a dimension characterize the cities that score low (*M* = 3.56, *SD* = 1.72) better than those scoring higher in that dimension (*M* = 3.06, *SD* = 1.70; $t(11.7) = 6.61$, $p < .001$).

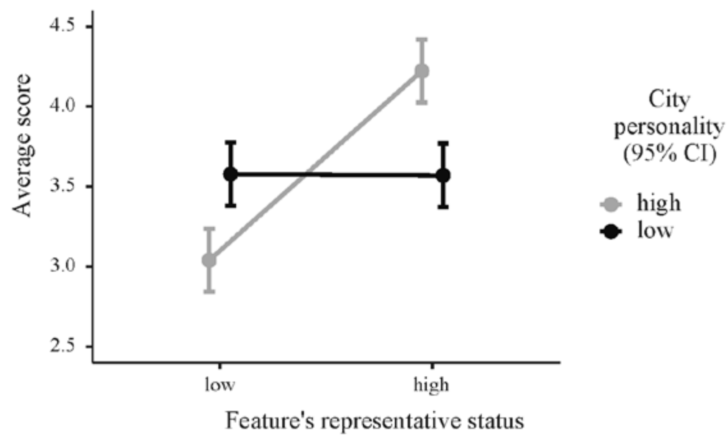

Figure 4. Average score of how much participants thought the feature described the city. Lines show the city's personality – whether it scored high or low in all three dimensions; the bottom axis shows whether the features represent the high or low end of their original dimension

This relationship was found to be further modulated by the dimension evaluated (three-way interaction, $F(1, 10654) = 6.29$, $p = .002$, $\eta^2_p = .00$). Although the pattern described above – a significant difference in *high* destinations between ratings for *high* and *low* features – is seen in all three dimensions, it is more pronounced for the *genuine* features (respectively, $M = 3.07$, $SD = 1.65$ vs. $M = 4.75$; $SD = 1.64$; $t(61.9) = 7.75$, $p < .001$, $d = 1.97$), than for either *convivial* ($M = 2.92$, $SD = 1.69$ vs. $M = 3.90$; $SD = 1.73$; $t(60.6) = 4.51$, $p < .001$, $d = 1.16$), or *exciting* features ($M = 3.19$, $SD = 1.75$ vs. $M = 4.08$; $SD = 1.79$; $t(60.7) = 4.09$, $p < .001$, $d = 1.05$).

Analysis of individual features is provided as supplemental material (https://osf.io/g9af4). In summary, performance is not equal for all features, with some being more prone than others to sustain the inference of personality dimensions that matched the stereotype previously associated with each capital. Table 4 shows the two features that better discriminate the corresponding cities in the two levels of each dimension.

Table 4
Features that best discriminate between cities in the high and low ends of each of the destination personality dimensions.

	High level	Low level
Exciting	There are almost daily outdoor concerts.	There are neighborhoods with very poor lighting.
	There are always themed parties happening.	There is a lot of garbage in natural spaces.
Convivial	Children don't pay at museums.	Prostitution is legal on all streets.
	There is a welcoming environment around us.	Playgrounds are run-down.
Genuine	The population enjoys living there.	Tobacco is very cheap.
	Every year there are seasonal festivals.	There is no tourist information.

Conclusions

Results corroborate research on destination personality, showing destinations are perceived as varying along the three-dimensional personality focused on this paper; likewise, only capitals scoring high on such dimensions are perceived as likely to have corresponding features: those representative of the dimension's high level. These cities were also perceived as unlikely to have features shown previously to be perceived as representative of the dimension's low levels. However, this matching seems to be asymmetrical for cities perceived to score low on such dimensions. For example, the *exciting* dimension: the clear matching effect shows that features deemed representative of high levels of excitement are more expected in exciting vs. unexciting destinations, and the reverse for features deemed representative of the dimension's low levels. However, whereas an exciting city is expected to have a higher proportion of exciting features, the reverse is not observed for an unexciting city.

General Discussion

We proposed to identify a set of features that operationalize the three personality dimensions and understand how individuals sustain inferences about destinations' personality. This was accomplished across three studies, whose outputs can support further research and help characterize cities in these three dimensions.

There are two noteworthy aspects regarding these outputs. First, the list of features evaluated in each personality dimension offers wide variability, allowing the manipulation of each dimension, as well as testing for their relevance to personality dimensions and for the ability to integrate marketing interventions. Equally relevant for future inquiries into destination personality is knowing that the three dimensions are not uniform. Our results show that whereas most of the *very exciting* features are exclusively helpful in determining whether a destination is *exciting*, the *genuine/sincerity* features tend to be used more holistically, informing the inference of all personality dimensions.

The capitals list also offers relevant insights. For instance, cities evaluated lower in all dimensions seem to be more unfamiliar to our population (Middle Eastern/African; see Bayrakli & Hafiz, 2022; Shaheed, 2021) than cities evaluated higher in all dimensions, suggesting that personality dimensions may be related to attitudes towards the cities which are known to be impacted by levels of familiarity (Zajonc, 1968).

Relevance of the data for the destination personality research

Perceived personality stems from inferential processes based on what characteristics are perceived in our target. Until now, no research has studied *how* we infer a destination's personality, partly due inexistent materials from which we make our impressions of a destination. Future research can now approach the personality dimensions' inferential processes.

Our studies already provide relevant insights. First, as expected if assumed that dimensions sustain memory structuring of the perception of destinations within a personality structure, we found consistency in how participants associate a feature with its original dimension. There is a socially shared understanding of which features represent a high and a lower level of a dimension. This highlights that *high* features (representative of high levels of the dimension) are effective in communicating a destination's personality; conversely, features representative of low levels are not (and should not be used to communicate a city's personality). Second, as expected if we assume personality to be dimensional, we found a list of features of destinations for each dimension. However, since they are not all prototypical of that dimension, varying in how much they represent them, they can help to gain insight into the process by which people infer the personality of a touristic destination, as some features are more likely than others to, or will more easily, sustain an inference of a destination's personality. Third, as expected if we assume that personality was inferred from this type of feature, we find them to be associated with capitals with matching personalities.

Relevant details in our data match what is known in human personality inferences literature and are worth discussing.

One match concerns the asymmetry between the perceived diagnosticity of features of each dimension's both levels (*high* and *low*); Study 2 shows that only features representing the *high* end are seen as diagnostic. This is observed in person perception and shown to be trait-dependent. For example, Skowronski and Carlston (1987) show that for ability-related traits, positive behaviors are seen are more diagnostic(i.e., "intelligent", as opposed to "stupid"); conversely, for morality-related traits, perceived diagnosticity is higher for negative (i.e., "honest", as opposed to "dishonest") behaviors. The trait-dependency of a behavior's (in our case, a feature's) diagnosticity can also be behind the performance of the *sincerity/genuine* features, which were not seen as diagnostic, regardless of whether they represented *high* or *low* levels.

A second match concerns the asymmetry found in the consistency with which features from one extreme of a dimension are expected in matching destinations, absent for the other extreme. This is evident in Study 3.2.: for destinations that scored *high* in all dimensions, participants expected the features associated with the *high* end of the dimensions (i.e., dimension-consistent features), but not those that represent its *low* end (dimension-inconsistent features); conversely, for destinations scoring *low* in all dimensions, both *high* and *low* features are expected equally. In other words, an *exciting* destination is expected to have many very exciting features, and few unexciting ones; whereas an unexciting destination can have both equally and still be classified as unexciting. We also find these asymmetrical expectations in Skowronski and Carlston (1987), where a dishonest behavior is less expected of an honest person, than its opposite– in other words, an honest person is expected to display many very honest behaviors and few dishonest ones; whereas a dishonest person can display both equally and still be seen as dishonest. Just as we are more demanding of an honest person's behavior (expecting mostly honest behaviors), we also seem to require a higher discrepancy from an exciting destination (with mostly exciting features) than from an unexciting destination (from which we expect both exciting and unexciting features equally).

A caveat in need of further research

One limitation, transversal to our studies, should be highlighted: the absence of a control for *valence*, a dimension known to structure our world (primacy of affect; Zajonc, 1984). The three destination personality dimensions used here (Ekinci & Hosany, 2006) result from applying Aaker's (1997) *Brand Personality Scale* to destinations. This scale, however, used 114 positively valenced traits, assuming that brands are typically positively evaluated and aiming to determine the relationship between perceived brand personality and likelihood of purchasing products or services. Consequently, the resulting dimensions only assume different levels of positivity, raising two issues: first, any negatively valenced dimension (e.g., can destinations be "impersonal", "industrial", or "aggressive"?) remains uncovered; second, under this framework, a destination can be anything from very exciting to completely unexciting (i.e., neutral), but cannot be ascertained to be *boring* – a negatively valenced counterpart. If the perception of a destination's personality shares any feature with the perception of a person's personality, this second point (i.e., neutrality) is relevant, as individuals believe that an actor is more likely to display moderate (vs. extreme) trait-inconsistent behaviors (Skowronsky and Carlston, 1987). Under this light (extremity being more diagnostic), it makes sense that, in Study 2, features that represent a low level of a dimension are not seen as exclusive to their original dimension.

Furthermore, diagnosticity is the preferred informational property of observed behaviors when individuals determine another's personality – more even than the likelihood of a behavior occurring under a given trait (Trope & Bassok, 1982, 1983; Bassok & Trope, 1984).

Further research can address these issues, bringing clarity to our data's distinct performances between features representative of a dimension's *high* and *low* levels, while simultaneously providing a more complete conceptualization of destination personality.

Conclusions

We provide the first validated instantiation of the three destination personality dimensions, in the form of features expected of destinations that score high or low in those dimensions, along with many relevant findings. First, we note that features representing a *high* level of a dimension are more diagnostic of their dimension (and convey it better) than those representing its *low* level.

We further observe that the three dimensions are not uniform: for some, features help diagnose their dimensions exclusively; for others, their features seem to be used holistically and have a role in inferring all the dimensions. Furthermore, we seem to expect of a destination scoring high on a dimension to mostly contain features highly represented of that dimension; conversely, for destinations scoring low on a dimension, we do not expect this same discrepancy.

A limitation hangs on the fact that literature on destination personality is rooted on the use of mostly positive traits; further research should focus on the role of valence.

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Empirical Chapter II

Does destination personality have a memory-structuring role?

Introduction

When describing touristic destinations, visitors often use dimensions that are akin to traits typically associated with people; for example, it would not be uncommon to hear that "Barcelona is exciting and original" or that "Iceland is a very genuine place". It seems, then, that people perceive destinations as having a "personality" of sorts. Destination marketing organizations (DMOs) have also picked up on this and have often responded by translating a destination's values into a personality to be subsequently promoted (e.g., the "adventurous" New Zealand, Morgan et al., 2003). Congruently, research has revealed the personality dimensions underlying the impression formation of tourism destinations (see Ekinci & Hosany, 2006; Hosany et al., 2006), identifying three relevant dimensions: excitement, sincerity, and conviviality, which were consistently found across different research (Ekinci et al., 2007; Opoku, 2009; Sahin & Baloglu, 2011; Usakli & Baloglu, 2011).

Pioneering work on non-human personality was developed by Aaker (1997; Aaker et al., 2001), specifically on Brand Personality, and suggested that a brand's personality varied along five dimensions: sincerity, excitement, competence, sophistication, and ruggedness. When it comes to brands, the way people form impressions of non-human objects mirrors well-established processes of human impression formation. This is the case, for instance, of brand trait-inference processes (e.g., Johar et al., 2005), which, under certain conditions, can happen between a brand and its users (Jerónimo et al., 2018).

However, no research has yet posed the question of whether and how the perceived personality of a non-human target imposes structuring of the relevant object-related information we receive. In human personality, it is documented that traits are the structuring, organizing principle of how information is stored in memory (Srull, 1981; Srull et al., 1985; Srull & Wyer, 1989), leading to observable effects such as better recall, clustering of recalled items around traits (Hamilton et al., 1980b, 1980a), or mnesic advantage for trait-incongruent items (Hastie & Kumar, 1979). Until now, no study has tested whether these organization indexes also occurred for non-human targets for which a personality is perceived, and specifically to touristic destinations. This knowledge has significant implications for the marketing and advertising of destinations, and the persuasion processes that underlie it, as discussed at the end of this paper.

Personality as an organizer of person information

Person perception literature has unveiled many core processes of how we form impressions of others (from the holistic, Asch, 1946, to the integrative perspective, Anderson, 1981). An impression encompasses an evaluative, “organized representation of another person” (Hamilton et al., 1980b, p. 123). Whether by observing someone’s behavior directly, or by hearing or reading about another, we integrate that knowledge into a cohesive, unitary evaluation of a person – how we store this information is not random: we impose structure. In this structuring, personality takes a pivotal role by offering us a usable template which, for example, clusters items associated with the same trait in memory (Hamilton et al., 1980b, 1980a). This imposed organization of received information in memory is evidenced by impression-formation goals’ superior overall recall when compared to when the goal is to simply memorize. The use of personality knowledge as a template in encoding information includes the effects of our trait-expectations about a target. For instance, evidence shows that when information opposes our expectations, it benefits from higher levels of recall – the incongruence effect (Hastie & Kumar, 1979). This effect was shown by inducing a trait-expectation in participants (e.g., “intelligent”) and having them read a list of behaviors: either congruent, incongruent, or irrelevant regarding the trait. In a subsequent free-recall task, incongruent behaviors were recalled at higher rates. The general idea is that the use of the personality as an encoding template is challenged by incongruent information, which demands increasing processing for an interpretation of its meaning, by means of comparing it to other information in memory (Srull, 1981; Srull et al., 1985; Srull & Wyer, 1989). To demonstrate this, Sherman and Hamilton (1994) used Hastie and Kumar’s (1979) paradigm: inducing expectation and presenting expectation-congruent and incongruent behaviors. However, periodically, after either a congruent or an incongruent behavior, a recognition test would occur: a behavior was shown, either a new one or one already learned. The authors observed that recognition times for already-learned behaviors were significantly faster when the test occurred after an incongruent versus a congruent behavior, suggesting that incongruent behaviors are indeed compared with other items in memory, establishing inter-item links, and facilitating activation that results in faster recognition.

It should be noted that it is not always easy to detect evidence of memory organization that relies on personality as a template. Likely because many other subprocesses compete for the position of supporting processing, not all processes of impression-formation of human targets show such evidence. Reviews (Rojahn & Pettigrew, 1992; Stangor & McMillan, 1992) show that such indicators of structure in memory appear conditionally, and are mitigated by moderators such as high object complexity (e.g., if the target is a group instead of a single person), insufficient degree of incongruence (as behaviours can vary in how incongruent with a trait they are perceived to be), or strength of expectation. In short, evidence of organization in memory such as the incongruence effect can be hard to detect even when the object is a person. With non-person objects, many of the moderators highlighted above are present; to name a few: impressions might not be established as naturally, or be of enough strength; traits, if perceived, may not act as organizing templates; for some objects, complexity may be far superior, etc. It is, then, an open empirical question whether object-relevant knowledge is organized in memory for non-person objects, and whether it happens above the threshold of detection.

Destination personality

The premise that destinations can parallel humans, in that they are perceived as having a personality, raises several interesting questions. The most direct question is whether this personality has the same dimensions of personality as humans (John et al., 1991). Foundational work on brand personality has already suggested a clear “No”. Aaker (1997; Aaker et al., 2001), when developing the Brand Personality Scale (BPS), suggested that a brand’s personality varied along five dimensions: *sincerity*, *excitement*, *competence*, *sophistication*, and *ruggedness*, distinct from the dimensions found in either the Big-five (John et al., 1991) or the Big-two (Fiske et al., 2007) theories of perceived human personality. Divergence was also found when authors attempted to unveil the personality dimensions underlying the impression formation of tourism destinations. When Ekinci and Hosany (2006; see also Hosany et al., 2006) asked participants to pick, out of 27 trait adjectives from Aaker’s (1997) BPS, those that describe a tourist destination, only three relevant dimensions in the destination personality emerged: *excitement*, *sincerity*, and *conviviality*. The use of destination personality and its dimension was observed in subsequent research (Sahin & Baloglu, 2011; Usakli & Baloglu, 2011). For one, destination personality was deemed a relevant factor in the successful communication of a destination's image, or brand: failure to communicate a specific, clear personality leads to differing perceptions among the audience, akin to communicating no personality at all (Opoku, 2009). Congruently, a destination's personality is tied to a visitor's intention to return, with the perception of conviviality playing an important role (Ekinci et al., 2007). Additionally, these personality dimensions have been shown to be distinctly associated to specific features of a destination – akin to how human traits are associated with specific behaviors – which, conversely, are associated by individuals to destinations perceived to have those same dimensions (Martins & Garcia-Marques, 2025, submitted, see Empirical Chapter I).

Taken together, this research suggests that we organize information about a destination using a personality-based template. However, it remains unclear whether and how our minds effectively use destination personality as an encoding template. An open empirical question is whether this template functions similarly to the one we use when perceiving a person, which influences how information about that person (e.g., behaviors) is stored in memory (Hamilton et al., 1980b, 1980a). In other words, it is uncertain whether the personality-trait-based organization observed in encoding information about people also applies to tourism destinations—non-human entities that are nonetheless perceived to have personality.

Our goal is to test for evidence of whether a perceived non-person object's personality imposes non-random organization to received information, by developing a set of studies anchored in methodologies from person perception literature.

Overview of the experiments

The work described in this paper addresses evidence of mnesic structuring of received object-related information when forming impressions of non-person objects. We target evidence of known indicators of personality-based structure, when asking participants to form impressions of a tourism destination. Across two experiments, we draw from Hastie and Kumar's (1979) methods to identify evidence of mnesic structuring sustained by personality features.

In these studies, participants received information about a destination's features, previously evaluated as *very exciting* or *not at all exciting*, with the goal of either simple memorization or forming an impression. When forming an impression, participants were given expectations about the destination as being either a very exciting or non-exciting place. As such, features were correspondingly perceived as either congruent or incongruent with that trait-expectation. After receiving the information, participants were asked first to freely recall it, and then to evaluate.

If the personality of a tourism destination offers an encoding template for incoming information, we expect results to show higher levels of recall when forming an impression, and a qualification by provided expectations around items' level of congruency. To detect evidence of structure in memory, we test for an incongruence effect and use, as an index of memory organization, the index Adjusted Ratio of Clustering (ARC; Roenker et al., 1971) – a measure of how much participants cluster their recalls around perceived categories in the to-be-remembered material.

We run two different experiments to test this hypothesis; they differ in how favorable their experimental conditions are to the use of personality as a template. Experiment 1 uses a general "destination" as a target, a heterogeneous and complex object. Experiment 2 replaced the "destination" object for a simpler and more homogeneous destination target, a "neighborhood".

Experiment 1

Experiment 1 addresses evidence of structuring of object-related knowledge in memory when forming impressions of a destination, based on its dimensional features. Given that memory organization is highly dependent on elaborative processing (Srull, 1981), we added a manipulation of elaboration to the paradigm, promoting either high or low elaboration.

In this experiment, we contrast memory for a list of destination features under two processing goal conditions: memory, or impression formation. In the memory condition, participants are asked to simply memorize the list of features (which represent different poles of one personality dimension – *exciting*). In the impression formation conditions, participants are asked to form an impression of the city described by the same list of features. In both cases, the list always begins and ends with a neutral item; between these, the exciting and unexciting items are shown in random order. For the impression formation condition, we also manipulate trait-expectations to be either *very exciting*, *unexciting*, or having no expectation (baseline). Dependent measures rely on participants' recall of information provided and attitudes towards the tourist destination.

Method

Participants and design. A total of 237 undergraduate students (78.9% female, 1,2% non-binary; M_{age} = 23.20, *SD* = 8.30) took part in the experiment in exchange for course credit. The study employed a 2 (elaboration: high vs. low) x 2 (processing goal: memory vs. impression formation), with three nested conditions within the impression formation instructions: no expectation vs. *exciting* expectation vs. *unexciting* expectation. A sample size of 128 participants was determined to be adequate for our different set of analyses (main effects and interaction of the 2 x 2 design and the analysis of the three 3 expectation conditions), using G*Power (Faul et al., 2007), to achieve .80 power to detect a medium effect size with a level of confidence of 5%.

Materials. Destination features were drawn from those assessed in Martins and Garcia-Marques (2025, submitted, see Empirical Chapter I) – namely, the six features that best represent the *high*, and the six features that best represent the *low* levels of the *exciting* dimension (see Table 1). The destination shown to participants was named, randomly, with one of five fictional names – *Beiriz, Solime, Pendle, Sola,* or *Amane*. To set the *exciting* and *unexciting* expectations regarding these destinations, we used terms that described the *exciting* dimension as found by

Ekinci and Hosany (2006), “exciting, spirited, original”, and their opposite, “monotonous, uninteresting, boring”.

In the memory task, neutral features were used – specifically, those scoring closer to the scale’s midpoint in Martins and Garcia-Marques (2025, submitted, see Empirical Chapter I). Respectively, “There are specific shops for tourists”, and “It attracts an international community of surfers”.

Table 5
Selected features from the exciting dimension, representing both high and low ends.

High	Low
It has easy access to wonderful beaches.	There is a lot of garbage in natural spaces.
There are almost daily outdoor concerts.	The city center has a lot of car traffic.
Restaurants have authentic and typical regional menus.	Restaurants all close very early.
You hear all kinds of music in the streets.	Walking along the riverbanks is not allowed.
It's an exotic culture, totally different.	Tourists cannot rent boats.
There are always themed parties happening.	Locals are uncommunicative.

Procedure. The study was conducted in the university laboratory; data was collected using the Qualtrics (2005) survey platform. Participants were welcomed to the lab in groups of five to ten and instructed to sit in one of the individual booths along the corridor, with the door open. During the study, the experimenter waited in the corridor. After reading and agreeing to an informed consent form, participants read the instructions for the task provided on the computer screen.

Task instructions informed participants that they would be shown, one by one, excerpts of online comments about a touristic destination. In the impression-formation condition (IF), participants were told that their task was “to form an impression of this destination. You will afterwards be asked to provide your opinion on this destination, and how much you would like to visit it”. Conversely, in the memory condition, they were instead told that their task was to “memorize these comments as accurately as possible. You will afterwards be asked to recall them as best as you can”. For half the participants in both memory and IF, below these instructions, the following instruction was given to promote elaboration: “For this reason, we ask that you dedicate your maximum attention to each comment. The task has no time restraints – you can take as long as you deem necessary with each comment" – the high elaboration condition.

An added screen was shown to participants in the IF condition, to set expectations about the destination. Participants were informed that the comments were collected from tourism websites, anonymized, and translated to Portuguese. The destination was then described either as "exciting, spirited, original" (*exciting* condition) or "monotonous, uninteresting, boring" (*unexciting* condition), or was not described at all (no expectation condition).

The exposure stage of the main task followed, always beginning and ending with neutral features. In between, the *high* and *low* features were shown in randomized order, at a self-paced rhythm.

A subsequent filler task was used to distance the presentation of information and the recall measure. We asked participants to fill out a 6-item Need for Cognition Scale (Cacioppo & Petty, 1982)[4]. This was followed by the recall task, in which participants were asked to try and "recall as many of the comments you have read as possible". They were shown ten text entry fields and were asked to be "as precise as possible". They then moved on to the thought-listing task, where we informed them that of our interest in their reactions to the features they had read, and asked that they "write, in the boxes below, the thoughts you had while reading the comments". Ten text-entry fields were shown below. Thoughts entered on this screen were shown to the participants in the next, asking them to "indicate, for each thought, whether it is positive or negative in regard to the destination you have read about". Each previously entered thought was shown in a rating matrix alongside the "Negative" and "Positive" options.

The next stage measured attitudes using seven-point rating scales (see below). The first screen assessed participants' attitudes; the second screen assessed their behavior intentions. A final screen asked them to rate how exciting they thought the destination was, on a rating scale anchored on "1 – Not at all exciting" and "7 – Very exciting".

[4] This measure was used as a filler task, and its results are not reported in this paper. However, for the sake of transparency, we note that an analysis of its potential moderating role yielded null results.

Finally, participants filled out demographic information (age and gender), were thanked for their participation and left the laboratory.

Dependent measures

Attitudes. Attitudes on the destination were measured using semantic differentials (Osgood et al., 1957) with a seven-point scale: Very negative - Very positive; Very unpleasant - Very pleasant; Very bad - Very good.

Behavioral intention[5]. Participants were asked to indicated how much they would like to visit this destination ("1 – I would not like at all" to "7 – I would like very much"), if they would recommend it to a friend ("1 – Would not recommend at all" to "7 – Would definitely recommend"), and their interest in receiving more information about it ("1 – I would not like to at all" to "7 – I would like to very much").

Elaboration. Several measures provided insight into participants' level of elaboration. The *number of thoughts* was assessed based on how many of the available text fields each participant used (as those who elaborate more tend to list a greater number of thoughts in a thought-listing task). The *average word count* of these thoughts was also examined, given that participants sometimes provide single-word responses (e.g., "nice"). *Engagement in thinking* during the task was indexed by the relationship between attitudes and thought favorability – this association emerges only when elaboration occurs (Petty & Cacioppo, 1986). A *thought favorability index* was computed by subtracting the number of unfavorable thoughts from the number of favorable ones.

Levels of recall. The quantity of recalled items was analyzed as an indicator of memory organization. The total number of recalled items was determined by counting the number of text fields participants used in the free-recall task. Recalls were categorized based on whether they referenced exciting or unexciting features, and the totals for each were calculated. These measures were used to test for the incongruence effect as a marker of memory organization.

[5] This measure correlated highly with measures of attitudes ($r = .75$, $p < .001$), which were used in the analysis instead.

Adjusted Ratio of Clustering. In line with Hamilton and colleagues (1980b, 1980a), we used the Adjusted Ratio of Clustering (ARC, Roenker et al., 1971) as an index of memory organization. This measure assesses the extent to which participants cluster their recalls around perceived semantic categories (i.e., grouping conceptually similar or meaningfully related items) beyond what would be expected by chance.

Conditional probabilities. To examine recall patterns, we calculated the frequency of each possible recall pair in participants' outputs and computed the probability of recalling each of the four possible combinations (exciting-unexciting, exciting-exciting, unexciting-unexciting, and unexciting-exciting). The processing mechanism underlying the incongruence effect predicts that recall probabilities for congruent and incongruent items will differ depending on whether the previously recalled item was congruent or incongruent. Specifically, after recalling a congruent item, the likelihood of recalling an incongruent item should be higher than that of recalling another congruent one (Srull, 1981).

Recall favorability. This index was calculated by subtracting the number of *unexciting* recalls from the number of *exciting* recalls, and used to ascertain whether attitudes would correlate, and be anchored in, the quality of recalls.

Results

The data analysis is structured into key steps: 1) verifying our experimental manipulations of elaboration, processing goal, and expectations; 2) testing the effect of these manipulations on attitudes, and, finally, 3) evaluating the evidence of memory organization. For these, we relied on empirical arguments predicated upon estimates of correlation indexes, *t*-tests, and ANOVAs.

Levels of elaboration

Our initial analysis investigated the effect of our elaboration instructions across different indexes of elaboration (for the full analysis, see Appendix B, section 1).

Table 6.

Indexes of participant elaboration

Measure	Elaboration condition	No elaboration	Test
Number of thoughts	M = 2.55, SD = 1.45	M = 3.05, SD = 1.74	t(212) = 2.31, p = .022, d = 0.31
Average of words per thought	M = 20.58, SD = 14.81	M = 16.29, SD = 14.40	t(212) = -2.13, p = .034, d = 0.29
Attitudes vs. thought favorability (correlation)	r = .45, p < .001	r = .41, p < .001	F(1, 210) = 2.60, p = .108, η^2_p = .010[6]

Only the average number of words per thought corroborates that participants were elaborating more when instructed to do so. The ANCOVA shows thought favorability as a clear predictor of attitudes, $F(1, 210) = 48.76$, $p < .001$, $\eta^2_p = .190$ (with a correlation across the entire sample, $r = .42$, $p < .001$). However, this relationship was not moderated by the experimental elaboration conditions, indicating that participants in both conditions were engaging in elaboration.

In sum, contrary to our expectations, data suggests that participants in both elaborative conditions were elaborating on the information they were receiving, as evidenced by the relationship between their attitudes and the favorability of generated thoughts (Petty & Cacioppo, 1986). To ensure that our elaboration manipulation had no unexpected effects, it will be included in the following analysis. Nevertheless, we do not expect a significant role for our manipulation of elaboration, given the lack of evidence supporting its effectiveness.

Processing goal manipulation

The effectiveness of a processing goal manipulation (memory vs. IF) would result in differences in the level of recall, with higher recalls for the IF than for the memory condition (Hamilton et al., 1980b). To analyze the impact of processing goal in number of recalls, we conducted a two-way ANOVA in which both elaboration and processing goal (memory vs. no-expectation IF condition) were entered as between-subjects factors (full analysis in Appendix B,

[6] To be able to convey effect sizes of very small magnitude, these are reported to three decimal cases.

section 2). This analysis revealed a main effect of processing goal, in which those in the IF condition recall more items (M = 5.91, SD = 2.50) than those in the memory condition (M = 4.71, SD = 2.65; $F(1, 100) = 4.67$, $p = .033$, $\eta^2_p = .045$). Elaboration had no detectable main effect, $F(1, 100) = 2.52$, $p = .116$, $\eta^2_p = .055$, or interaction with processing goal, $F(1, 100) = 2.63$, $p = .107$, $\eta^2_p = .026$.

Expectations

Participants' ratings of how exciting the destination is are useful in determining the extent to which our manipulation of expectation towards the destination was effective – as all participants read the same information about the destination, differences in how exciting it was perceived to be are likely due to our manipulation. These ratings were analyzed in a two-way ANOVA having as factors elaboration (high vs. low) and expectation – the groups of participants that received the *exciting* versus *unexciting* expectations (full analysis in Appendix B, section 3). A single main effect was detected for expectation, $F(1, 106) = 8.90$, $p = .004$, $\eta^2_p = .077$, with those in the *exciting* condition reporting higher scores (M = 4.31, SD = 1.44) than those in the *unexciting* condition (M = 3.50, SD = 1.43). No main effect of elaboration was detected, $F(1, 106) = 0.18$, $p = .674$, $\eta^2_p = .002$, neither was there a significant interaction of the two factors, $F(1, 106) = 0.18$, $p = .674$, $\eta^2_p = .002$.

Impact on attitudes

Changes to attitudes between processing goals, expectations, or elaboration conditions can be informative as to whether organization is involved in how forming attitudes of our target. To test for the effects of these manipulations, we first performed a two-way ANOVA with a 2 (processing goal: memory vs. no-expectation IF condition) x2 (elaboration: high vs. low) as factors, followed by an ANOVA with expectations (*exciting* vs. *unexciting*) and elaboration (low vs. high) as factors. Results show only null effects (full analysis in Appendix B, section 4).

The first analysis shows that the processing goal manipulation had no effect on attitudes, $F(1, 100) = 1.34$, $p = .249$, $\eta^2_p = .013$; both conditions reported attitudes just slightly above the rating scale's neutral point (IF: M = 4.38, SD = 0.90; memory: M = 4.56, SD = 0.89); that elaboration exerts no main effect, $F(1, 100) = 0.24$, $p = .626$, $\eta^2_p = .002$, and that there was no interaction between the two factors , $F(1, 100) = 1.12$, $p = .292$, $\eta^2_p = .011$.

The second analysis shows no main effect of expectations: *exciting* (M = 4.46, SD = 0.99) and *unexciting* (M = 4.21, SD = 0.80) conditions did not differ significantly, $F(1, 106) = 2.06$, $p = .155$, $\eta^2_p = .019$; no main effect of elaboration was observed, $F(1, 106) = 0.00$, $p = .999$, $\eta^2_p = .019$, and no interaction, $F(1, 106) = 0.01$, $p = .917$, $\eta^2_p = .000$.

Given the nature of the task, we checked for an additional difference in attitudes between the two processing goal conditions – memory and no-expectation impression formation. Participants in the memory condition, unaware that they would have to report attitudes and form impressions, are less likely than those in the IF condition to activate any impression-formation processes. For those in the memory condition, then, it is plausible that their attitudes are reliant on what they can recall, and therefore correlated with its valence; conversely, those in the IF condition form attitudes either at the expectation manipulation step, or during exposure to the material, with no need to generate their evaluation based on recalled material (Hastie & Park, 1986). However, results of a general linear model, with processing goal as a between-subjects factor and recall favorability as a continuous predictor, show no impact of recall favorability on attitudes, $F(1, 100) = 2.20$, $p = .141$, $\eta^2_p = .022$, and no interaction between the two factors, $F(1, 100) = 1.10$, $p = .296$, $\eta^2_p = .011$. Similarly, no correlation is detected between attitudes and recall favorability, $r = .13$, $p = .175$.

ARC scores: evidence of memory organization

Clustered recalls (i.e., items that share a perceived category tendentially recalled together) are a sign of mnesic organization. This is typically observed when forming impressions, when traits are used as categories under which we encode the behaviors that evoke them. On the other hand, when forming single-trait impressions (such as in Hastie & Kumar, 1979), clustering is typically not observed.

To determine whether the impression formation processing goal is promoting any clustering-based organization, we first compare ARC scores between the memory and IF no-expectation conditions under both elaborative manipulation conditions. A main effect of processing goal, $F(1, 79) = 6.33$, $p = .014$, $\eta^2_p = .074$, shows that, surprisingly, the memory condition ($M = .41$, $SD = .65$) scored higher than the no-expectation IF condition ($M = .09$, $SD = .54$), the latter scoring near zero, which indicates random recall. As expected, elaboration exerts no main effect, $F(1, 79) = 2.48$, $p = .119$, $\eta^2_p = .031$, neither an interaction, $F(1, 79) = 0.002$, $p = .965$, $\eta^2_p = .000$

We subsequently contrasted expectations given that clustering can occur around traits. However, the two-way ANOVA comparing ARC scores between the *exciting*, *unexciting*, and no-expectation in low and high elaboration conditions show no significant effect. There was no main effect of expectation, $F(1, 136) = 0.79$, $p = .455$, $\eta^2_p = .012$ (*exciting*: $M = .24$, $SD = .60$; *unexciting*: $M = .12$, $SD = .49$; no-expectation: $M = .09$, $SD = .54$), nor for elaboration, $F(1, 136) = 1.32$ $p = .250$, $\eta^2_p = .010$, nor a significant interaction, $F(2, 136) = 0.50$, $p = .606$, $\eta^2_p = .007$.

The full analysis described above can be found in Appendix B, Section 5.

Levels of recall: the incongruence effect as evidence of memory organization

We address evidence of memory structuring by testing for the incongruence effect (full analysis in Appendix B, section 6). A mixed ANOVA was conducted with the number of exciting and unexciting features recalled ("features") as the within-participants factor, and both the levels of manipulated elaboration and expectation – namely, *exciting* and *unexciting* – as the between-participants factors ("expectation"). Results show the two main effects of feature, $F(1, 106) = 14.53$, $p < .001$, $\eta^2_p = .134$, and expectation, $F(1, 106) = 4.09$, $p = .046$, $\eta^2_p = .037$, to be significant. Unexciting features ($M = 2.85$, $SD = 1.27$) of a destination were recalled at higher rates than exciting ones ($M = 2.33$, $SD = 1.19$); those in the *unexciting* condition ($M = 6.59$, $SD = 2.57$) generally recall more features than those in the *exciting* condition ($M = 5.63$, $SD = 1.73$). As before, elaboration registered no significant impact as either a main effect, $F(1, 106) = 0.39$, $p = .536$, $\eta^2_p = .004$, or in interaction with features, $F(1, 106) = 0.16$, $p = .688$, $\eta^2_p = .002$.

Contrary to what would be expected if the incongruence effect emerged, the interaction between features and expectation was not detected, $F(1, 106) = 0.56$, $p = .457$, $\eta^2_p = .005$. Nevertheless, to provide a clearer picture of the main effect of features, planned comparisons were performed. This analysis shows a relevant significant difference, $t(106) = -3.36$, $p = .006$, $d = -0.61$, within the *exciting* condition, between the recalls of exciting ($M = 2.07$, $SD = 1.06$) and unexciting ($M = 2.69$, $SD = 0.98$) features.

Conditional probabilities as evidence of memory organization

Personality-based mnesic organization is evidenced by differing probabilities of recalling any of the four paired combinations of expectation-congruent and incongruent items (as described in Srull, 1981; Srull & Wyer, 1989). In our case, an exciting feature after an unexciting one, exciting feature after an exciting feature, etc. To ascertain whether this indicator of organization was present, these conditional probabilities were computed and first included in a mixed ANOVA as a within-subjects factor ("pairs") with processing goal (memory vs. IF no-expectation) and elaboration as between-subject factors, and subsequently included in a mixed ANOVA with expectation (exciting vs unexciting) as the between-subjects factor (full analysis in Appendix B, section 7).

Results of the first analysis show a main effect of pairs, $F(3, 216) = 7.35$, $p < .001$, $\eta^2_p = .093$, with cross-type pairs (exciting-unexciting, EU; unexciting-exciting, UE) registering higher conditional probabilities when compared to same-type pairs (exciting-exciting, EE; unexciting-unexciting, UU); as ascertained planned comparisons (allowing us to verify the predictions of person perception literature, e.g., Srull, 1981; Srull et al., 1985), these differences were significant: EE ($M = .17$, $SD = .25$) vs. EU ($M = .36$, $SD = .36$), $t(72) = -3.49$, $p = .005$, $d = -0.61$; EE vs. UE ($M = .35$, $SD = .34$), $t(72) = -4.36$, $p < .001$, $d = -0.60$; EU vs. UU ($M = .26$, $SD = .26$), $t(72) = 2.65$, $p = .048$, $d = 0.32$, and UU vs. UE, $t(72) = -2.66$, $p = .047$, $d = -0.30$.

Indicative of the overall better recall in the IF condition than the memory condition, the main effect of processing goal, $F(1, 72) = 5.75$, $p = .019$, $\eta^2_p = .074$, emerged with the impression formation condition (no-expectation), registering higher values than the memory condition (respectively, M = .34, SD = .30 vs. M = .24, SD = .30). More informative is the pairs vs. processing goal interaction , $F(3, 216) = 2.86$, $p = .038$, $\eta^2_p = .038$: in planned comparisons, we observe the difference between pairs to only occur in the impression formation condition – specifically, between the EE and EU pairs, $t(72) = -4.85$, $p < .001$, $d = -0.61$, and the EE and UE pairs, $t(72) = -3.43$, $p = .002$, $d = -0.60$.

As expected, elaboration did not reach significance as a main effect, $F(1, 72) = 0.92$, $p = .341$, $\eta^2_p = .013$, or in interaction with either pairs, $F(1, 216) = 0.66$, $p = .580$, $\eta^2_p = .009$, or processing goal, $F(1, 72) = 0.25$, $p = .616$, $\eta^2_p = .004$.

The second analysis, comparing *exciting* and *unexciting* conditions' conditional probabilities of different pairs, detected the previously seen effect of pairs, $F(3, 294) = 13.30$, $p < .001$, $\eta^2_p = .120$, and clarified that it was not qualified by either expectation, $F(3, 294) = 0.30$, $p = .829$, $\eta^2_p = .003$, or elaboration, $F(3, 294) = 0.25$, $p = .865$, $\eta^2_p = .002$. No other main effect is significant: expectation, $F(1, 98) = 0.77$, $p = .382$, $\eta^2_p = .008$, or elaboration, $F(1, 98) = 0.08$, $p = .773$, $\eta^2_p = .001$; no interaction between the latter, $F(1, 98) = 0.97$, $p = .326$, $\eta^2_p = .010$.

Conditional probability analysis controlling for recall favorability

We further explore whether the fact that cross-type pairs register higher conditional probabilities than same-type pairs is reflective of memory organization or simply a side effect of unexciting items being more frequently recalled. As such recall favorability (number of exciting minus number of unexciting recalls) was added as a covariate to the analysis[7] (Appendix B, section 7). The results of the ANCOVA with the four pair combinations as a within-subject measures, processing goal (memory vs. IF) as between-subject, and the recall favorability as covariate, were informative.

[7] For simplicity of data presentation, elaboration was removed as a factor, as it was shown to have no main effect or interaction with any other variable.

First, the pairs effect continues to be significant, $F(3, 219) = 11.28$, $p < .001$, $\eta^2_p = .134$[8], likewise interacting significantly recall favorability $F(3, 219) = 15.34$, $p < .001$, $\eta^2_p = .174$.

We also observed the main effect of processing goal, $F(1, 73) = 5.76$, $p = .019$, $\eta^2_p = .073$, with those in the IF condition registering overall higher conditional probabilities when compared to memory (respectively, M = .34, SD = .30 vs. M = .24, SD = .30).

No interaction between pairs and expectation was detected, $F(3, 219) = 1.89$, $p = .132$, $\eta^2_p = .025$. However, we are interested in understanding the underlying differences that led to the processing goal's main effect. Furthermore, there are specific comparisons of interest, such as that between EE and EU pairs, which reveal if after recalling an exciting item, an unexciting one is more likely to follow – a crucial indicator of organization in memory.

It is worth noting that only the IF condition has a similar pattern to the one observed in the exciting and unexciting expectations in the previous analysis (see Figure 5). Planned comparisons show that, for the IF condition, EE pairs ($M = .15$, $SD = .23$) are significantly different from EU ($M = .49$, $SD = .33$; $t(73) = -4.10$, $p < .001$, $d = -1.20$), and from UE ($M = .42$, $SD = .31$; $t(73) = -4.34$, $p = .001$, $d = -0.99$); the EU pair is also significantly different from the UU pair ($M = .30$, $SD = .25$; $t(73) = 3.22$, $p = .039$, $d = 0.65$). For the memory condition, however, no significant differences between pairs were detected.

[8] EE pairs ($M = .17$, $SD = .25$) differ significantly from the EU pairs ($M = .36$, $SD = .36$), $t(73) = -4.13$, $p < .001$, $d = -0.61$, the UU pairs ($M = .26$, $SD = .26$), $t(73) = -2.65$, $p = .047$, $d = -0.35$, and the UE pairs ($M = .35$, $SD = .34$), $t(73) = -4.89$, $p < .001$, $d = -0.60$

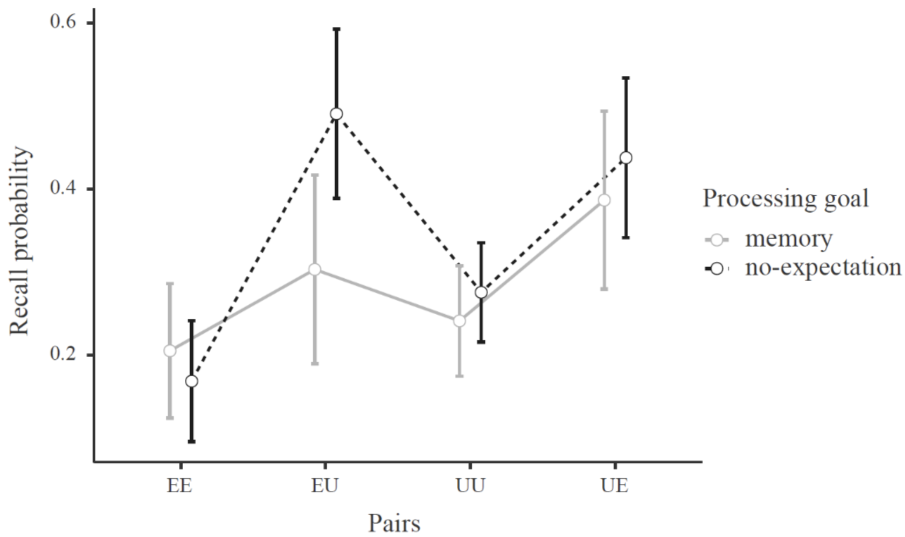

Figure 5. Probability of recalling different pairs. EE: two exciting features; EU: an exciting followed by an unexciting feature; UU: two unexciting features; UE: an unexciting feature followed by an exciting feature. Bars indicate 95% confidence intervals.

The analysis was repeated replacing the processing goal with the *exciting* and *unexciting* conditions to test the effect of expectations. We observed no main effect of recall favorability, $F(1, 99) = 2.30$, $p = .132$, $\eta^2_p = .023$, alongside a significant interaction with pairs, $F(3, 297) = 30.59$, $p < .001$, $\eta^2_p = .236$. As before, a main effect of pairs was detected, $F(3, 297) = 21.69$, $p < .001$, $\eta^2_p = .180$ and no main effect was observed for expectation, $F(1, 99) = 0.76$, $p = .386$, $\eta^2_p = .008$, or their interaction, $F(3, 297) = 0.31$, $p = .820$, $\eta^2_p = .005$ (see Figure 6).

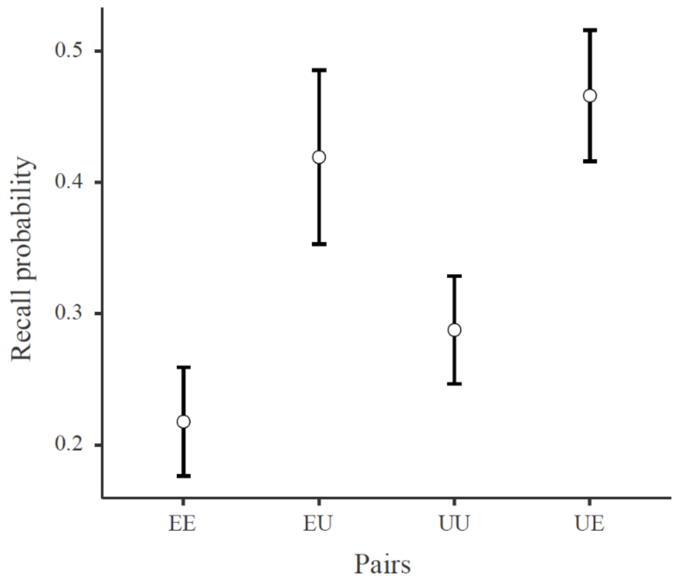

Figure 6. Probability of recalling different pairs, by processing goal. EE: a pair of two exciting features; EU: an exciting followed by an unexciting feature; UU: a pair of two unexciting features; UE: an unexciting feature followed by an exciting feature. Bars indicate 95% confidence intervals.

Absence of any organization in memory would be expressed in similar probabilities for all pairs in Figure 6; instead, we observe that recalling pairs that cross from exciting to unexciting (and vice-versa) is more likely than recalling pairs of features of the same type. Planned comparisons show that the EE pair (*M* = .22, *SD* = .24), which had the lowest probability of occurring, differs significantly from the other combinations: EU (*M* = .41, *SD* = .35), $t(99) = -4.59$, $p < .001$, $d = -0.63$; UU (*M* = .28, *SD* = .24), $t(99) = -3.18$, $p = .010$, $d = -0.25$; and UE (*M* = .44, *SD* = .32), $t(99) = -6.72$, $p < .001$, $d = -0.78$. Additionally, the UU pair differs significantly from both the UE pair, $t(99) = -4.74$, $p < .001$, $d = -0.57$, and the EU pair, $t(99) = 2.93$ $p = .022$, $d = 0.43$.

Discussion

This experiment tests whether personality is used as a template to encode information about a tourist destination, relying on a known person perception paradigm (Hastie & Kumar, 1979). It tests for evidence of organization of object-related knowledge in memory, using as indicators levels of recall, the incongruence effect, and analyses of conditional probabilities in recalls. Additionally, it tackles implications of differences in memory organization for attitudinal judgments.

Results show some evidence of memory organization occurring for impression formation (IF), given that this condition benefits from higher rates of recall than those observed for the memory condition (Hamilton et al., 1980b). Furthermore, the organization seemingly took the personality dimension into account: the analysis of conditional probabilities of recall shows that for IF conditions (and not memory conditions), cross-type links (between exciting-unexciting and unexciting-exciting items) were more frequent than same-type links (Srull, 1981).

However, results fail to offer evidence of one of the more relevant indicators of such organization: the incongruence effect. It is noteworthy that processing was sensitive to the nature of the presented features, as recall was better for the unexciting features of a destination than the exciting ones. If unexciting features are equated with negative or undesirable aspects of a tourist destination (see Table 1) our data may be documenting such negativity effect: the benefit for negatively valenced information in recall (Coovert & Reeder, 1990; Fiske, 1980; Skowronski & Carlston, 1989).

The lack of an effective manipulation of elaboration could be suggested as an explanation to why our data does not more clearly reflect memory organization as grounded on perceived personality as a template. However, although this manipulation had no significant effects, several processing indicators suggest that this was not due to a lack of elaboration. Participants appeared to engage with the content, generating thoughts about the information received and maintaining their attitudes in line with the favorability of those thoughts (Petty & Cacioppo, 1986).

Different factors can add difficulty to the detection of evidence of memory organization around a personality template. First, a “tourist destination” could be claimed to trigger a chronically accessible positive attitude leading all expectations to be positive (in which case, better recall of unexciting features would be evidence of an incongruent effect). However, we find no evidence of a general bias to evaluate a destination positively, given that attitudes towards the destination were just above neutral, regardless of condition.

Second, although evidence is clear in showing that individuals share a destination personality structure when asked to equate a city with a person (as requested by studies that uncovered the perceived personality of destinations, e.g., Ekinci & Hosany, 2006), there is no evidence guaranteeing that the template is spontaneously used for perceiving cities. However, although no direct experiment accessed the spontaneous inference process regarding destinations, there is evidence that these inferences occurred for this object. Data by Ekinci and Hosany (2006) and Martins and Garcia-Marques (2025, submitted, see Empirical Chapter I) suggests that people clearly infer the trait from the features provided to participants.

Third, cities are highly heterogenous aggregates of smaller units, such as neighborhoods. As such, they may be perceived as highly complex targets; the incongruence effect is known not to occur with such complex objects, as evidenced when the target is not a single person but a group (Srull, 1981) – an increase in complexity that may even favor a congruency effect (Stangor & McMillan, 1992).

Thus, Experiment 2 addresses the object complexity factor by replicating Experiment 1, while providing participants with a less complex object – a neighborhood, a unit of a city – to test whether personality, like with humans, is more accessible, and consequently more active, as an organizing principle.

Experiment 2

Given that the incongruence effect is sensitive to object complexity (e.g., occurring when forming impressions of individuals but not of non-meaningful groups, Srull, 1981), this experiment aims to trigger personality-based structuring processes by asking participants to form impressions of a less complex object than the one used in Experiment 1: a neighborhood, instead of a general destination. Given the previous study's results, we refrain from manipulating the degree of elaboration in this study.

Method

Participants and design. A total of 141 undergraduate students (90.1% female; M_{age} = 21.26, *SD* = 5.96) took part in the experiment in exchange for course credit. Participants were randomly distributed by four experimental processing goal/expectation conditions: memory, no expectation, *exciting* expectation, or *unexciting* expectation. A sample size of 128 participants was determined to be adequate, using G*Power (Faul et al., 2007), to achieve .08 power to detect with 5% of confidence a medium effect size associated with the main effects and the interactions with the within factors used across our statistical analysis.

Procedure and dependent measures. The same procedure and dependent measures from Experiment 1 are used, with the changes that elaboration was not manipulated and whenever a destination is mentioned in the instruction screens, it is mentioned as a “neighborhood”.

Results

We first verified general levels of elaboration of our participants, and the efficacy of our manipulations of processing goals and expectations. We further address the impact of the manipulation on attitudes followed by the study of evidence of organization on memory, based on the previously described computed memory organization indexes.

Levels of elaboration

To determine participant levels of elaboration, we make use of the number of thoughts provided and the relationship of their favorability with attitudes (full analysis in Appendix B, section 8). Participants provided an average of 4.66 thoughts (*SD* = 2.20) on the thought-listing task; attitudes are highly and significantly correlated with thought favorability, ($r = .46$, $p < .001$).

Processing goal manipulation

A successful manipulation of processing goals would be reflected in a higher number of recalled information by participants in the no-expectation impression formation condition, when compared to those in the memory condition (full analysis in Appendix B, section 9). As expected, there were differences in the number of recalls between the two processing goals, $t(102) = -2.27$, $p = .026$, $d = -0.51$, with the IF (no expectation) condition registering a higher number of recalls ($M = 7.35$, $SD = 2.24$) when compared to the memory condition ($M = 6.13$, $SD = 2.41$).

Expectations

Participants' excitement ratings help assess the effectiveness of our expectation manipulation, as all received the same information, making any differences in perception likely due to the manipulation (Appendix B, section 10). These ratings suggest that our manipulation of expectation towards the destination was effective, $t(56) = 3.27$, $p = .002$, $d = 0.86$ – those in the exciting condition ($M = 4.93$, $SD = 1.56$) rated the destination as more exciting than those in the unexciting condition ($M = 3.62$, $SD = 1.50$).

Impact on attitudes

Attitudinal differences between conditions, themselves differently likely to organize incoming information, can be informative regarding the link between attitudes and the structure of our representations of the target. As such, we separately test the effect of processing goals and expectation on attitudes (Appendix B, section 11) by, for each, comparing two relevant experimental conditions in *t*-tests: processing goal (memory vs. no-expectation), and expectation (*exciting* vs. *unexciting*). The effect of processing goal reached significance, $t(102) = 2.40$, $p = .018$, $d = 0.54$, with those in the memory conditions reporting more positive attitudes ($M = 4.61$, $SD = 0.86$) than those in the no-expectation IF condition ($M = 4.18$, $SD = 0.69$). However, there was no difference between the *exciting* ($M = 4.41$, $SD = 0.92$) and *unexciting* ($M = 4.22$, $SD = 0.78$) expectations conditions, $t(56) = 0.87$, $p = .389$, $d = 0.228$

Reliance on recall favorability between processing goals was also tested in a general linear model processing goal as a between-subjects factor and recall favorability as a continuous predictor. As before, this analysis shows no impact of recall favorability on attitudes, $F(1, 100) = 0.92$, $p = .340$, $\eta^2_p = .009$, and no interaction between recall favorability and processing goal, $F(1, 100) = 0.19$, $p = .665$, $\eta^2_p = .002$. Similarly, no correlation is detected between attitudes and recall favorability, $r = .13$, $p = .192$.

ARC scores: evidence of memory organization

This index registered exclusively null results regarding memory organization (full analyses available in Appendix B, section 12). We find no significant difference, $t(96) = 0.83$, $p = .407$, $d = 0.19$, on the ARC index between those in the memory ($M = .21$, $SD = 0.55$) and those in the no-expectation IF ($M = .11$, $SD = 0.46$) condition. The analysis comparing *exciting* and *unexciting* expectations also shows no significant difference, $t(54) = 1.20$, $p = .234$, $d = 0.32$, with both conditions scoring low (*exciting*: $M = .07$, $SD = 0.41$; *unexciting*: $M = .22$, $SD = 0.49$).

Levels of recall: the incongruence effect as evidence of memory organization

The totals for exciting and unexciting features recalled were entered as a within-participants factor (“features”); expectation (*exciting* and *unexciting*) entered as the between-participants factor (“expectation”) in a mixed ANOVA (Appendix B, section 13).

Results show no main effect of expectation, $F(1, 56) = 1.09$, $p = .300$, $\eta^2_p = .019$, and a significant main effect of features, $F(1, 56) = 13.26$, $p < .001$, $\eta^2_p = .191$ since unexciting features ($M = 3.40$, $SD = 1.24$) are more frequently recalled than exciting ones ($M = 2.69$, $SD = 1.17$). The interaction between these factors, representing the incongruency effect, did not reach standard levels of significance, $F(1, 56) = 3.50$, $p = .067$, $\eta^2_p = .058$.

Conditional probabilities as evidence of memory organization

Recall outputs were analyzed (all conditional probability analyses can be found in Appendix B, section 14) and the frequence of each of the four possible pairs (exciting-exciting, exciting-unexciting, etc.) was entered in a mixed ANOVA as a within-subject factor ("pairs"), with processing goal (memory vs. no-expectation IF) as a between-subject factor. Results reveal a significant main effect of pairs, $F(3, 279) = 5.68$, $p < .001$, $\eta^2_p = .058$ – specifically, planned comparisons show the EE pair ($M = 0.26$, $SD = 0.25$) to differ significantly from the UE ($M = 0.41$, $SD = 0.30$) pair, $t(93) = -4.14$ $p < .001$, $d = -0.54$, with no other significant differences between pairs. Processing goal registered neither a main effect, $F(1, 93) = 1.41$, $p = .238$, $\eta^2_p = .015$, nor an interaction with pairs, $F(3, 279) = 1.29$, $p = .277$, $\eta^2_p = .014$.

The analysis above was repeated, now with expectation as the between-subject factor. Similarly, we detect a main effect of pairs, $F(3, 168) = 5.05$, $p = .002$, $\eta^2_p = .083$; cross-type pairs are once again generally more recalled, although only one difference between is significant in planned comparisons – that between the UU ($M = 0.30$, $SD = 0.21$) and EU ($M = 0.44$, $SD = 0.24$) pairs, $t(56) = -2.63$ $p = .053$, $d = -0.61$. As before, expectation had no main effect, $F(1, 56) = 0.78$, $p = .381$, $\eta^2_p = .014$, neither interaction with pairs, $F(3, 168) = 0.463$, $p = .708$, $\eta^2_p = .008$.

Conditional probabilities analysis controlling for recall favorability

Like in the previous experiment, to determine whether recall favorability impacts the conditional probability of recalling the different pairs, we add this variable as a covariate to the analysis.

When comparing the two processing goals, we find a significant main effect of pairs, $F(3, 276) = 9.32$, $p < .001$, $\eta^2_p = .092$, this time observing additional significant differences between pairs. Namely, the UE ($M = .41$, $SD = 0.39$) pair registering significant differences, $t(92) = -4.12$, $p < .001$, $d = -0.46$, from the EE pair ($M = 0.26$, $SD = 0.25$) as well as with the UU pair ($M = .27$, $SD = 0.25$; $t(92) = -3.75$, $p = .002$, $d = -0.43$). There was no main effect of processing goal, $F(1, 92) = 2.01$, $p = .160$, $\eta^2_p = .018$, neither an interaction, $F(3, 276) = 0.42$, $p = .738$, $\eta^2_p = .005$.

Additionally, recall favorability registered no main effect, *F*(1, 92) = 1.68, *p* = .198, η^2_p= .018, but interacted significantly with pairs, *F*(3, 276) = 21.04, *p* < .001, η^2_p= .186.

This analysis was repeated to compare the expectation conditions – *exciting* vs. *unexciting* expectations. A main effect of pairs was observed, *F*(3, 165) = 5.17, *p* = .002, η^2_p = .086, with no significant main effect of expectation, *F*(1, 55) = 0.81, *p* = .371, η^2_p= .015, or interaction between the two factors, *F*(3, 165) = 0.13, *p* = .940, η^2_p= .002. The main effect of pairs was expressed similarly to the previous experiment (Figure 7), with cross-type pairs (exciting-unexciting; unexciting-exciting) registering higher probabilities of recall when compared to the same-type pairs (exciting-exciting; unexciting-unexciting). Controlling for recall favorability, however, rendered new results in our planned comparisons, now with a significant difference, *t*(55) = -2.79 *p* = .035, *d* = -0.60, between the EE (exciting-exciting; *M* = .28, *SD* = 0.26) pair and the UE (unexciting-exciting; *M* = .43, *SD* = 0.24) pair. Additionally, marginally significant interactions were detected between the EE and EU pair (exciting-unexciting: *M* = .43, *SD* = 0.31, *t*(55) = -2.63, *p* = .052, *d* = -0.52), and the former and UU pair (unexciting-unexciting: *M* = .30, *SD* = 0.24; *t*(55) = 2.51, *p* = .069, *d* = 0.08). As in the previous experiment, all significant differences, as well as those marginally significant, happen exclusively between cross-type and same-type pairs.

Finally, recall favorability registered no main effect, *F*(1, 55) = 0.45, *p* = .832, η^2_p= .001, but a significant interaction with pairs, *F*(3, 165) = 7.55, *p* < .001, η^2_p= .121.

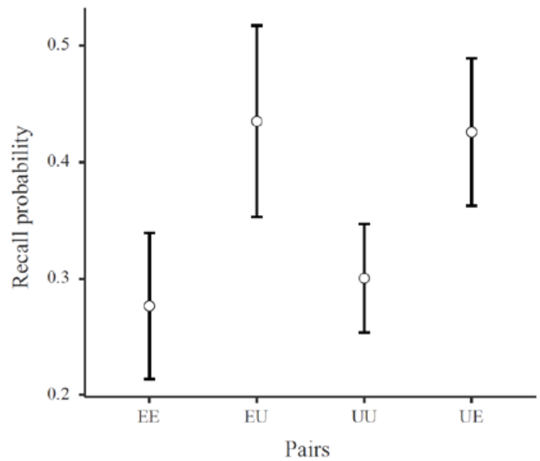

Figure 7. Probability of recalling different pairs. EE: a pair of two exciting features; EU: an exciting followed by an unexciting feature; UU: a pair of two unexciting features; UE: an unexciting feature followed by an exciting feature. Bars indicate 95% confidence intervals

Discussion

The goal of this experiment was to clarify whether there was evidence of mnesic organization around features representing personality in a more favorable context – one with a less complex target.

Results show some evidence of memory organization occurring predominantly for the no-expectation impression formation (IF) condition, given that this condition benefits from higher rates of recall relative to the memory condition. However, contrary to our expectation, even with an object of a lower level of complexity, there is no evidence of an incongruence effect between the two expectation conditions. Instead, and similarly to Experiment 1, a seemingly negativity effect is observed, as the preferential recall rests on the unexciting items, which are simultaneously negative valenced, thus, once more, highlighting the potential role of valence in mnesic organization.

Additional evidence of organization is seen in the higher recall probabilities of cross-type pairs (EU; UE) when compared to same-type pairs (EE; UU); this effect of pairs is congruent with the absence of high clustering in recall outputs – cross-type interitem links are established, promoting the association of a type when another is recalled, resulting in these alternating non-clustered recalls. We did not observe the effect of processing goal that was present in the previous experiment. This result is not unexpected: the two conditions compared in this test have no experimentally induced expectation (and have similar perceptions of how exciting the neighborhood is), which renders them unlikely to interpret features as either congruent or incongruent.

General Discussion

Across two experiments, we test for evidence that personality expectations offer a template with which to organize information at encoding – a role that previous research attributed to implicit knowledge of personality regarding person-related information in person perception contexts. If information about non-person objects is organized on a personality-based structure of knowledge, it should be detectable in circumstances where we can make use of this tried-and-true template: personality.

Across two experiments, we made use of methods from person perception and attempted to detect evidence of organization as manifested in indicators such as number of total recalls, extent of clustering in recall, incongruence effect, and conditional probabilities in recalls. In the first experiment, the non-person object was simply addressed as a "destination". In the second, to eliminate complexity of the target that is known to interfere with the incongruence effect, the object was a neighborhood.

The first main finding is that there is evidence that, when forming impressions, participants structure the presented information: in both experiments, instructing participants to form impressions (versus mere memorization) leads to a significantly higher number of recalled features. This is indicative of organization in the sense that memorized information, if organized according to some principle, allows for strategies that maximize the number of recalled items (Hamilton et al., 1980b, 1980a). The second general evidence is that participants were relying on the perception of a feature as exciting or unexciting when structuring information in their memory. In both experiments we find nonrandom conditional probabilities of recalling an exciting or non-exciting feature. Results show that it is more likely to recall cross-type pairs (EU; UE) than same-type pairs (EE; UU). This speaks of a specific type of associative network in which a feature, exciting or unexciting, is more likely to be linked to a feature dissimilar to itself than to one that is *also* exciting or unexciting. This pattern of interitem links is known to result from elaborative processing characteristic of an attempt to make sense of the information (Hastie & Kumar, 1979; Srull, 1981; Srull & Wyer, 1989). This is a defining feature of impression formation and, accordingly, is detected in our results primarily in the impression formation conditions.

However, and importantly, in both studies we did not find evidence of an incongruence effect. Expectations did not seem to lead the organization of information in memory; when it did, it seemed to favor congruent rather than incongruent items (as suggested by Experiment 2).

At this stage, the key question is: what principle guides and defines this organization? One possible answer lies in the tendency for *unexciting* features to be better recalled than *exciting* ones. Independent of expectations, there appears to be a general preference for remembering *unexciting* features, which are often negatively valenced—such as references to heavy traffic, polluted natural spaces, or various visitor restrictions.

This superior recall of *unexciting* features may contribute to a negativity effect, wherein negatively valenced information holds an advantage in memory (Coovert & Reeder, 1990; Fiske, 1980; Skowronski & Carlston, 1987, 1989). However, it remains unclear whether the observed organization of memory is driven by the unexciting-exciting trait dimension itself or by the underlying valence dimension. The limited evidence supporting the role of personality traits in memory organization may simply indicate that this organization is primarily based on valence.

Finally, with regards to attitudes, the first noticeable insight is that they seem to be independent of our experimental manipulation of expectations, resting in both experiments at a slightly positive, but near-neutral point. This is a somewhat unexpected result, particularly when considering that participants from the exciting condition rated the destination/neighborhood as more exciting than those in the unexciting condition – in short, while our manipulation generated differences in how exciting the destination/neighborhood is deemed to be, general attitudes remain unchanged.

One possible explanation, which requires further investigation, concerns the specific trait selected to shape expectations about the dimension. While our pre-tests indicate that this trait represents a relevant personality dimension of the tourist destination, it may not be considered in isolation as a key determinant of attitudes toward the destination. The expectations generated by our manipulation may not be strong enough to produce meaningful differences in overall attitudes between conditions.

This aligns with previous findings showing that, when forming evaluative impressions of others, certain traits are more influential in specific judgment dimensions and, consequently, carry greater weight in overall impressions (e.g., warmth and competence, Fiske et al., 2007; intellect and sociability, Rosenberg et al., 1968). Similarly, it is possible that the manipulated trait, despite being a genuine aspect of the destination's personality and accurately representing the dimension, does not significantly shape overall attitudes.

A second explanation is the mobilization of previous attitudes. This is, in fact, a staple in some representational attitude models. For example, Fazio's (1995, 2007; Fazio et al., 1982) two-node conceptualization of an attitude as an object-evaluation association states precisely that, upon encountering the attitudinal object, previous attitudes are retrieved. The stronger the object-evaluation association is, the more likely accessible this previous attitude will be, and more likely to be immediately retrieved. Additionally, frequently activating an attitude adds to its accessibility; since a tourist destination is a familiar object, we are likely to already have an attitude that we easily recruit, alongside an array of personal experiences that would be tendentially positive. Under conditions of high of elaboration (Petty & Cacioppo, 1986), thoughts are generated based on previous knowledge and experience and brought into working memory to take part in the forming of an attitude. Accordingly, our results show that attitudes correlate positively with thought favorability.

This retrieval of previous attitudes may also reflect the different sources from which attitudes can be formed. Zanna and Rempel (1988) propose that attitudes are shaped by cognitive, affective, and behavioral information—beliefs about an object, emotional responses to it, and past interactions with it, respectively. Given that tourist destinations are objects people are likely to have encountered in some capacity before, whether through direct experience, imagery, or cultural narratives, attitudes may already be rooted in broader, more stable affective or behavioral types of information. If this is the case, manipulating a single cognitive trait – how exciting a destination is perceived to be – may not be enough to shift general attitudes, as these may primarily draw from pre-existing emotional or experiential representations.

In conclusion, organization appears to occur when forming impressions or attitudes about non-person targets, with perceived differences in presented features supporting this process. However, this organization may be primarily driven by valence, which could play a major role. It remains unclear whether valence serves as the guiding principle or merely obscures an underlying effect of expectation incongruency, similar to what is observed in person perception. These questions remain open and require further empirical investigation.

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Empirical Chapter III

Mnesic structure of non-person object representations: The valence-personality interplay

Introduction

The way individuals perceive the world – including objects, events, and experiences – is directly shaped by the processes through which information about a given target is encoded and organized in memory. Identifying and categorizing a target object enables the structuring of received information in memory, allowing it to be perceived as a coherent whole (Barsalou, 1982, 1983, 1985; Wisniewski, 1995). Consequently, the meaning attributed to an object is grounded in the contents of that memory structure (Bar, 2004; Friedman, 1979; Teufel et al., 2018).

One dimension of the automatic categorization of objects is tied to their valence (Zajonc, 1980); Research suggests that objects are automatically perceived as either positive or negative and that valence plays a primary role in information encoding. This prioritization enables individuals to respond more quickly to objects when they are preceded by affectively congruent cues (e.g., affective priming, Fazio et al., 1986). The evaluation of an object is thus supported by this categorization process.

In this paper, we conceptualize tourist destinations as "perceived objects" and examine how information about their features is structured in memory and contributes to their evaluation. Specifically, we investigate the role of the memory template underlying the perceived personality of a non-person object, as well as the influence of the valence of specific features in this process.

Personality as a memory template

Previous literature tells us that implicit theories of personality function as organizational frameworks for memory during impression formation. These theories guide the encoding, structuring, and retrieval of information about individuals, shaping how impressions are formed (Bruner & Tagiuri, 1954; Schneider, 1973). Traits themselves are perceived as co-occurring, varying along dimensions (Rosenberg et al., 1968), which has given rise to dimensional personality models such as the Big-five (John et al., 1991) or the Big-two (Fiske et al., 2007).

Furthermore, research shows that trait-expectations are used as templates, or guiding principles, in how we organize information about others in memory in non-random ways. For example, when forming impressions of a person by reading descriptions of behaviors that instantiate different traits, individuals tend to group these behaviors in memory according to the trait they evoke; in subsequent recall tasks, same-trait behaviors are recalled together – a phenomenon named clustering in recall (Hamilton et al., 1980b, 1980a). Trait-based organization is also evidenced by the incongruence effect (Hastie & Kumar, 1979), in which information incongruent with a trait-expectation (e.g., an unkind behavior by someone we have an impression and expectation of kindness) is more frequently recalled – a consequence of our attempt to build a cohesive and structured impression, which requires resolving incongruency by comparing incongruent items to other items in the network. This added processing given to trait-incongruent items means they establish more connections in the associative network than their congruent counterparts – which, under no need to be "resolved", are linked only to other incongruent items. The consequent organization in memory is further demonstrated by higher likelihoods of recalling incongruent behaviors when the previously recalled item was congruent (the associative model of person perception, Srull, 1981, p. 81; Srull & Wyer, 1989).

But while personality can be perceived in other types of objects (e.g., brands, Aaker, 1997; or cars, Aggarwal & McGill, 2007) research has not yet clarified if personality also helps to structure the information received about these objects in ways similar to when we perceive other people. There are reasons to assume that this would be the case since personality traits can be understood as object features, and it has been shown that object features are structured in memory around the representation of the object, and consequently better recalled when presented within the same object (Walker & Cuthbert, 1998; Wilton, 1989), and tend to be recalled together (Ceraso et al., 1998). Conversely, other studies suggest that, at least in some cases, features may be held separately in memory (see Balaban et al., 2020 for a review). However, in this literature, the mnesic associative network nodes are the objects themselves; when personality templates are used, these nodes are traits. The open question is, then, whether perceived valence of information about a non-person object – information also associated with a trait from the object's perceived personality – has a role in how said information is structured in memory.

One non-person object that has perceived personality is the tourist destination; furthermore, this personality is perceived to be dimensional (Ekinci et al., 2007; Ekinci & Hosany, 2006), varying along the dimensions of *exciting*, *conviviality*, and *sincerity*, each with their associated features (Martins & Garcia-Marques, 2025, submitted, see Empirical Chapter I) akin to how behaviors are associated with personality traits in person perception. Thus, tourist destinations are a unique object that highlights the research question of whether a destination's features from a given dimension are non-randomly structured, in the likeness of what is observed when the target is a person.

Valence, and organization of personality-relevant information

Although stimuli valence is assessed quickly there is no direct evidence that valence dictates the structuring of information about object features in memory. For example, when forming impressions of a person, we do not structure information based on its valence; we find no evidence of clustering target-relevant information around valence in Hastie and Kumar (1979), Hastie (1980), or Srull (1981). Does it mean that valence has no impact whatsoever? Not necessarily: some research points to valence modulating memory for person features. On the one hand, Lingle and Ostrom (1979) detected a selective recall of primarily negative information with impacts on judgments. This apparent negativity bias was subsequently shown, however, by Lingle and collaborators (1983), to depend on a perception of incongruity, and to be driven by a mnesic search for information that contests the judgement. On the other hand, the role of valenced affect is also picked up on by Ikegami (1986, 1989) who notes that, for participants that establish a valenced, positive or negative, affect towards the target, subjectively congruent items benefit from better recall; and between these, it's positive affect that displays the advantage. The author notes that "information about a positive other are well organized in memory so that they are retrieved in a more effective way than those about a negative other" (Ikegami, 1989, p. 76) – in short, an organizational role particular to positive affect, which causes a more cohesive and structurally stronger representation. Note that, in this case, while the valence of the information itself is present, any benefit on recall is dependent on the valence of the evaluation of the target person; valence of the information may not impact structure directly, which also does not imply that information about the target is not establishing specific, valence-dependent links. In fact, representations of positive pieces of information seem to have a greater overlap when compared to negative information, which is more diverse and less alike (Unkelbach et al., 2020).

Although research is not clear about the specific role of valence in the organization and structure of object-related information in memory, we find other cues that valence of information plays a relevant role in this process. Besides empirical support for Bower's (1981) assumption that memory is structured by valence (e.g., Long et al., 2015; Matt et al., 1992), it is also known that when encountering an object with mixed characteristics (both good and bad), we may remember more negative information, and this seems to be related to a negativity biases (Baumeister et al., 2001; Rozin & Royzman, 2001).

We also find valence-related effects when perceiving other people – the *par excellence* object where personality takes a central role. This is observed, for example, in the added weight that negative information has on evaluations of another (Fiske, 1980; Klein, 1991) for individual and meaningful groups (Coovert & Reeder, 1990), and how it can be asymmetrical, depending on the specific dimension underlying the evaluation (Skowronski & Carlston, 1989), or on the informativeness of the information (Peeters & Czapinski, 1990).

On memory organization in tourist destinations

A recent effort to understand memory organization of object information, relied on tourist destination as target (Martins & Garcia-Marques, 2025, submitted). The authors applied person perception methods to this non-person object that is still perceived as having a dimensional personality. Based on the paradigm developed by Hastie and Kumar (1979), the authors use the *exciting* personality dimension (Ekinci & Hosany, 2006) to test the relevance of this dimension in memory organization. Participants were presented with descriptions of destination features that, as well as the experimentally set expectations, are either *exciting* or *unexciting.* The studies show two relevant findings. First, indicators of organization in the form of a superior recall performance when participants are instructed to form impressions versus mere memorization of the stimuli, as well as preferential recall of pairs of cross-type items (e.g., one *exciting* followed by an *unexciting* item, and vice-versa), suggesting that the elaborative and comparative encoding of counter-expectation information, typical of impression-driven organization, is occurring. Secondly, they report that the incongruence effect, a major indicator of trait-based organization in memory in person perception (Hastie & Kumar, 1979), was not detected. However, a negativity effect emerged consistently – superior recall for *unexciting* items which also describe negatively valenced features of a destination.

These results could support the idea that both knowledge about the destination's personality and feature valence are relevant to determine the organization of information in memory, contributing to its probabilities of recall. However, the lack of incongruence effect allows for an alternative hypothesis, in which only valence was responsible for the results that point to memory organization; the reported effect, assumed to be trait-related (i.e., better recall of unexciting features), can just as well be interpreted as valence-related (i.e., better recall for negatively valenced features), since the unexciting features invariably referred to negative aspects of a destination.

This interpretation is backed by literature outlining the circumstances in which valence may offer a stronger support, as an organizing principle that determines cognitive structure, than other dimensions of memory organization such perceived traits and personality. We can expect recall advantages for negative information, whether due to its informativeness (Peeters & Czapinski, 1990), dimension-related asymmetries (Skowronski & Carlston, 1989), or the innate power of negative information to grab attention (for a review, see Unkelbach et al., 2020). These nuances offer likable explanations for the negativity bias in recall reported in Empirical Chapter II.

In short, it is one possibility that valence is the most relevant organizing principle for non-person objects, and that what we described as the "perceived personality" of an object plays a non-relevant role in this mnesic organization. Additionally, that only in the absence of valence will perceived personality operate as an organizing principle. As such, in this paper, we aim to clarify the extent to which the principles of mnesic organization in person perception – guided by a personality memory template – apply to non-person objects, or whether valence instead emerges as a more relevant organizing principle in this context. Accordingly, in addition to examining the incongruence effect as evidence for the use of a personality template in memory, we also investigate the potential role of valence in shaping memory organization.

Overview of the studies

To clarify the role of perceived personality and perceived valence of destination features in their organization in memory, we need to guarantee that participants' expectations regarding personality are active when they receive the information about the target object. Using the experimental paradigm from Empirical Chapter II, two studies are developed in which we ask participants to read a list of features about a destination with one of two processing goals: simple memorization, or to form an impression of the destination. For the impression formation conditions, we experimentally manipulate their expectations regarding this object to be either an *exciting* destination, an *unexciting* destination, or, as a baseline, no expectation. It is by creating such expectation that we can expect evidence of memory organization mapped onto an incongruence effect, evidenced in recall measures. Our first experiment relies on a stronger method to impose and control prior expectations: asking participants to write down examples of what they expect to find in a city told to them to be either exciting or unexciting. We expect participants in each expectation condition to list features that match results obtained by Martins and Garcia-Marques (2025, submitted, see Empirical Chapter I). An effective setting of expectations is necessary in order to find evidence of memory organization that replicates results from Empirical Chapter II, and specifically the incongruence effect – evidence of the object's perceived personality being used as an organizing template.

Experiment 2 detaches personality from valence, ensuring that an emergent structure is not dependent upon the perceived valence of the features.

In both studies, differences between impression formation and memory conditions will index memory organization, and measures of clustering in recall are used as an index of structuring around either trait or valence. Participants' level of elaboration is measured, as indicated by the number of thoughts produced in a thought listing task, as well as the relationship between thought favorability and attitudes – the hallmark of elaboration (Petty & Cacioppo, 1986). Elaboration, which encompasses the generation of thoughts in which information is compared with the goal of abstracting an attitude, thus parallels the notion of elaborative encoding found in person perception literature (e.g., Srull et al., 1985; Srull & Wyer, 1989).

Additionally, measures of attitude are included. These are not only relevant as a manipulation check, but also potentially informative regarding any impact of mnesic organization on attitudes.

Experiment 1

Method

Participants and design. A total of 237 participants (78.9% female, 1,2% non-binary; M_{age} = 23.20, *SD* = 8.30) took part in the experiment online and were paid at a rate of 6 GBP/hour. A sample size of 128 participants was determined to be adequate for our analysis, using G*Power (Faul et al., 2007), to achieve .08 power to detect a medium effect size.

Materials. Destination features were drawn from those assessed in Martins and Garcia-Marques (2025, submitted, see Empirical Chapter I) - namely, the six features that best represent the *high*, and the six features that best represent the *low* levels of the *exciting* dimension (see Table 7).

Table 7.
Selected features from the exciting dimension, representing both high and low ends.

High	Low
It has easy access to wonderful beaches.	There is a lot of garbage in natural spaces.
There are almost daily outdoor concerts.	The city center has a lot of car traffic.
Restaurants have authentic and typical regional menus.	Restaurants all close very early.
You hear all kinds of music in the streets.	Walking along the riverbanks is not allowed.
It's an exotic culture, totally different.	Tourists cannot rent boats.
There are always themed parties happening.	Locals are uncommunicative.

Procedure. The experiment was conducted online; data was collected using the Qualtrics (2005) survey platform, recruiting participants using the Prolific platform (*Prolific*, 2014).

After accessing the study, reading and agreeing to an informed consent form, participants read the instructions for the task provided on the computer screen. Task instructions informed participants that they would be shown, one by one, excerpts of online comments about a touristic destination. In the impression-formation condition (IF), participants were told that their task was "to form an impression of this destination. You will afterwards be asked to provide your opinion on this destination, and how much you would like to visit it". Conversely, in the memory condition, they were instead told that their task was to "memorize these comments as accurately as possible. You will afterwards be asked to recall them as best as you can". Below these instructions, the following instruction was given to promote elaboration: "For this reason, we ask that you dedicate your maximum attention to each comment. The task has no time restraints – you can take as long as you deem necessary with each comment".

An added screen was shown to participants in the IF condition, to set expectations about the destination. The destination was named randomly, with one of five fictional names – *Beiriz, Solime, Pendle, Sola,* or *Amane*. Participants were informed that the comments were collected from tourism websites, anonymized, and translated to Portuguese. The destination was then described either as "exciting, spirited, original" (positive expectation condition; terms correspond to the facets of the *exciting* dimension as found by Ekinci & Hosany, 2006), "monotonous, uninteresting, boring" (negative expectation), or was not described at all (no expectation). For the exciting and unexciting expectations, a forced-expectation task was added: immediately below these instructions, participants were shown three text-entry boxes and asked to write down three things they expected to find in such a destination.

The exposure stage of the main task always began and ended with neutral comments (i.e., scoring closer to the scale's midpoint in Martins & Garcia-Marques, 2025, submitted, see Empirical Chapter I). Respectively, "There are specific shops for tourists", and "It attracts an international community of surfers".

A filler task was used to distance the presentation of information and the recall measure. We asked participants to fill out a 6-item Need for Cognition Scale (Cacioppo & Petty, 1982).

This was followed by the recall task, in which participants were asked to try and "recall as many of the comments you have read as possible". They were shown ten text entry fields and were asked to be "as precise as possible". They then moved on to the thought-listing task, where we informed them that we were interested in their reactions to the comments they had read, and asked that they "write, in the boxes below, the thoughts you had while reading the comments". Ten text-entry fields were shown below. Thoughts entered on this screen were shown to the participants in the next, asking them to "indicate, for each thought, whether it is positive or negative in regard to the destination you have read about". Each previously entered thought was shown in a rating matrix alongside the "Negative" and "Positive" options.

The next stage measured attitudes and behavioral intentions, using seven-point rating scales. The first screen asked for the participants' opinion on the destination ("1 – Very negative" to "7 – Very positive"), how they would describe it (two rating scales, anchored respectively on "1 – Very unpleasant" to "7 – Very pleasant", and "1 – Very bad" to "7 – Very good". The second screen asked participants how much they would like to visit this destination ("1 – I would not like at all" to "7 – I would like very much"), if they would recommend it to a friend ("1 – Would not recommend at all" to "7 – Would definitely recommend"), and how much they would like to receive more information about it ("1 – I would not like to at all" to "7 – I would like to very much"). A final screen asked them to rate how exciting they thought the destination was, on a rating scale anchored on "1 – Not at all exciting" and "7 – Very exciting".

Finally, participants filled out demographic information (age and gender) and were thanked for their participation.

Dependent measures

Attitudes. Attitudes towards the destination were assessed by semantic differentials (Osgood et al., 1957) anchored in seven-point scales: Very negative - Very positive; Very unpleasant - Very pleasant; Very bad - Very good.

Behavioral intention. Participants report how much they would like to visit this destination ("1 – I would not like at all" to "7 – I would like very much"), if they would recommend it to a friend ("1 – Would not recommend at all" to "7 – Would definitely recommend"), and how much they would like to receive more information about it ("1 – I would not like to at all" to "7 – I would like to very much").

Trait perception.

Elaboration. Different variables give us an insight into participants' degree of elaboration: number of thoughts were ascertained by how many of the provided text fields were used by each participant (elaborating participants are expected to list a higher number of thoughts in a thought-listing task); the average number of words used in those thoughts (as participants often enter single-word responses in a text field, e.g., "nice"); engagement in thinking during the task, indexed by the relationship between attitudes and thought favorability (this relationship only occurs when elaboration takes place; Petty & Cacioppo, 1986). A thought favorability index was calculated by subtracting the number of unfavorable from the number of favorable thoughts.

Levels of recall. The quantity of recalled items was used to detect organization in memory. The overall number of recalled items was ascertained by the total of text fields used by participants in the free-recall task. Recalls were coded according to whether they mentioned the exciting or unexciting features, and totals for each were calculated; these were used to test for the incongruence effect as an index of organization in memory.

Adjusted Ratio of Clustering. Following Hamilton and colleagues (1980b, 1980a), we used, as an index of memory organization, the Adjusted Ratio of Clustering (ARC, Roenker et al., 1971) – a measure of how much participants cluster their recalls around perceived a priori semantic categories (i.e., grouping items perceived to be conceptually similar or that share meaning) in the to-be-remembered material beyond what would be expected by chance.

Conditional probabilities. For this analysis, the frequency of each possible pair in participants' recall outputs was counted, and the probability of recalling any of the four combinations (exciting feature followed by an unexciting one, exciting-exciting, unexciting-unexciting, and unexciting-exciting) was computed. The processing that underlies the incongruence effect predicts different probabilities that incongruent or congruent items are recalled according to whether the previously recalled item was congruent or incongruent. Specifically, after a congruent item is recalled, the probability of recalling an incongruent item should be higher than that of recalling another congruent item (Srull, 1981).

Recall favorability. This index was calculated by subtracting the number of unexciting recalls from the number of exciting recalls, and used to ascertain whether attitudes would correlate, and be anchored in, the quality of recalls.

Results

The data analysis is structured into key steps: results from the forced-expectation task; verifying elaborative processing, our experimental manipulations of processing goal and expectations; the effect of these manipulations on attitudes; and, finally, evaluating the evidence of memory organization. For these, we relied on empirical arguments predicated upon estimates of correlation indexes, *t*-tests, and ANOVAs.

Forced-expectation task

We expect the results of this task to approximate the data obtained in Martins and Garcia-Marques (2025, submitted, see Empirical Chapter I) which support the materials used in this experiment. Looking at participants' responses to the forced-expectation task, we notice that the most used terms are different between the two expectations. Among those told that the destination was exciting, the most common terms are lively/vibrant (7 mentions), events/activities (5), exciting (4), cultural, (4) and parties (4). On the other hand, among those told that the destination was unexciting, we find they expect the destination to be peaceful (9 mentions), calm/tranquil (7), traditional (6), rural (4), and small (4).

Of note is the lack of equivalence between responses from participants in the *unexciting* expectation condition and the unexciting features presented during the experiment - both in terms of content and in terms of valence. The expected impact of this discrepancy is elaborated on in the discussion section.

Levels of elaboration

Our indicators of personality-based structure require participants to elaboratively encode information. This implies that participants elaborate – that they generate thoughts and compare information (full results found in Appendix C, section 1). The following analysis aims to assess it.

We first consider the number of reported thoughts. Participants listed, on average, 4.50 thoughts (SD = 1.89), with an average of 6.29 words per thought (SD = 4.49). This is comparable to what we report in Empirical Chapter II's high elaboration conditions.

Further confirmation of elaboration (Petty & Cacioppo, 1986) comes from the high and significant correlation between reported attitudes and favorability of listed thoughts ($r = .55$, $p < .001$), the latter calculated by subtracting the number of negatively valenced thoughts from the total of positively valenced thoughts. The relationship between attitudes and thought favorability was then analyzed to ensure that levels of elaboration were not impacted by our experimental conditions in impressions formation (none, positive, and negative expectations), and the memory condition. These four experimental groups were contrasted in the relationship between attitude and thought favorability in a general linear model where attitudes were entered as dependent variable and thought favorability as a continuous predictor. The positive relationship between attitude and thought favorability, $F(1, 98) = 32.83$, $p < .001$, $\eta^2_p = .251$, was not qualified by the experimental conditions, $F(3, 98) = 0.51$, $p = .679$, $\eta^2_p = .015$. Additionally, we find no impact of these conditions on attitudes when controlling for thought favorability, $F(3, 98) = 0.61$, $p = .613$, $\eta^2_p = .018$.

Overall, these results suggest that participants were elaborating on the information they were receiving.

Processing goal manipulation

Processing goal is known to impact the number of recalls, so that those with a simple memorization goal tend to recall less of the to-be-remembered material than those under an impression formation goal (Hamilton et al., 1980b). However, the *t*-test that compared the number of recalls between the memory (M = 6.26, SD = 2.74) and the no-expectation impression formation condition (M = 5.83, SD = 1.98) shows no significant difference, $t(55) = -0.68$, $p = .501$, $d = 0.18$ in the amount of recalled information between conditions (Appendix C, section 2).

Attitudes

Further *t*-tests were conducted to test the impact of our four experimental conditions on attitudes (Appendix C, section 3). No significant difference was observed: neither for processing goal, $t(55) = -0.65$, $p = .522$, $d = .018$ (memory: M = 4.40, SD = 1.07; IF: M = 4.23, SD = 0.82), nor for expectation, $t(63) = 0.46$, $p = .646$, $d = -0.12$ (unexciting: M = 4.05, SD = 0.98; exciting: M = 4.17, SD = 1.10).

Furthermore, we are interested in the process by which attitudes are formed – whether relying, thoughts, or recalls – and whether it is universal or varies dependent upon the expectations generated in the impression formation conditions and the memory processing goal condition. We have shown, in the previous section, that attitudes are universally (independent of the experimental conditions) anchored in thought favorability. In a general linear model, we now address the role of recall favorability (computed by subtracting the total of unexciting recalls from the total of exciting recalls); this variable was entered as a continuous predictor (Appendix B, section 3.3) of attitudes, while controlling for the four experimental conditions. Results show the expected dependence of attitude of recall favorability, $F(1, 114) = 10.52$, $p = .002$, $\eta^2_p = .084$, which was not moderated by the experimental conditions, $F(3, 114) = 0.29$, $p = .831$, $\eta^2_p = .008$. Also, no main effect over attitude was observed for condition, $F(3, 114) = 0.57$, $p = .637$, $\eta^2_p = .015$, when controlling this variable.

Overall, we find attitudes to vary according to the recalled information. Regardless of condition, attitudes are more positive when recalls are mostly *exciting* features. Our previous analysis of levels of elaboration has highlighted, however, that attitudes are also linked to the favorability of generated thoughts. To understand the relative impact of both recalls and generated thoughts on participant attitudes, both recall favorability and thought favorability were analyzed in a multiple linear regression. This resulted in a significant model, $F(2, 103) = 24.2$, $p < .001$, explaining 32% of the variance in attitudes ($R^2 = .32$), in which thought favorability was the most impacting predictor, $B = 0.20$, $SE = 0.03$, $t(103) = 6.18$, $p < .001$, and recall favorability not reaching standard levels of statistical significance, $B = 0.08$, $SE = 0.02$, $t(103) = 1.76$, $p = .083$.

Trait perception

Given that all participants, regardless of condition, read the same information about the destination, differences in how much they deemed the destination to be exciting can be interpreted as resultant from our experimental manipulation – particularly that of expectation. As such, to confirm the effectiveness of our expectation manipulation, we performed *t*-tests (Appendix C, section 3). to compare these ratings between the different processing goals as well as expectations. No significant difference was observed: neither between processing goals, $t(55) = -1.68$, $p = .099$, $d = 0.45$ (memory: $M = 4.33$, $SD = 1.24$; IF: $M = 3.73$, $SD = 1.44$), nor between expectations, $t(64) = 0.27$, $p = .792$, $d = -0.06$ (unexciting: $M = 4.22$, $SD = 1.68$; exciting: $M = 4.32$, $SD = 1.53$).

Recall and memory organization indexes

Our analysis (Appendix C, section 5) focuses initially on how much participants cluster their recalls; specifically, we calculated, for each participant, the Adjusted Ratio of Clustering (ARC, Roenker et al., 1971) – a measure of how much participants cluster their recalls around perceived a priori semantic categories in the to-be-remembered material beyond what would be expected by chance, and an index of organization in memory. Such clustering similar information together is a hallmark of impression formation (Hamilton et al., 1980b, 1980a); in our paradigm, features could be clustered together according to whether they represent the exciting or unexciting ends of the trait's continuum. We tested whether this was different between processing goals – memory and the no-expectation impression formation conditions. *t*-

test compared ARC scores between the memory and IF condition and showed, however, no significant difference, t(51) = -1.29, p = .203, d = 0.36 (memory: M = .32, SD = 0.53; IF: M = .12, SD = 0.58). As clustering can also be guided by traits, and trait-expectations, the same analysis was performed to compare the *exciting* and *unexciting* expectations. Similarly, no significant difference was observed, *t*(60) = 1.36, *p* = .178, *d* = 0.35 (*exciting*: *M* = .30, *SD* = 0.55; *unexciting*: *M* = .12, *SD* = 0.49).

Further evidence of organization in structure is evidenced by an incongruence effect, manifested as a recall advantage to expectation-incongruent information. To detect it, we performed a mixed ANOVA with the number of exciting and unexciting features recalled ("features") as the within-participants factor, and expectation (*exciting* and *unexciting*) as between-subjects factor. An effect of features was observed, *F*(1, 63) = 4.12, *p* = .047, η^2_p = .061. Unexciting features (*M* = 3.02, *SD* = 1.41) were recalled at higher rates than exciting features (*M* = 2.58, *SD* = 1.29). However, contrary to our expectations, there was no evidence of an interaction with expectation, *F*(1, 63) = 0.07, *p* = .796, η^2_p = .001. Thus, there is no evidence of an incongruent effect.

Our final approach to organization in memory rests on the analysis of conditional probabilities. The underlying aspect of organization in memory in person perception is a specific type of elaborative information processing, consisting in comparisons between congruent and incongruent items, so that a cohesive and meaningful impression of the object is formed. These comparisons establish interitem links that render the incongruent items more interconnected than their congruent counterpart, and consequently more likely to be recalled. Importantly, it establishes that cross-type pairs of recalls (i.e., congruent-incongruent, or incongruent-congruent) are more likely than same-type pairs. Thus, for example, after recalling a congruent item, an incongruent is more likely to be recalled next (Srull, 1981).

As such, for each participant, the number of occurrences for every pair in their free-recall outputs was counted, and the probability of each combination computed; namely, recalling two exciting items (EE), exciting followed by unexciting (EU), two unexciting items (UU), or unexciting followed by exciting (UE). These configured the within-subjects factor ("pairs") in a mixed ANOVA that had processing goal (memory vs. IF) as the between-subject factor, with recall favorability as a covariate (to control for the higher recalls for the unexciting features). We observe a main effect of pairs, *F*(3, 144) = 2.93, *p* = .036, η^2_p = .057, with cross-type pairs (EU: *M* = .52, *SD* = 0.67; UE: *M* = .50, *SD* = 0.62) registering higher conditional probabilities when compared to same-type pairs (EE: *M* = .29, *SD* = 0.44; UU: *M* = .38, *SD* = 0.52). No main effect was detected for recall favorability, *F*(1, 48) = 0.05, *p* < .825, η^2_p = .001, but a significant interaction with pairs emerged, *F*(3, 144) = 3.61, *p* = .015, η^2_p = .070. Similarly, processing goal registered no main effect, *F*(1, 48) = 0.04, *p* = .825, η^2_p = .001, but was found to be in a significant interaction with pairs, *F*(3,144) = 3.61, *p* = .015, η^2_p = .070 (Figure 8). Planned comparisons were conducted to explore this interaction. Between processing goals, probabilities differed for the UU pair, *t*(49) = -2.39, *p* = .021, *d* = -0.71 (memory: *M* = .20, *SD* = 0.31; IF: *M* = .55, *SD* = 0.63). Additionally, for the memory condition, the UU pair differed from the EU (*M* = .59, *SD* = 0.31; *t*(49) = 2.72, *p* = .009, *d* = -1.26).

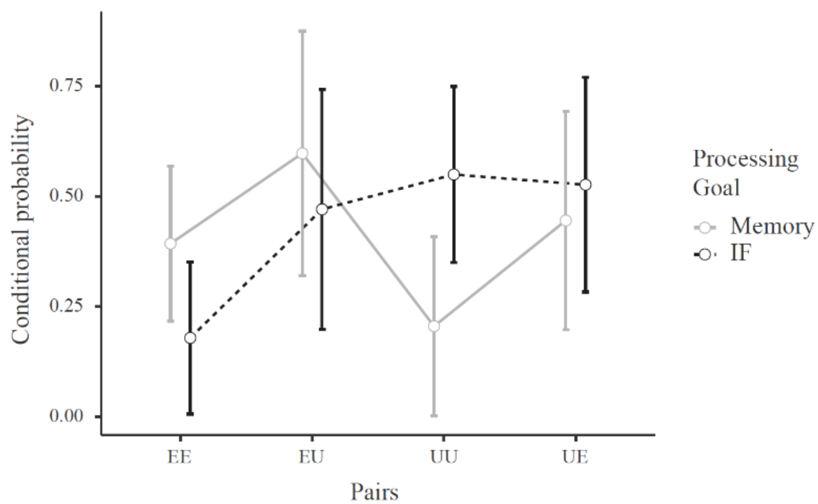

Figure 8. Conditional probability of all possible pairs of recalls for the two processing goals.

This analysis was repeated, replacing the processing goal with expectations – *exciting* and *unexciting*. However, no significant main effect emerged, either for pairs, *F*(3, 177) = 0.42, *p* = .737, η^2_p = .007, or expectation, *F*(1, 59) = 0.00, *p* = .956, η^2_p = .000, and no interaction between the two factors was observed, *F*(3, 177) = 0.65, *p* = .583, η^2_p = .011. Recalled favorability exhibited no main effect, $F(1, 59) = 2.03$, $p = .159$, $\eta^2_p = .033$, and was found to interact with pairs, $F(1, 177) = 9.79$, $p < .001$, $\eta^2_p = .142$.

Discussion

Our goal is to clarify the role of personality traits in the organization of information about a non-person object during impression formation in conditions that set clear trait expectations. We expected to replicate Empirical Chapter II and gain insight into why expectations did not promote the incongruent effect for the authors.

Experiment 1 only partially fulfils its goals. By experimentally setting trait-expectations regarding this object, tourism destinations, in a verifiable way (with a task in which participants report what they expect of a city just described to them as either exciting or unexciting) we have failed to secure conditions that clearly separate the two processing goals conditions. Memory and no-expectation impression formation conditions did not differ significantly on any of the indexes that would offer evidence of the expected superior mnesic organization when forming impressions. The hallmark of organization and the elaborative encoding that sustains memory structuring is that, when forming impressions, a congruent item is more likely to follow an incongruent item in recall than another congruent item. No such evidence was found. This bears further discussion.

In this experiment, both procedure and stimuli are directly replicating those used in Empirical Chapter II. Two things, however, differ: the presence of the forced-expectation task, and the fact that the experiment was conducted online. The forced-expectation task was exclusive to the expectation conditions, and absent from the conditions we used to compare processing goals. However, as mentioned, this is also where results differed, rendering any explanation based on the adding of this task unlikely. The second difference, however, proved a more likely explanation: for studies conducted online, there are expected differences in motivation, honesty, or accountability that can degrade online-sourced data (Uittenhove et al., 2023). For example, Finley and Penningroth (2015), using a memory task, report exclusion of participants for failing to follow task instruction exclusively in the online version of the task.

This converges with evidence showing that at least a third of online participants (depending on the chosen recruitment platform) fail to pass attention checks (Peer et al., 2022). While this cannot be ascertained as the definitive cause of our unexpected results, we believe it deserves discussion, nonetheless.

However, our results remain informative regarding the conditions promoted by our experimental manipulations. Results show that the reported expected features of an unexciting destination differ clearly from those reported for the exciting destination in terms of how the polar ends of the trait are represented (i.e., content-wise). One interesting aspect is that the features reported for the unexciting destination do not appear to be negatively valenced, suggesting orthogonality between the exciting trait and valence. Consequently, the reported expectations for an unexciting destination are not equivalent to the unexciting features presented to participants (from Martins & Garcia-Marques, 2025, submitted, see Empirical Chapter I), which are generally negatively valenced.

As such, since the unexciting features presented to participants do not match their trait-expectations (of either an exciting or an unexciting destination), we cannot expect an incongruence effect. In terms of trait, the presented unexciting features are neither congruent nor incongruent for any of the conditions; they may be, instead, perceived by participants as simply expectation-irrelevant.

It is important to note that, regarding valence, at least apparently, there is a mismatch in the *unexciting* condition. Participants in both experimentally induced expectations report expectations of seemingly positive features for an *unexciting* destination. The presented unexciting features, with their descriptions of negatively valenced features, are thus novel and unexpected to both conditions, likely to trigger a negativity effect (Unkelbach et al., 2020). This converges with our results: a significant recall advantage for the unexciting (i.e., negatively valenced) features, regardless of whether participants expected an exciting or unexciting destination. As in Empirical Chapter II, the results obtained here seem to be driven by valence.

However, the experiment and its data cannot provide a clear answer to the question of whether valence *can* take over the duties of organizing material in memory in the absence of a properly active trait-expectation, while not in its presence. A clearer picture would be achieved by using this paradigm in a situation from which valence was totally removed, and both exciting and unexciting items match participant expectations - as we have highlighted, this was not the case in this experiment. As such, new “positive unexciting” items were created based on participants responses to the expectation generation task. These were rated by a sample of participants in Experiment 2 as to how exciting they are perceived to be, their valence, and attitudes. These features were then used in Experiment 2b, replacing the unexciting items used so far.

Experiment 2

A new set of “positive unexciting” items (e.g., peaceful, calm, and tranquil activities) was generated based on participants' responses to the expectation generation task. Prior to the experiment, these items were pre-tested, with a separate sample rating them on perceived excitement, valence, and attitudes.

Additionally, in the rating task shown to participants, the set of positive exciting (“P-EX”) items were included, as well as the negatively-valenced unexciting (“N-UNEX”) items used ascertained in Martins and Garcia-Marques (2025, submitted, see Empirical Chapter I) and subsequently used in Empirical Chapter II.

Pre-test

Participants. A total of 30 undergraduate students (55.1% female, Mage = 30.23, SD = 1.51) took part in the experiment in the university laboratory in exchange for course credit. A sample size of 28 participants was determined to be adequate for our analysis, using G*Power (Faul et al., 2007), to achieve .08 power to detect a medium effect size.

Materials. The new set of materials, composed in alignment with participant responses in Experiment 1’s forced-expectation task, are shown in the table below:

Table 8
P-EX- set of features of a destination

Full of peaceful and serene landscapes.
Allows you to enjoy absolute silence.
Has cozy spots for long hours of reading.
Perfect nights for a deep sleep.
Offers a break from the hustle and bustle.
There are lakes and boats for fishing.
Many birds for birdwatching.
The sky is perfect for stargazing.
There are many spots to watch the sunset and sunrise.
An ideal destination for a picnic.
The auditorium hosts classical music concerts.
You can take a short painting course.

The remaining features were those used in Experiment 1.

Procedure. Participants were asked to evaluate the features, using rating scales, in different blocks, regarding how exciting they deemed it ("1 – Not at all exciting" to "7 – Very exciting"), how much they liked the features (i.e., attitudes; "1 – I don't like it at all" to "7 – I like it very much"), and whether they considered it a positive or a negative thing that a destination would have that features (i.e., valence; "1 – Definitely negative" to "7 – Definitely positive"). The valence block was always the last; the order of the remaining blocks (exciting, attitude) was counterbalanced.

Results

The analysis below aimed to determine whether the different sets of items show adequately different scores in the different tasks – in other words, in terms of trait (how exciting they were deemed to be), valence (whether they were seen as a positive or negative feature for a destination to have), and participant attitudes. A mixed model analysis was conducted with the ratings as dependent variable, task and set as within-subject factors, as well as participant and features as random factors.

Both task, $F(2, 2813) = 17.3$, $p < .001$, $\eta^2_p = .012$, and set, $F(2, 29) = 171$, $p < .001$, $\eta^2_p = .920$, registered a significant main effect, as well as their interaction, $F(4, 2813) = 33.6$, $p < .001$, $\eta^2_p = .044$. Random effect LRT tests also determined that both participant (variance = 0.1, ICC = 0.07, LRT = 114, $p < .001$) and feature (variance = 0.2, ICC = 0.11, LRT = 204, $p < .001$) contribute significantly to the model (all averages and standard deviations shown in Table 9 below).

Table 9
Means and standard deviations for each of the three sets in each of the three tasks

		Exciting	**Attitude**	**Valence**
N-UNEX	*M*	2.48	2.19	1.80
	SD	1.50	1.23	1.16
P-EX	*M*	5.88	5.60	6.21
	SD	1.27	1.39	1.19
P-UNEX	*M*	5.18	5.52	6.22
	SD	1.48	1.41	1.10

Overall, there is an evident difference between the N-UNEX set of items and the two remaining sets – as expected, these were considered less exciting, were deemed (as suspected in Empirical Chapter II) as negative features for a destination to have and registered correspondingly negative attitudes.

The match between the P-EX and P-UNEX sets was expected for attitudes and valence. On the other hand, exciting ratings for these two sets were expected to differ; comparison in a *t*-test showed them to differ significantly in the expected direction, with P-EX features ($M = 5.88$, $SD = 1.27$) deemed more exciting than P-UNEX features ($M = 5.18$, $SD = 1.48$), $t(26) = 3.53$, $p = .002$, $d = 0.29$.

Discussion

Our data shows that positive features, both exciting and unexciting, are rated as exciting, although differently so – the original exciting features score significantly higher in the exciting rating than the new positive and unexciting set. A more precise designation of these sets of items would be, instead of positive-exciting and positive-unexciting, to refer to them as a more and a less exciting set. For simplicity, we will refer to these sets, respectively, as E+ and E-.

More importantly, stimuli with more extreme scores (i.e., further away from the scale's midpoint) are known to be assessed by individuals as more informative and, consequently, induce selective attention to said stimuli and added weight in impression formation (Fiske, 1980). Additionally, this can be expected to also manifest in differences in recall: uninformative items, by scoring around the midpoint of a rating scale that represents a trait (e.g., from *very unexciting* to *very exciting*) are effectively neutral or irrelevant behaviors, known to be less recalled in person perception paradigms than even congruent items (Hastie & Kumar, 1979; Srull, 1981). The role of these EX- items as less relevant items should be taken into account.

The second experiment aims to clarify whether organization can be trait-based in the absence of a clear perceptive valence in the stimuli. To achieve this, the previous experiment's paradigm is used, using as stimuli a set of features that represent both ends of the differing levels of the trait (i.e., the E+ and E- sets of features of a destination) but are all perceived as positively valenced.

Method

Participants and design. A total of 155 undergraduate students (84.5% female, M_{age} = 21.25, *SD* = 5.84) took part in the experiment in the university laboratory in exchange for course credit. Participants were split into one of four conditions that defined processing goal/expectation: memory, no expectation, exciting expectation, or unexciting expectation. A sample size of 128 participants was determined to be adequate, using G*Power (Faul et al., 2007), to achieve .08 power to detect a medium effect size.

Materials. Features representing the high end of the exciting dimension (E+) were those already presented in Table 8. The E- features are drawn from those in Table 2, selected randomly.

Procedure and dependent measures. Dependent measures mirror those listed for Experiment 1. Likewise, the procedure followed that of the previous experiment, with three exceptions. First, we used the same expectation-setting procedure as in Empirical Chapter II; participants were told that the destination about which they would read was generally described as either exciting or unexciting. Second, the unexciting features were those presented in Table 2. Finally, the experiment was conducted in the university laboratory, where participants performed the experiment in groups of five to ten. They sat in individual booths along a corridor and kept the booth door open. Throughout the experiment, the experimenter waited in the corridor.

Results

As with the previous experiment, analysis proceeded in key steps: assessing elaborative processing, verifying experimental manipulation of both processing goals and expectations, their impact on attitudes, and memory organization by looking at the output of the recall task.

Levels of elaboration

Elaboration is crucial – without it, there is no comparison and inter-item linkage that sustains the organization of information in memory. As such, the analysis below assesses participants' level of elaboration (full results found in Appendix C, Experiment 2, section 1).

Participants provided, on average, 5.26 thoughts (*SD* = 2.45) and an average of 6.73 words per thought (*SD* = 4.04). Additionally, a high and significant correlation between attitudes and thought favorability suggests, as in the previous experiment, that participants were elaborating ($r = .45$, $p < .001$).

As in the previous experiment, the attitudes-thoughts link was analyzed in a general linear model to determine whether the previously reported correlations varied within our conditions. Attitudes were entered as dependent variable, with the four conditions as a between-subject factor, and thought favorability as a continuous predictor. Results mirror those of the previous experiment: a single main effect was detected of thought favorability, $F(1, 147) = 37.22$, $p < .001$, $\eta^2_p = .202$; no main effect of condition, $F(3, 147) = 1.55$, $p = .204$, $\eta^2_p = .031$, and no interaction between condition and thought favorability, $F(3, 147) = 0.07$, $p = .974$, $\eta^2_p = .002$.

Processing goal manipulation

An effective processing goal manipulation would lead to higher organization exhibited by the impression formation conditions. The total amount of recalled information is an indicator of such differences on organization and taken as evidence of a proper processing goal manipulation.

The number of recalled features differed significantly between the memory and the no-expectation IF condition, $t(82) = 2.65$, $p = .01$, $d = 0.58$, with the latter registering more recalled items (respectively, $M = 6.34$, $SD = 2.70$ vs. $M = 8.00$, $SD = 3.03$), confirming the efficacy of the processing goal manipulation (full analysis in Appendix C, section 2).

Attitudes

Our approach focuses on whether our manipulations of processing goal and expectation influenced participants' attitudes toward the destination, as well as the relationship between attitudes and recall favorability (full analysis in Appendix C, Experiment 2, section 3). As these conditions are expected to differ in the extent to which incoming information is cognitively organized, attitudinal differences may be informative regarding a link between attitudes and structure.

We performed *t*-tests to examine the effects of our manipulations of processing goal and expectation on attitudes. No significant effect emerged, neither for processing goal, $t(82) = -0.13$, $p = .900$, $d = -0.03$ (memory: $M = 6.05$, $SD = 1.03$; IF: $M = 6.02$, $SD = 0.98$), nor for expectation, $t(69) = 0.33$, $p = .744$, $d = 0.14$ (unexciting: $M = 5.84$, $SD = 0.91$; exciting: $M = 5.91$, $SD = 0.86$). We note that attitudes are overall positive towards the destination. Furthermore, attitudes do not correlate with the favorability of recalls ($r = .05$, $p = .532$).

As one of this paper's goals is to understand the possible link between structure and attitudes, the relationship between attitudes and recall favorability was subsequently tested using a general linear model, with recall favorability as a continuous predictor and all conditions as a between-subject factor. This revealed exclusively null results: no main effects, either for conditions, $F(3, 147) = 0.39$, $p = .841$, $\eta^2_p = .008$, or recall favorability, $F(1, 147) = 0.55$, $p = .459$, $\eta^2_p = .004$; likewise, no interactions between conditions and recalls, $F(3, 147) = 0.67$, $p = .574$, $\eta^2_p = .013$.

Regarding the comparison between memory and the no-expectation IF condition, no main effects were observed, either for processing goal, $F(1, 80) = 0.01$, $p = .915$, $\eta^2_p = .000$, or recall favorability, $F(1, 80) = 0.14$, $p = .705$, $\eta^2_p = .002$. Likewise, no significant interaction emerged, $F(1, 80) = 0.36$, $p = .551$, $\eta^2_p = .004$.

Attitudes, regardless of condition, seem to be indifferent to what is recalled, and impacted instead by the favorability of generated thoughts (as reported in our analysis of levels of elaboration).

Trait perception

The following *t*-tests compare how participants rated the destination in how exciting they perceived it to be, both between the two processing goals (memory vs. IF) and expectations (unexciting vs. exciting). Regarding processing goals, we observe no significant difference, $t(82) = 1.82$, $p = .072$, $d = 0.39$, with those in the memory condition ($M = 5.38$, $SD = 1.23$) finding the destination just as exciting as those in the IF condition ($M = 5.89$, $SD = 1.33$).

As for expectation, a significant difference emerged, *t*(69) = 1.99, *p* = .051, *d* = 2.90 ; those expecting the destination to be exciting rate it higher in this dimension (*M* = 5.62, *SD* = 1.52) than those expecting it to be unexciting (*M* = 4.92, *SD* = 1.44).

Recall and memory organization indexes

The following analysis focuses on the output of the recall task, from which we extract different indicators of organization (details of these analyses are found in Appendix C, Experiment 2, section 4)

As in the previous experiment, we focus firstly on the Adjusted Ratio of Clustering (ARC, Roenker et al., 1971), comparing across processing goals and across expectations in *t*-tests. As expected, no significant effect emerged, neither for processing goal, *t*(82) = -0.81, *p* = .419, *d* = 0.19 (memory: *M* = .54, *SD* = 0.50; IF: *M* = .46, *SD* = 0.35), nor for expectation, , *t*(69) = -0.30, *p* = .763, *d* = 0.06 (unexciting: *M* = 0.50, *SD* = .34; exciting: *M* = .48, *SD* = 0.30).

We look, then, to the incongruence effect. As in the previous experiment, we performed a mixed ANOVA with the number of exciting and unexciting features recalled (“features”) as the within-participants factor, and expectation (exciting and unexciting) as between-subjects factor. We once again found an effect of features, *F*(1, 69) = 27.37, *p* < .001, η^2_p = .284. We find that E+ features are recalled at higher rates (*M* = 3.94, *SD* = 0.21) than E- features (*M* = 2.70, *SD* = 0.19). No interaction emerged between features and expectations, *F*(1, 69) = 1.64, *p* = .205, η^2_p = .023.

This absence of an interaction raises the question of whether this recall benefit for E+ items is tied to impression formation; as such, we repeat the mixed ANOVA using processing goal as a between-subject factor comparing only memory and FI with no expectations. Main effects of features, *F*(1, 82) = 40.93, *p* < .001, η^2_p = .333, and processing goal, *F*(1, 82) = 16.4, *p* < .001, η^2_p = .167, are observed; this time, the interaction is also significant, *F*(1, 82) = 8.71, *p* = .004, η^2_p = .096. Planned comparisons show this interaction to be driven by the no-expectation condition, which registers significant differences between the E+ (*M* = 4.68, *SD* = 0.33) and the E- (*M* = 2.54, *SD* = 0.23) features, *t*(82) = 6.25, *p* < .001, *d* = 7.64 . For the memory condition, however, the difference between E+ (*M* = 2.77, *SD* = 0.29) and E- (*M* = 1.98, *SD* = 0.20) features did not reach significance, *t*(82) = 2.59, *p* = .053, *d* = 3.16.

We finally focus on conditional probabilities of recalling each of the possible pairs – E+E+, E+E-, E-E-, E-E+, the within-subject factor – first between processing goals, followed by the same mixed ANOVA with expectations as a between-subject factor. As before, recall favorability was added as covariate in this analysis. For processing goals, we detect an effect of pairs, *F*(3, 195) = 3.49, *p* = .017, η^2_p = .042, and processing goal, *F*(1, 65) = 8.72, *p* = .004, η^2_p = .118, with no interaction, *F*(3, 195) = 1.21, *p* = .307, η^2_p = .018 (Figure 9). Additionally, we detected a significant main effect of recall favorability, *F*(1, 65) = 8.28, *p* = .005, η^2_p = .113.

Despite the lack of an interaction between processing goal and pairs, we conducted planned comparisons between pairs of interest, so as to determine the extent to which these patterns match the predictions of person perception models (e.g., Srull, 1981; Srull et al., 1985). Significant differences were detected between the E+E+ (*M* = .38, *SD* = 0.25) and E-E- (*M* = .21, *SD* = 0.25) pairs, *t*(65) = 5.89, *p* < .001, *d* = 6.67, between the E+E- (*M* = .32, *SD* = 0.31) and E-E- pairs, *t*(65) = 2.97, *p* = .021, *d* = 5.33, and most evidently between the E-E- and E-E+ (*M* = .46, *SD* = 0.37) pairs, *t*(65) = -5.11, *p* < .001, *d* = -9.14.

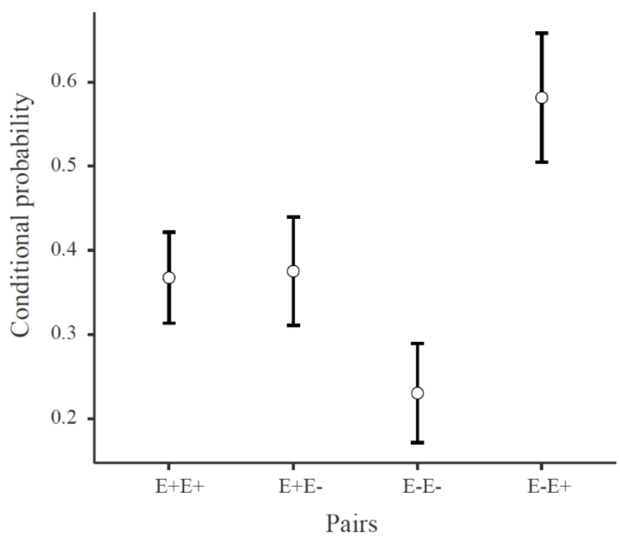

Figure 9. Conditional recall probability of all possible pairs for the memory and no-expectation conditions

The same scenario is observed for expectations (Figure 10): a significant effect of pairs, $F(3, 189) = 7.23$, $p < .001$, $\eta^2_p = .103$, expectations, $F(1, 63) = 4.06$, $p = .048$, $\eta^2_p = .060$, albeit no interactions between the two, $F(3, 189) = 1.19$, $p = .313$, $\eta^2_p = .019$. Recall favorability equally reaches standard levels of significance, $F(1, 63) = 4.61$, $p = .036$, $\eta^2_p = .068$.

As with the processing goal analysis, planned comparisons were conducted. As before, we observe significant differences between the E+E+ ($M = .38$, $SD = 0.23$) and E-E- ($M = .27$, $SD = 0.24$) pairs, $t(63) = 3.51$, $p = .004$, $d = 4.67$, between the E+E- ($M = .36$, $SD = 0.27$) and E-E- pairs, $t(63) = 3.33$, $p = .008$, $d = 5.00$, E+E- and E-E+ ($M = .57$, $SD = 0.32$) pairs, $t(63) = -3.87$, $p = .001$, $d = -5.71$, and between the E-E- and E-E+ pairs. $t(63) = -5.90$, $p < .001$, $d = -10.00$.

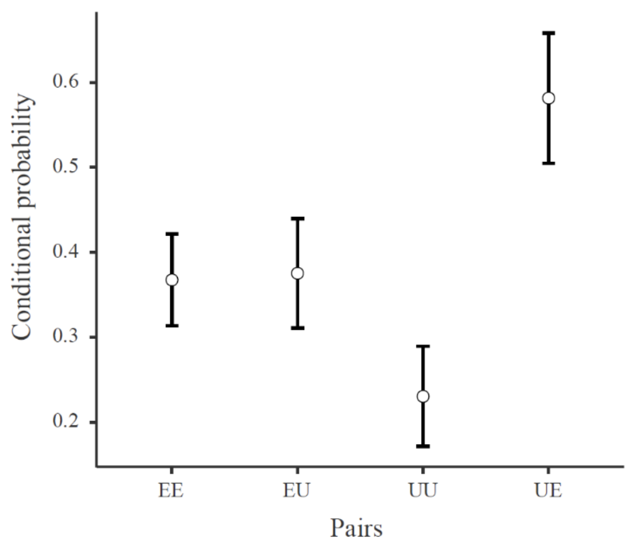

Figure 10. Conditional recall probability of all possible pairs for the exciting and unexciting conditions

Discussion

This experiment addressed whether personality-based organization in memory for a non-person object would occur in the absence of clear perceived valence of the stimuli. In Empirical Chapter II, we report evidence of organization when learning about tourism destinations – a target perceived as having a personality – but no direct evidence that this organization uses personality as a template. A negativity, instead of incongruence effect, suggests that valence has one of two impacts: either as the primary organizational principle, or as an overriding influence, manifesting despite of, and impeding, personality-based directives for organization. We extend the work reported in Empirical Chapter II by using the same method (itself adapted from Hastie & Kumar, 1979) while creating a setting with no perceived difference in valence in the stimuli.

Like in Empirical Chapter II, we find signs of memory organization of the information provided to participants. Specifically, when a less exciting item (E-) is recalled, the next item is more likely to be an exciting item (E+) than another less exciting one (E-). Conversely, when an E+ item is recalled, the next one is equally likely to be E+ or E-. This matches the predictions of the associative network model of person perception (Srull, 1981) closely if the less exciting items are also considered less relevant (Fiske, 1980). Within this framework, irrelevant items are not well integrated into the associative network; with scarce inter-item connections, the activation of an irrelevant item is likely followed by a return to the node representing the object, and the memory search is restarted from there. As such, after a congruent item is recalled (in this case, an E+ item), it is equally likeable that either another congruent (E+) or an irrelevant (E-) item follows. On the other hand, after an irrelevant item is recalled (in this case, an E- item), it is more likely that a congruent (E+) item is recalled next. In short, assuming our less exciting (E-) items to be less relevant to the extent of affecting recalls, the pattern in our conditional probability analysis matches the predictions of the model. Furthermore, whatever triggered this difference in conditional probabilities seems dependent on the perceived trait in the material, regardless of expectation conditions; this is further suggested by our finding of the same pattern in the conditions which had no expectation set whatsoever.

If the experimentally-set expectation is not driving the participants' processing of the material, it is natural that we do not observe an incongruence effect. However, a trait-related effect on recalls was observed, emerging in the absence of differential perceived valence: recall benefit for the more exciting (E+) features in impression-formation conditions. Considering the less exciting items are simultaneously less relevant informative (Fiske, 1980), this is not unexpected – items that are less extreme in their identification with the trait, less informative, and less relevant (or, simply, unrelated) are typically the least remembered (Hastie & Kumar, 1979; Srull, 1981).

At this stage we can highlight that our findings are tied to perceptions of trait; in this, they provides an answer, or at least a direction towards an answer, to the question regarding the role of valence in organizing information about non-person object, and its interaction with personality-based templates: in the absence of perceived valence in the material, personality is allowed to express itself as a guiding principle.

General discussion

Our goal was to clarify how relevant information regarding a non-person object is organized in memory. Specifically, the studies reported here pick up on the thread left in Empirical Chapter II, in which we used a non-person object known to be perceived as having a personality (the tourist destination) and person perception methods to detect organization (Hastie & Kumar, 1979). Empirical Chapter II's findings point to the existence of organization, while not on the same parameters as when we perceive others; importantly, instead of the incongruence effect known to occur in person perception, we detected a seemingly negativity effect (Coovert & Reeder, 1990; Skowronski & Carlston, 1989), likely emerging from the perceived valence of the information. It is unclear whether personality is simply not used as a template, despite it being attributed to tourist destinations, or whether the perceived valence of the information is overriding any personality-based organization.

In two experiments, we a) implement a forced-expectation task to ensure that expectations about personality are experimentally set (Experiment 1) and b) eliminate valence from the procedure that activates personality with a new set of materials containing both features of a destination of differing levels of the *exciting* trait, while maintaining fixed valence – specifically, all features are seen as equally positive, and all exciting, but one set of features is deemed significantly more exciting than the other (Experiment 2a).

As in Empirical Chapter II, we once more find evidence of organization (Experiment 2), manifested specifically in the conditional probability of recalling pair of items of particular types; namely, we note that when the first recalled item of a pair is less exciting (and, consequently, both less informative and less relevant), it is significantly more likely that the next recalled item is more exciting. This pattern mirrors that which is predicted by the associative network model of person perception as occurring between relevant and irrelevant items (Srull, 1981; Srull & Wyer, 1989). Also aligned with this theoretical framework, we report a recall advantage for the more exciting features – or, considering that these are also the most relevant, a recall disadvantage for the least informative and relevant features.

The work here reported provides an answer to its initial goal: personality seems to be used as a template for mnesic organization of object-related knowledge in impression formation for non-person objects, when in the absence of perceived valence. This is a direct answer to the question left from Empirical Chapter II: yes, personality-based templates are available (for objects deemed to have personalities), but will be overridden by valence when valence of information is perceived. When valence takes over, we see the added weight of negatively valenced information (Baumeister et al., 2001).

This is a question that likely has deeper nuance that can be explored in subsequent research – for example, whether the presence of all congruent, incongruent, and irrelevant sets of features (with fixed or varying valence) would still confirm the predictions of the associative network models of person perception. Additionally, the *exciting* trait is but one of the triad of traits that can be explored (Ekinci & Hosany, 2006), and it is known that different traits are differently – even asymmetrically – processed (e.g., regarding negativity, Skowronski & Carlston, 1989).

Future research can further investigate the interplay between personality traits and valence by orthogonally manipulating both factors. Our studies demonstrate that valence can override personality-based organization, outlining the need for a systematic inquiry aimed at disentangling these effects. By independently varying personality trait strength and valence across different conditions, future studies could also clarify whether certain traits are more susceptible to valence-driven reorganization or whether this effect generalizes across all personality dimensions, thus contributing to our understanding of how object-related knowledge is structured in memory.

How information is organized may also depend on the processing goals of the individual. In this experiment, we contrasted memory and impression formation, but different goals, such as purchasing decisions, recommendations to others, or other attitude-driven behaviors, may influence how object information is processed and recalled. For example, in a consumer context, an individual motivated to make a purchase might prioritize features that align with their needs over those that are simply the most exciting. Conversely, when recommending a destination to others, one may be more likely to recall and emphasize its most distinctive or socially desirable traits. Future research could manipulate these distinct processing goals and examine whether the patterns of organization we observed persist or shift depending on the cognitive demands imposed by different decision-making contexts.

The topic of how we structure information about non-person objects would also benefit from future research that explores such objects which, unlike tourist destinations, have no attributed personality. In these, differences may arise from the fact that people are distinctly relevant social objects known to trigger exclusive cognitive processes (e.g., Diamond & Carey, 1977; Maurer & Maurer, 1988). For example, with non-person objects, we may be significantly less motivated to create accurate representations or impressions, which increases the likelihood of relying on previous attitudes instead of using the available object-related knowledge (Park & Hastak, 1994; Sanbonmatsu & Fazio, 1990); likewise, we are less likely to process information with the goal of predicting behavior, which puts phenomena such as causal attributional inferences (e.g., Jones & Davis, 1965; Kelley, 1967) wholly in the field of person perception – a person displays a certain behavior *because* they have a certain trait, a causal direction likely inverted for a non-person object. In fact, attribution is one of many ways in which we construct a coherent representation of another person (Thagard & Kunda, 1998) – coherence is a staple of person perception (Srull, 1981; Srull & Wyer, 1989) that needs not apply to non-person object; in other words, inconsistency in a person may worry us, but be more acceptable, or even go unnoticed (and unprocessed) in a non-person object.

Finally, we discuss our results regarding attitudes. The results of both studies, taken together, point towards attitudes anchored mainly on the thoughts individuals generate, independently of their processing goal or, when forming impressions, of the experimentally set expectations. However, attitudes were observed to also be impacted by the favourability of recalls in the first experiment, while not in the second – the major difference between the studies being that in valence was present in the first (the *unexciting* items) but not the second. This prompts a different perspective: that how we abstract attitudes from object-relevant information, in impression formation contexts, is impacted by informational valence, while not being influenced by informativeness or relevance as defined by extremity in how it represents the trait. In other words, any relation between attitudes and structure (which determines recall outputs) could be exclusive to valence-based organization – not an unreasonable assumption, given attitudes' evaluative nature. This is, then, an added avenue for further research which would benefit, for instance, from novel individual measures of organization (depending, for example, on paired recalls) that, analysed in tandem with attitudes, would allow for more conclusive comparisons.

In conclusion, the research here presented is a contribution to a wider understanding of how knowledge of non-person objects is structured, outlining that personality-based organization is possible, albeit susceptible to valence-related effects. Our insights also bridge the gap between person and object perception by suggesting that while objects may be perceived as having personalities, their mnesic organization is not a one-to-one match. Expanding on these insights will increase our understanding of cognitive processes in impression formation as well as its broader implications for attitudes.

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Section III:

General Discussion

General discussion

The overarching goal of this project was to study the organization of object-relevant information in memory when forming evaluative impressions (attitudes) of non-person objects. Knowledge of this organization had already been brought to light for a specific object – people – within the field of social cognition (specifically, person perception). Impressions of other objects were, instead, the object of research on attitudes, where the focal point was the evaluative component of the impression. Using methods and theories from person perception as a jumping-off point, we aimed to bridge this gap across different sections of this thesis. Using a non-person object, we relegated the evaluative component of impressions to the background and, instead, emphasized object-relevant personality-related knowledge and its encoding in memory: whether it is organized according to the object's perceived personality dimensions, and if so, under what principles.

As detailed in Section I, the choice of the specific non-person object was a critical one. Our theoretical and methodological grounds, drawn from person perception literature, highlighted the importance of perceived personality as a template in mnesic organization; knowledge (i.e., a person's behaviors) is organized according to a clear principle: traits. If mnesic organization exists for non-person objects, a perceived personality (i.e., an available, familiar template) should facilitate its manifestation and detection. Hence the tourist destination: an object often ascribed with human traits, perceived to have a personality shown in research to be dimensional. Three sets of studies were developed and conducted under these directives.

The following paragraphs summarize the key objectives and main findings of this project that are subsequently discussed.

The first set of studies had a practical methodological goal. Studies in person perception make use of traits and corresponding behaviors; destination personality literature, however, used traits exclusively. To make use of person perception methods and designs, a destination's "behaviors" (i.e., the features that match its traits) were needed. The first set of studies

(Empirical Chapter I) addresses this, generating and validating a large set of features representing the high and low ends of each dimension's spectrum.

The main goal of the thesis was tackled in the following set of studies (Empirical Chapter II), making use of these validated features to address mnesic structure directly. Based on informative research in person perception, we hypothesized that, were similar organization and structuring to occur, so would similar manifestations. As such, our empirical approach was centered on specific measures of organization – the incongruence effect (Hastie & Kumar, 1979), a benefit to recall performance under impression formation conditions (Hamilton et al., 1980b), and conditional probabilities of pair-wise recalls (Srull, 1981). Replicating these person perception methods with the *exciting* dimension of destination personality, these studies provide the first evidence in support of structured object-relevant information in memory when forming impressions – namely, in recall performance and conditional probabilities. Importantly, these indicators of organization seem to be sensitive to the dimension, or whether the features are *exciting* or *unexciting* – with the latter manifesting a benefit in recall.

After collecting the data, a critical issue with our features became clear: besides being linked to a personality trait, they were also correspondingly *positively* and *negatively* valenced, leaving an open question on the table: whether valence is the *de facto* organizing principle, or whether its presence overrides a trait-based directive. This was the question driving the development of the third and final set of studies (Empirical Chapter III). A forced-expectation task in the first experiment resulted in a new set of *unexciting* but positively-valenced features; with these all-positive, but either *exciting* or *unexciting* features, we were able to remove the effect of perceived feature valence and detect dimension-based organization. These studies outlined the role of feature informativeness (or the extremity of their position along the *exciting* dimension spectrum). Through this discussion, we contend that, under this perspective, our results match the predictions of person perception models that rely on the use of perceived personality as a template for organization in memory (Srull, 1981).

In sum, this project aims to understand if a personality-based representation of an object provides a template for organizing object-relevant information – the features of the object from which we abstract an impression. It is our goal to offer some insight into this mnesic structure and organization during impression formation. Throughout the development of this project – from data gathering to testing our hypothesis – it become clear that the simple translation of theoretical and empirical understanding from person perception research to impressions of a non-person object is not direct. Whereas some evidence suggests that its principles apply to non-person objects – in this case, an object perceived as having a personality analogous to that of people –, it is not a one-to-one match. This requires clear discussion of how our study results are informative, and what directions are available to new research. The following sections detail both the main findings and additional insights, as well as their implications for our knowledge of mnesic organization in non-person objects. Likewise, we discuss the project's limitations, as well as new avenues for research that may build upon the foundations laid by this work, further extending its contributions. The final section highlights the relevance of our approach to destination personality features, and their relevance for future research in the field of destination personality

Impressions of non-person targets: is information structured?

A structured representation of an object is one in which object-relevant information is encoded into memory – specifically, an associative network – in non-random ways. Figuratively, in cognitive space, each bit of information about an object is placed with a stronger or weaker association with the represented object, as well as with stronger or weaker associations to other bits of information. To think of an organized, or structured, representation is, then, to assume that there is a structuring principle that determines this placement in cognitive space, or the strength of these associations. An associative network is not, naturally, directly observable, but this non-random encoding manifests itself in how we recall – as previously detailed, there are known indicators of an organized representation, such as better overall recall of information, a recall advantage to a certain type or category of information (Hamilton et al., 1980b, 1980a; Hastie & Kumar, 1979), or even specific patterns of conditional recall (Srull, 1981; Srull et al., 1985). Our answer to whether our representations of personality-laden non-person objects is structured rests on such indicators.

We believe our data allows us to confidently say that such organization exists. We now isolate and examine key findings that support our assertion.

The first finding that suggests this positive answer is the *superior performance in overall recalls* that we found repeatedly in impression-formation conditions when compared to memory-only conditions. It is when we process information under the goal of forming impressions that we are more likely to organize – in these circumstances (in opposition to when we process under a mere memorization goal) information is categorized when encoded, and these categories make it easier to recall a higher amount of information.

Furthermore, when forming impressions, we strive towards a cohesive, meaningful representation. For this reason, *conflicting items* (such as positive and negative aspects of the objects, or expectation-congruent and expectation-incongruent information) *are processed differently*, with some benefitting from more elaborative encoding, of which we also see evidence in our data. Namely, a persistence in preferential recalling of the *unexciting* (but also negatively valenced) information (Empirical Chapter 2, Experiments 1 and 2; Empirical chapter 3, Experiment 1), and, in the absence of perceived valence, a recall advantage to *exciting* items (Empirical Chapter 2, Experiment 2). These effects are discussed in detail in the following sections.

Finally, and also a reflection of this differential elaborative encoding given to specific types of information, we routinely observed differences in conditional probabilities of recalling specific items depending on what type of information was recalled immediately before (Empirical Chapter 2, Experiments 1 and 2; Empirical Chapter 3, Experiment 2). Elaborative encoding implies that items of a specific type are more frequently compared to others during encoding – namely, to others of a different and conflicting type – resulting in a higher number of associative pathways that lead to it in the network (i.e., after an item of a certain type or category is recalled, the likelihood of either repeating or changing categories differs, Srull, 1981; Srull et al., 1985; Srull & Wyer, 1989). In our case, for example, *unexciting* items receive such elaborative encoding (Empirical Chapter 2, Experiments 1 and 2) and are thus more interconnected to other items than their counterpart: *exciting* items. For this reason, our observation of higher recall rates for cross-type pairs of items attests to a structure subject to a guiding principle tied to the quality of the information.

In short, our conviction that evaluative representations of non-person objects (specifically, those that benefit from a perceived person-like dimensional personality) are structured comes from convergent indicators across our empirical studies: better overall recall in circumstances in which we strive for a cohesive impression; a tendency to recall one type of information over another; and a pattern of differing conditional probabilities of recalling one type immediately after another.

Naturally, stating that such structure exists invites an array of new questions. In the following sections we attempt to answer those whose answer is within the limits of our data and methods, and to offer theoretically informed views where they extend past the reach of our empirical grounds.

Is perceived personality used as an organizing template?

While our data converged on a positive answer to the question of whether structure exists, there is no equally clear answer to the question of what role is played by perceived personality. Patterns in our data allow us, however, to claim that perceived personality *can* have a role in how we organize relevant information about a non-person object.

For one, we observe effects based on perceived differences in the features; in the second Empirical Chapter, *unexciting* items are preferably recalled, although this does not necessarily point towards perceived personality as an organizing principle, as these items are also seen as negatively valenced (confirmed in Empirical Chapter 3, study 2a). It is only in Empirical Chapter 3 (namely, study 2b), with variations in perceived valence of the information removed (all items are perceived as equally positive), that the effect of perceived personality is observed. In this study, we are not dealing with differences between equally positive *exciting* and *unexciting* items; instead (as shown in Empirical Chapter 3, Study 2a), the difference in how these items are recalled stems from a perceived distinction between *more exciting* and *less exciting* items (with the former being recalled significantly more frequently than the latter, a difference discussed in depth in the following sections of this discussion). This is, nonetheless, an impact of perceived personality: information that is more extremely classified along a trait's continuum is more diagnostic of said trait, and therefore more relevant and *informative* (Fiske, 1980; Skowronski & Carlston, 1989), much like a million-dollar donation to a cause is more diagnostic and informative of the trait *generous* than giving ten cents to a homeless person.

Furthermore, not only does our data show that informativeness *regarding a trait* (i.e., personality) is impactful, but it also attests to individuals' sensitivity to relatively small variations in how informative the information is. After all, as seen in Empirical Chapter 3, Study 2a, both the *exciting* and supposedly *unexciting* items were seen as exciting, albeit differently so.

Patterns of conditional probabilities of paired recalls of information converge with this assessment of the role of perceived personality. As described above, differences in how certain pairs are more frequently recalled stem from a perception of trait-related differences between the different items. A look at the totality of our data shows the distinction between results reported in Empirical Chapter 2 and those of Empirical Chapter 3, namely in Study 2. Those of the former contain the already mentioned confound with valence; the latter do not, and would, alone, configure sufficient empirical grounds to our claim that perceived personality is driving these differences in conditional probabilities. However, it is not unarguable that even valence-driven results are related to perceived personality – an argument we will detail in subsequent sections of this discussion.

Overall, while the unexciting/negative confound may have delayed our response to the question of whether perceived personality plays a role in mnesic organization of information regarding a non-person object, data from the third empirical chapter, in which this confound is kept static, shows organizational indicators that are based on trait-related differences in the information. In this particular case, "trait-related differences" are effected by the information's differing levels of informativeness.

A more in-depth look at informativeness sheds an alternative light on the preferential recall of *unexciting* information, found across Empirical Chapter 2. We have been dismissing these effects as originating exclusively from the information's perceived negative valence; however, information can draw its informativeness from two sources (Fiske, 1980): its extremity, and its negativity (Peeters & Czapinski, 1990), both things that characterize these *unexciting* features (as demonstrated in Empirical Chapter 2, Study 2a). This would reconcile these results with a personality-based explanation: it is not only due to the inherent negativity of the information, but because that same negativity – as well as its extremity – make it more informative *of the destination's personality*. Accordingly, these negatively-valenced and more extreme items are typically more recalled than their positive counterparts (Skowronski & Carlston, 1987), and hold our attention for longer periods of time (Fiske, 1980), suggesting added cognitive processing in line with the notion of elaborative encoding (Srull, 1981; Srull et al., 1985; Srull & Wyer, 1989)

In conclusion, from this standpoint – that both extremity and negativity make information informative and, therefore, more memorable –, our results coherently point towards perceived personality being used as an organizing template, along principles predicted by person perception literature – not by incongruence, but by informativeness

The absence of an incongruence effect

While we can name convergent results from multiple moments in this project that point towards personality-based mnesic organization for a non-person object, one particular result would show that it happens in ways similar to how we perceive other people: the incongruence effect (Hastie & Kumar, 1979). Were it to occur, participants told to expect an *exciting* destination would preferably recall *unexciting* information, while those told to expect an *unexciting* destination would preferably recall *exciting* items. Such pattern was absent from our data. Instead, we observed either a significantly superior recall performance in all conditions for *unexciting* items (Empirical Chapter 2), or for *exciting* items (Empirical Chapter 3, Study 2b).

It is important to preface any discussion on results that diverge from predictions from person-perception literature by highlighting that, in researching impression formation of non-person objects, such divergences are never unexpected – people are, after all, a *sui generis* object. Under this light, the recall benefit for *unexciting* items observed across the second empirical chapter, instead of a non-finding, is informative as to where the perception of people and non-person objects differ. Superior recall performance for negatively-valenced stimuli is suggestive that the valence of information acts as a guiding principle, overriding, and effectively masking, any influence of perceived personality. As detailed in the discussion section of the second empirical chapter, it is not surprising for negatively-valenced information to be the recipient of elaborative encoding, which was reflected equally by our results concerning conditional recalls of pairs of features – a *negativity* effect (Baumeister et al., 2001; Coovert & Reeder, 1990; Kanouse, 1984; Skowronski & Carlston, 1989; Vonk & Van Knippenberg, 1994).

Interpreting preferential recall of *unexciting* features as a negativity effect is, however, is but one approach – one that paints our results as something unrelated to personality. As we have discussed in the previous subsection, a focus on item informativeness brings these results back into the realm of personality, by considering them (by virtue of both their negativity and extremity) as highly informative in regard to the trait. Under this light, while the preferential recall of *unexciting* features is still not an incongruence effect, it is nonetheless expected under the directives of person perception theories and literature.

Alternatively, if we assumed the existence of positive previous attitudes towards the concept of a "tourist destination", accompanied by positive expectations of its features, we could reinterpret our second empirical chapter's results as a *de facto* incongruence effect. At the intuitive level, this seems possible: our experience in tourist destinations is typically positive, even exciting. As underlined in the second empirical chapter, this is also confirmed by research. While founding research on the incongruence effect (Hastie & Kumar, 1979) was attentive to a preferential recall of incongruent information from within the pool of information given to participants (i.e., the behaviors read within the experimental setting), the subsequent formalization of an associative network model of person perception (Srull, 1981; Srull et al., 1985; Srull & Wyer, 1989) expands the definition of elaborative encoding by including comparisons of that incongruent information with previous knowledge – including congruent information about the object from the individual's memory. In the case of tourist destinations, it is probable that we have both previous knowledge and memory of previous experiences that are positive and exciting. Thus, the balance is shifted when all this information is brought to the table: incongruent information is now a minority, which is known to trigger a stronger incongruence effect (versus an equal number of congruent and incongruent information, Hastie & Kumar, 1979; Srull, 1981).

The issue with this interpretation of our apparent *negativity effect* as an actual incongruence effect – due to positive previous attitudes – is that it is hard to reconcile with our observation that, among our participants, those told that the destination was *exciting* do indeed rate it as more exciting than those told it was *unexciting* – taken as a sign of a successful experimental setting of expectations. Which, then, prevails? How likely is it that, when encoding information, previous positive attitudes are imposing congruency-based processing, while the subsequent explicit report of how exciting a destination is drawn from our manipulated expectations – for example, by recalling what they were told of the destination in the experimental setting? This is an open question for which our data, unfortunately, does not provide a conclusive answer; while every study in this thesis included a measure of attitude towards the destination, we repeatedly observed only slightly positive attitudes (i.e., just above the neutral point) regardless of condition.

Empirical Chapter 3, and specifically Study 2, offers a different pattern: in the absence of perceived differences in valence, the trait is allowed to express itself as a structuring force, namely by distinguishing the more informative from the less informative features (via their extremity, as negativity was absent), and outputting a recall preference for the former. While this is certainly no incongruence effect, it is by no means a guarantee that one simply cannot happen (which would be another critical difference between perceiving people and non-person objects). If the difference that drives preferential recall is in the item's informativeness, or trait-relevance, superior recall for congruent items is expected if competing with irrelevant, or less relevant items – the least recalled category in person perception (Hastie & Kumar, 1979; Srull, 1981). In short, the reason why there was no incongruence effect in the absence of valence is not necessarily tied to the nature of the perceived object (person vs. non-person), but to the fact that there are no incongruent items to begin with. In this context, superior recall for the *exciting* items is to be expected.

Can Empirical Chapter's 3 *congruency* superiority also be interpreted under the assumption of previous positive attitudes and knowledge about the object? It can, without any change in expected results: congruent knowledge would be likewise mobilized, and the cognitive contexts would still be composed of congruent versus irrelevant material. An incongruence effect would still not be viable.

In conclusion, the absence of an incongruence effect in our data is tied to specific informativeness-related circumstances. It does not follow from its absence that it cannot occur. This is, we believe, one of the most interesting and challenging outstanding questions that can be tackled by prospective studies: can an incongruence effect happen when perceiving a non-person object imbued with a human-like personality? One obvious step would be to replicate our methods with either materials or a trait-dimension that would secure differences in expectation-congruity, while holding both valence and informativeness constant (i.e., information that is exciting and unexciting, but equally positive or negative, and equidistant from the trait's scale midpoint). Variations on this theme (different object, different conceptualization of dimensional personality, different trait-dimension) would shed light on the interplay of the many contributing processes and elements (e.g., informativeness vs. incongruency).

Valence as an independent organizing principle?

Throughout multiple studies, whenever stimuli were negatively valenced, it was preferentially recalled. Accordingly, we have repeatedly observed that cross-valence pairs were recalled together at significantly higher frequency than same-valence pairs. We have detailed two possible perspectives on these results that highlight in them the influence of perceived personality.

A third perspective expands on the negativity-as-informativeness view and also sees these results as not entirely surprising when considering existing person-perception literature. We have previously noted that individuals show preference for, and give additional weight to, both extreme and negative information when forming impressions of others (Coovert & Reeder, 1990; Fiske, 1980). On the other hand, this has also been shown to be trait-specific: when judgements are morality related, negatives outweigh the positive; the inverse is observed when the judgements are ability related (Skowronski & Carlston, 1987, 1989). Translating this to our research, we would consider if the weight given preferentially to negatively-valenced information is tied to the trait under study: *exciting*. In this case, the threshold for how many *unexciting* features an *exciting* destination can have (before being re-categorized as *unexciting*) is low – which we know from first empirical chapter's data (and is discussed in detail further in this discussion). Could this be reversed if we consider a different trait, or a different dimension? Would positively-valenced information be more impactful with, for example, *conviviality*? Perhaps knowing that locals are available and welcoming could, on its own, be sufficient to consider as *convivial* a destination that has other seemingly unfriendly or unsociable features. This is an open question in need of further research; in the case of *conviviality*, this project already offers validated features that instantiate this trait-dimension, but other dimensions can be explored. If valence-based effects are trait-dependent, then valence need not be considered an organizing principle independent of personality – instead, it organization would depend on an interplay between these two forces. It would not be a matter of "which one overrides the other" as much as when and how they play together. In this sense, it is reasonable to argue that valence-driven effects are personality related.

Many loose threads remain, with regards to valence and its structuring, that can yet be examined. In fact, the perspectives we have already detailed do not exclude a potential, independent role of valence in perception and organization of object-relevant material in memory; they re-frame it. But were valence the operating organizing principle, would we not also observe the same results? Additionally, negativity prevails in many known cognitive processes (Baumeister et al., 2001). It is not unreasonable to assume that it also acts in the context of this thesis, despite masked by other factors. It would expand our understanding of its potential role in the organization of information of personality-imbued non-person objects if it could be disentangled from the impact of a feature's informativeness. Such inquiries would require creativity as negativity itself contributes to how informative a given feature is (Fiske, 1980).

In sum, while valence appears to play a role in structuring our impressions of non-person objects that benefit from a human-like personality, this role is intertwined with the perception of this same personality. Whether valence can act independently as an organizing factor, instead of merely amplifying trait-based distinctions, is beyond our data, and remains an open question to be tackled by future work.

Theoretical implications

So far, we have been able to answer the questions that launched this project: forming evaluative impressions of personality-imbued non-person objects leads to a structured representation, and this structure makes use of the perceived human-like personality as a template. It seems that, whenever present, a human-like personality can mobilize the same person-perception principles and cognitive processes involved in organizing information in memory, even for a non-person object.

This claim is derived from a match between our results and the predictions of person-perception literature. These predictions (described in this thesis' Section I: Chapter II) are mostly contained in the Associative Network Model of Person Perception (Srull, 1981; Srull et al., 1985; Srull & Wyer, 1989; Wyer et al., 1984), as well as literature focused on the effects of item informativeness (Fiske, 1980; Skowronski & Carlston, 1987).

Perhaps the most general prediction is that superior overall recall is expected for individuals operating under an impression formation processing goal, when compared to those attempting to simply memorize descriptions of behaviors (Hamilton et al., 1980a, 1980b; Srull et al., 1985). This difference was also repeatedly observed in our results, attesting to the influence of perceived personality in triggering an attempt to form organized impressions, even with a non-person object.

A second prediction is derived from the model's 7th postulate: "Once an evaluative person concept has been formed, behaviors of the person that are evaluatively inconsistent with this concept are thought about in relation to other behaviors that have evaluative implications in an attempt to reconcile their occurrence. This leads to the formation of associations among these behaviors." (Srull & Wyer, 1989, p. 69). Our own analysis of conditional probability of recalling specific pairs of items is in line with the assumptions of this postulate. First, same-type pairs were routinely recalled at significantly lower rates than cross-type pairs, thus mirroring the prediction that "given that a congruent item has been recalled, it is extremely likely that the next item recalled will be an incongruent item" (as reported by Srull, 1981, p. 451). Accordingly, and also in line with the model, we observe no significant clustering as manifested by the absence of significant differences in ARC scores (in convergence with results by Hastie & Kumar, 1979 and Srull, 1981).

We find divergences from the model within the realm of congruency. For example, it is predicted that the conditional probability of recalling an incongruent item after a congruent one should be higher than that of recalling a congruent item after an incongruent one. Another one of its central predictions: the incongruence effect (Hastie & Kumar, 1979). While our results on this particular indicator fall outside the model's predictions, they do not fall outside the predictions of person perception literature that has explored the impact of how informative a certain behavior (in our case, a destination's feature) is in regard to its trait. In other words, our results still manifest an organization that uses personality as a template; instead of relying entirely on incongruence, however, we see a reliance on informativeness.

Under this light, the instanced in which we observed a significant preferential recall of *unexciting* items that were simultaneously negatively matches the anticipated preference for informative items – after all, both extremity and negativity add to a feature's informative and are expected to increase cognitive resources spent on them (Fiske, 1980). Once more, our analysis of conditional recalls mirrors this hypothesis, as the superior recall of cross-type pairs is an indicator of a relatively higher number of pathways and interconnections in the associative network (themselves a consequence of elaborative encoding).

When valence was removed (Empirical Chapter 3, Study 2), we observe that the most recalled information was that which was rated more extremely (i.e., more distant from the scale's midpoint) in how it was diagnostic of the *exciting* trait, which reflects its informativeness. Furthermore, items that are less informative are equally less relevant for trait inferences; that they were least recalled matches the predictions of the Associative Network model as well, in which the irrelevant items are the least recalled, even when compared to congruent items (Srull et al., 1985).

Overall, this suggests that existing models of person perceptions are viable frameworks for understanding how our representations of personality-imbued non-person objects are structured in memory. Granted, refinement may be necessary. We demonstrate, for example, a less-than-expected reliance on congruency than that which is predicted by the Associative Network Model of Person Perception; on the other hand, we show the expected impact of an item's informativeness, as described in person perception literature. Recognition of this interplay already offers a more nuanced view of the cognitive processes involved in memory structuring and in how we evaluate the world outside the category of human entities. More importantly, this may call for an expanded framework that integrates the literature we have discussed, and possibly other known person perception phenomena involved in how information is organized.

Open questions and future research

Different new avenues for research were already hinted at in this discussion. Some remain unmentioned, but relevant, nonetheless; all would contribute to a more rigorous delimitation of where the perception of non-person objects, and the organization of relevant information, either overlaps with, or is distinct from the perception of other people.

We have mentioned, for example, that research can explore mnesic structure and organization using information that represents a different trait-dimension. This could answer different questions, such as whether our observed effects of valence are trait-specific, and whether they can be reversed when using different traits in which positively-valenced information is given extra weight in impression formation; or whether different dimensions are differently informative towards a perception of a non-person object's personality.

Naturally, the question of how we structure object-related information when we evaluate would also benefit from research that uses a different host of objects. Some may, like the tourist destination, be typically assigned a dimensional personality, albeit one with different dimensions and traits. It would be just as important to understand how we process and organize information when forming evaluative impressions of non-person objects to which we do *not* assign a human personality – what guiding principle would operate in the absence of a tried-and-true template?

Would valence, in these circumstances, shine as a truly independent organizing principle? Furthermore, tourist destinations are familiar objects towards which we can mobilize previous attitudes and knowledge. These can be a source of confounds, despite our use of fictional destinations. We believe it would be a natural step for prospective inquiries to approach cognitive structuring using entirely novel objects, so as to provide clearer insights into the role of personality in organizational cognitive processes.

Other perspectives on organization would also be informative. While we have focused on a single trait, perception of information that evokes multiple traits offers a different template for organization, one in which each piece of information is stored in a hierarchical structure under the trait it evokes (e.g. Hamilton et al., 1980b). With tourist destinations, a three-dimensional personality already has support in literature, and features for all three dimensions, assessed in the first Empirical Chapter of this thesis, were made available to researchers.

Additionally, future research can help delimit where the organization of information differs between perceiving other people and non-person objects by approaching some well-known phenomena from person perception. One example is the relationship between human personality dimensions, such *warmth* and *competence* (Fiske et al., 2007; Kervyn et al., 2010). For instance, Judd and colleagues (2005) have shown the perceived relationship between these dimensions to be contextual. On the one hand, when a single group was the object of evaluation, a positive relationship was found, akin to a halo effect (Thorndike, 1920) – knowing an individual or group is competent led to perception of them also being warm. However, when the judgement is comparative (i.e., two individuals or groups), they observe a reversal: being judged highly on a dimension was accompanied by lower ratings in the other. This negative correlation observed in comparative judgements then clashes with belonging to one of the compared groups: "When in-group identification is particularly strong and/or intergroup conflict particularly intense, the motivation towards enhancement of the in-group may eliminate any evidence of the compensatory comparative process." (Judd et al., 2005, p. 910). Many of these nuances are unknown about the role of personality in the perception of non-person objects, and therefore fertile ground for future inquiries: is there such a relationship between destination personality dimensions? Knowing that a destination is *exciting*, would we infer something about the other dimensions, even though no corresponding features are shown? Can this interfere we how we organize information?

Other replications would be of interest. Since different cultures hold different values, different habits and lifestyles, as well as different views of other countries, cross-cultural replications would clarify whether these results are culturally bound or reflect more universal cognitive processes, or whether some of the discussed personality-related structuring can be shaped by either culturally specific dimensions of perceived personality or association between traits and features. Additionally, each culture borders different specific others; phenomena such as familiarity with neighboring destinations, or perceived similarity to our own culture, may also play a modulating role in the degree to which personality directs mnesic organization.

Ultimately, these questions exemplify the variety of avenues for future research to contribute to our understanding of how information about a non-person target, during impression formation, is structured and organized in meaningful ways. Such pursuits would lead to a refined model of non-person impression formation, highlighting where and when the principles of person perception are (and where and when they are not) applicable.

Insights into tourist destination's personality

The first question addressed empirically in this thesis is also the last to be addressed in this discussion. Our empirical work targets a specific gap in the destination personality literature: the lack of concrete instantiations of its dimensions through a set of related features. The four-stage study conducted to generate and validate these features provides clear insights into how destination personality is perceived. We now turn to these findings, followed by a discussion of the information retrieved from the remaining studies that may also hold relevance to this topic.

Asymmetries in representativity/diagnosticity

Results show that the generated *high* and *low* features of personality traits are not subsequently evaluated as symmetric in their diagnosticity ratings. The extremes of a dimension (e.g., very exciting vs. not exciting) are not equally distant from the middle point, showing different levels of diagnosticity. *High* features are more diagnostic of their dimension compared to alternatives, while *low* features are equally undiagnostic across all dimensions. Why is this so?

One possibility is that we're dealing with two different tasks: generating features from a given dimension (e.g., *very* or *not very exciting*), and assessing how diagnostic those features are of original or alternative dimensions. The first task involves listing features we expect in a destination of which we have expectations (e.g., an exciting one), while the second is an evaluation of a feature's value along a dimension and asks for a best-match decision. The first task is deductive, where a dimension is given and instantiations are requested; the second is inductive, where a feature cues an inference about the dimension. These tasks likely rely on different processes: deductive inferences are rare and memory-based, while inductive inferences are frequent and occur during impression formation. This is known as the Induction-Deduction Asymmetry (Maass et al., 2001, 2005, 2006). This hypothesis was tested both with a human and a non-human target which, like our destinations, individuals often describe with human characteristics (e.g., the wind), showing that it is "typical of and limited to person perception" (Maass et al., 2006, p. 99). This does not exclude explanations rooted in processual differences, of which the possibilities are many; however, due to the scarcity (to the best of our knowledge) of research applying person perception methods and models to impression formation of non-person objects, it is difficult to determine the adequacy of this category of explanations.

A different explanatory approach it to consider that the high and low ends of a dimension's spectrum may be qualitatively different things: high represents the expected extreme of said dimension, while low is nothing but its absence – not it's extreme opposite. In short, the dimensions of destination personality, as proposed (Ekinci & Hosany, 2006), may be unilateral. In this aspect, these dimensions would be at odds with those of person perception, in which dimensions and traits vary between two clear opposites, such as *intelligent-stupid* (e.g., Skowronski & Carlston, 1987). This is not surprising when considering the origin of the dimensional destination personality framework, which, translated from brand personality research (Aaker, 1997), was based exclusively on positively-valenced traits. As such, the resulting dimensions may vary only between one extreme and a point of neutrality, like a single half of a rating scale that originally ranged between -5 and 5, but now exclusively encompasses the range between 0 and 5. The full range of, for example, the exciting personality dimension could, then, include a boring or dull extreme. Under this assumption, low features (generated from, for example, a *very little exciting* cue) may simply be neutral; accordingly, they would not be diagnostic of any dimension. The difference between high and low features is, then, that the former helps confirm whether a destination is characterized by any given dimension, while the latter simple do not help reject it.

Asymmetries in expectations

From pitting features against real-world destinations of different personalities (Stage 4), another asymmetry arises: this one touching on individuals' expectations regarding cities that are highly exciting, convivial, and genuine, and those that are not. Two interesting insights need discussion.

For one, the *low* features – previously noted as not diagnostic of any dimension in particular – are seen now distinguishing between high and low destinations. In other words, while, for example, unexciting features do not help in assessing whether a destination is or is not exciting (their low diagnosticity), they are nonetheless attributed to a destination already deemed so – significantly more than exciting features. A contradiction: if we know the city to be unexciting, we expect it to have unexciting features; if we know nothing about the city, knowing it has unexciting features does not lead to appraising it as unexciting.

Secondly, we seem to have asymmetrical expectations of destinations according to whether they occupy the higher or lower end of a given dimension's continuum. Using the exciting dimension for simplicity: if a city is deemed exciting, it is expected that it has many exciting features, while having few unexciting ones; conversely, if a city is deemed unexciting, it is expected to have both types of features equally. In short, of an exciting destination we expect discrepancy; of an unexciting, homogeneity. In this asymmetry, perception of a destination's personality matches that which is known for person perception, and also known to be trait-dependent: "negative morality behaviors were seen as more diagnostic of category membership than were positive morality behaviors, and positive ability behaviors were seen as more diagnostic of category membership than were negative ability behaviors" (Skowronski & Carlston, 1987, p. 696; for moderate levels of both traits and behaviors, see Rusconi et al., 2017). It is important to note, however, that Skowronski and Carlston (1987) deal with valence along a trait's complete spectrum – honest and intelligent are positively-valenced, dishonest and stupid are negatively-valenced. Valence in our features and dimensions also merits discussion.

Valence

While we discuss it in its own subsection, valence is imbued in almost all aspects of this project (and, congruently, in most things in life). As stated before, the destination personality framework adopted in this thesis (Ekinci & Hosany, 2006) has at its inception a brand personality scale (Aaker, 1997) that relied exclusively on positive traits. It is perhaps a result of this that all dimensions seem to refer to mostly (if not entirely) positive aspects; it is reasonable to assume that most if not all people prefer a tourist destination that it excites them, that is genuine, and whose locals are convivial. At least, one would be hard-pressed to find someone who would state their preference for a holiday destination as "dull, unfriendly, and deceitful".

Whether an entirely different destination personality framework would emerge from an approach that doubled the current dimensions, extending their ranges to include their diametrical opposites, is an open question. As the three-dimensional destination personality framework is limited by this gap in knowledge around negativity, so is the work here presented. It is impossible to determine whether fully ranged dimensions (from positive to their actual negative opposite) would have revealed vastly different insights.

Open questions and future research

The most relevant open questions stem from the unexplored involvement of valence. First and foremost, a one-sided, incomplete conceptualization of destination personality is a pressing issue. Consequently, we believe the first requirement is a "back to the drawing-board" approach to the concept: the uncovering of a dimensional destination personality that includes negatively-valenced traits. Person perception literature steps up once again, offering the theory and the methodological templates, with seminal works on dimensional human personality (e.g., Rosenberg et al., 1968).

From such work – granted that it would either uncover fully-ranged positive-to-negative dimensions, or even new unsuspected dimensions – new questions arise that further research can attempt to answer. For example: would features generated for these negative opposites (e.g., dull, unfriendly, or deceitful, to quote the same hypothetical examples as before) have the expected clear diagnosticity, on par with their current high features? If so, would we observe the same homogeneity in which our low cities were deemed likely to have high and low features equally?

Besides the impact of valence, further differences (and similarities) between person and non-person personality can be explored. We have discussed the Induction-Deduction Asymmetry (Maass et al., 2001, 2005, 2006) and how it presented a direct comparison between a person and a non-person object. The authors outlined the limits of a known phenomenon, showing it to be exclusive to person perception – even when pitted against another object which we describe with typically human trait-adjectives. But phenomena known as typical of person perception abound – such as correspondence bias (Heider, 1958; Kelley, 1967), spontaneous trait inference (Winter & Uleman, 1984), halo effects (Thorndike, 1920), primacy effects (Asch, 1946), or negativity biases (e.g., Coovert & Reeder, 1990), to cite a few examples. Exploring whether each of these known phenomena translated to the impression formation of non-person targets would lead to a progressively more delimited understanding of how we form impressions in general.

In summary, our results address one knowledge gap in destination personality literature – the absence of features that instantiate each personality dimension – but they simultaneously outline two gaps. The first is related to valence and its impact and is expressed most urgently in the need for a more exhaustive conceptualization of destination personality that incorporates negatively-valence information from its inception, thus placing it closer to conceptualizations of dimensional personalities from the field of person perception. The second is the vast category of cognitive and social phenomena known to occur in person perception; specifically, whether (and how much, and how many of) these translate to personality-laden non-person objects. We believe the results here reported, as well as their discussion, to be a relevant first step in these pursuits.

Final Remarks

With this project, we set out to examine whether principles of person perception – specifically, the organization of information in memory – apply to non-person objects perceived to have personality traits. Using the tourist destination personality as a target, we investigated whether perceived personality functions as a template for structuring object-relevant information in memory during the formation of evaluative impressions. Our findings indicate that impression formation of such objects follows structured patterns, and that perceived personality influences how information is encoded and recalled.

Across three sets of empirical studies, several key indicators of structured mnesic organization emerged. First, recall performance was consistently higher when participants engaged in impression formation rather than simple memorization. Second, patterns of conditional recall probabilities revealed specific, cross-type interitem associations, suggesting an associative structure guided by a perceived trait. Third, the observed effects of informativeness – particularly the preferential recall of the more diagnostic features – support the notion that personality serves as a guiding principle for memory organization.

However, our results suggest that the application of person perception principles to non-person objects does not follow a direct one-to-one correspondence. Notably, we did not observe a classic incongruence effect, where expectation-inconsistent information is recalled preferentially. Instead, our findings indicate that informativeness, rather than incongruence *per se*, plays a primary role in structuring memory representations of personality-laden objects. Additionally, valence emerged as a significant factor, raising the question of whether it functions as an independent organizing principle or amplifies distinctions based on perceived traits.

Beyond theoretical contributions, this research also addresses an important gap in destination personality literature by providing validated features that concretely instantiate personality dimensions. This work highlights asymmetries in diagnosticity, particularly in how high and low attributes contribute differently to perception and recall.

While this thesis advances our understanding of how person perception theories extend to non-person objects, it also presents avenues for future research. Expanding the framework to encompass a broader range of objects, additional personality dimensions, and cross-cultural perspectives would further clarify the extent to which cognitive principles governing human perception apply to non-human entities. Future studies could also examine the interaction between valence and personality, particularly whether negatively valenced features consistently play a dominant role in structuring recall across different object categories.

In sum, this research underscores the role of perceived personality in shaping how information about non-person objects is encoded and retrieved. By integrating insights from person perception literature with destination personality research, we contribute to a more nuanced understanding of how cognitive processes extend beyond human perception to influence evaluations of the broader environment.

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Section IV:

Appendices

Appendix A. Supporting information for Empirical Chapter I

1. Study 2

1.1. Diagnosticity ratings

Model Info

Info	
Estimate	Linear mixed model fit by REML
Call	Value ~ 1 + diagnostic_dim + rep_status + original_dim + diagnostic_dim:rep_status + diagnostic_dim:original_dim + rep_status:original_dim + diagnostic_dim:rep_status:original_dim+(1 | participant)+(1 + diagnostic_dim | feature)
AIC	26991.072
BIC	27186.553
LogLikel.	-13478.873
R-squared Marginal	0.251
R-squared Conditional	0.408
Converged	yes
Optimizer	bobyqa

Fixed Effect Omnibus tests

	F	Num df	Den df	p
diagnostic_dim	42.647	2	50.0	< .001
rep_status	217.768	1	49.7	< .001
original_dim	2.643	2	49.6	0.081
diagnostic_dim ✻ rep_status	19.993	2	50.0	< .001
diagnostic_dim ✻ original_dim	3.097	4	50.0	0.024
rep_status ✻ original_dim	0.757	2	49.7	0.474
diagnostic_dim ✻ rep_status ✻ original_dim	2.686	4	50.0	0.042

Note. Satterthwaite method for degrees of freedom

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	95% Confidence Interval Lower	95% Confidence Interval Upper	df	t	p
(Intercept)	(Intercept)	3.4202	0.0862	3.251	3.5891	107.1	39.6968	< .001
diagnostic_dim1	original - filler	1.4603	0.1669	1.133	1.7873	50.0	8.7508	< .001
diagnostic_dim2	other - filler	0.8683	0.1681	0.539	1.1978	50.0	5.1648	< .001
rep_status1	low - high	-1.6099	0.1091	-1.824	-1.3961	49.7	-14.7577	< .001
original_dim1	Genuína - Excitante	-0.3100	0.1363	-0.577	-0.0429	49.6	-2.2747	0.027
original_dim2	Sociável - Excitante	-0.0976	0.1279	-0.348	0.1531	49.6	-0.7632	0.449
diagnostic_dim1 ✻ rep_status1	original - filler ✻ low - high	-2.0956	0.3337	-2.750	-1.4415	50.0	-6.2791	< .001
diagnostic_dim2 ✻ rep_status1	other - filler ✻ low - high	-1.8302	0.3362	-2.489	-1.1712	50.0	-5.4431	< .001
diagnostic_dim1 ✻ original_dim1	original - filler ✻ Genuína - Excitante	-0.9123	0.4171	-1.730	-0.0948	50.0	-2.1873	0.033
diagnostic_dim2 ✻ original_dim1	other - filler ✻ Genuína - Excitante	-0.3499	0.4202	-1.173	0.4738	50.0	-0.8326	0.409
diagnostic_dim1 ✻ original_dim2	original - filler ✻ Sociável - Excitante	0.1718	0.3915	-0.596	0.9392	50.0	0.4388	0.663
diagnostic_dim2 ✻ original_dim2	other - filler ✻ Sociável - Excitante	-0.0375	0.3945	-0.811	0.7356	50.0	-0.0950	0.925
rep_status1 ✻ original_dim1	low - high ✻ Genuína - Excitante	-0.0836	0.2727	-0.618	0.4509	49.7	-0.3065	0.761
rep_status1 ✻ original_dim2	low - high ✻ Sociável - Excitante	-0.3060	0.2558	-0.807	0.1954	49.6	-1.1962	0.237
diagnostic_dim1 ✻ rep_status1 ✻ original_dim1	original - filler ✻ low - high ✻ Genuína - Excitante	1.9594	0.8342	0.324	3.5944	50.0	2.3488	0.023
diagnostic_dim2 ✻ rep_status1 ✻ original_dim1	other - filler ✻ low - high ✻ Genuína - Excitante	0.4169	0.8405	-1.230	2.0641	50.0	0.4960	0.622
diagnostic_dim1 ✻ rep_status1 ✻ original_dim2	original - filler ✻ low - high ✻ Sociável - Excitante	1.1095	0.7830	-0.425	2.6442	50.0	1.4169	0.163
diagnostic_dim2 ✻ rep_status1 ✻ original_dim2	other - filler ✻ low - high ✻ Sociável - Excitante	0.3460	0.7889	-1.200	1.8923	50.0	0.4386	0.663

Random Components

Groups	Name	SD	Variance	ICC
participant	(Intercept)	0.581	0.338	0.0965
feature	(Intercept)	0.370	0.137	0.0415
	diagnostic_dim1	1.172	1.373	
	diagnostic_dim2	1.181	1.396	
Residual		1.778	3.161	

Random Parameters correlations

Groups	Param.1	Param.2	Corr.
feature	(Intercept)	diagnostic_dim1	-0.0492
	(Intercept)	diagnostic_dim2	-0.0402
	diagnostic_dim1	diagnostic_dim2	0.8287

Random Effect LRT

Test	N. par	AIC	LRT	df	p
(1 | participant)	25	27472	464	1.00	< .001
diagnostic_dim in (1 + diagnostic_dim | feature)	21	27450	450	5.00	< .001

Post Hoc Comparisons - diagnostic_dim ✻ rep_status

Comparison									
diagnostic_dim	rep_status		diagnostic_dim	rep_status	Difference	SE	t	df	p
filler	high	-	filler	low	0.3013	0.242	1.245	49.8	0.219
filler	high	-	original	high	-2.5081	0.230	-10.896	50.0	< .001
filler	high	-	original	low	-0.1112	0.213	-0.523	90.7	0.602
filler	high	-	other	high	-1.7834	0.232	-7.690	50.0	< .001
filler	high	-	other	low	0.3480	0.214	1.626	91.2	0.107
filler	low	-	original	low	-0.4125	0.242	-1.707	50.0	0.094
filler	low	-	other	low	0.0468	0.243	0.192	50.0	0.848
original	high	-	filler	low	2.8094	0.216	13.035	86.9	< .001
original	high	-	original	low	2.3969	0.182	13.170	49.7	< .001
original	high	-	other	high	0.7247	0.148	4.894	50.1	< .001
original	high	-	other	low	2.8561	0.184	15.559	89.7	< .001
original	low	-	other	low	0.4592	0.155	2.954	50.1	0.005
other	high	-	filler	low	2.0847	0.217	9.619	87.6	< .001
other	high	-	original	low	1.6722	0.183	9.117	90.0	< .001
other	high	-	other	low	2.1315	0.185	11.522	49.7	< .001

Descriptives - Diagnostic dimension

	diagnostic_dim	Mean	SD
Value	filler	2.64	2.02
	original	4.17	2.35
	other	3.55	2.23

Descriptives - Features' representative status

	rep_status	Mean	SD
Value	high	4.22	2.28
	low	2.63	2.00

Descriptives - Diagnostic dimension vs. Features' representative status

	diagnostic_dim	rep_status	Mean	SD
Value	filler	high	2.77	2.05
		low	2.49	1.98
	original	high	5.32	1.90
		low	2.93	2.14
	other	high	4.57	2.09
		low	2.46	1.83

Descriptives - Diagnostic dimension vs. Original dimension

	diagnostic_dim	original_dim	Mean	SD
Value	filler	Excitante	2.65	1.98
		Genuína	2.79	2.07
		Sociável	2.50	2.01
	original	Excitante	4.36	2.33
		Genuína	3.66	2.25
		Sociável	4.38	2.38
	other	Excitante	3.64	2.20
		Genuína	3.55	2.29
		Sociável	3.46	2.22

Descriptives - Diagnostic dimension vs. Features' representative status vs. Original dimension

	diagnostic_dim	rep_status	original_dim	Mean	SD
Value	filler	high	Excitante	2.52	1.89
			Genuína	3.05	2.15
			Sociável	2.77	2.08
		low	Excitante	2.77	2.07
			Genuína	2.46	1.93
			Sociável	2.24	1.90
	original	high	Excitante	5.79	1.56
			Genuína	4.43	2.06
			Sociável	5.65	1.80
		low	Excitante	2.92	2.09
			Genuína	2.68	2.10
			Sociável	3.11	2.21
	other	high	Excitante	4.56	2.08
			Genuína	4.54	2.14
			Sociável	4.60	2.06
		low	Excitante	2.73	1.91
			Genuína	2.28	1.80
			Sociável	2.33	1.74

1.2. Forced choice

Model Info

Info	
Estimate	Linear mixed model fit by REML
Call	choice ~ 1 + rep_status + choice dimension + original_dim + rep_status:choice dimension + rep_status:original_dim + choice dimension:original_dim + rep_status:choice dimension:original_dim+(1 | sentence)+(1 | participante)
AIC	9837.127
BIC	10173.060
LogLikel.	-4962.911
R-squared Marginal	0.123
R-squared Conditional	0.123
Converged	yes
Optimizer	bobyqa

Note. (Almost) singular fit. Maybe random coefficients variances are too small or correlations among them too large.
Note. boundary (singular) fit: see ?isSingular

Model Results

Fixed Effect Omnibus tests

	F	Num df	Den df	p
rep_status	4.78e -6	1	9456	0.998
choice dimension	151.7	3	9456	< .001
original_dim	7.74e-26	2	9456	1.000
rep_status ✻ choice dimension	197.3	3	9456	< .001
rep_status ✻ original_dim	5.03e-28	2	9456	1.000
choice dimension ✻ original_dim	34.3	6	9456	< .001
rep_status ✻ choice dimension ✻ original_dim	13.4	6	9456	< .001

Note. Satterthwaite method for degrees of freedom

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	95% Confidence Interval Lower	95% Confidence Interval Upper	df	t	p
(Intercept)	(Intercept)	0.2500	0.00417	0.24183	0.2582	9456	59.971	< .001
rep_status1	low - high	-2.63e−19	0.00834	-0.01634	0.0163	9456	-3.16e−17	1.000
choice dimension1	none - filler	0.0477	0.01179	0.02457	0.0708	9456	4.044	< .001
choice dimension2	original - filler	0.2245	0.01179	0.20136	0.2476	9456	19.038	< .001
choice dimension3	other - filler	0.0207	0.01179	-0.00243	0.0438	9456	1.753	0.080
original_dim1	Excitante - Genuína	-1.44e−16	0.01021	-0.02001	0.0200	9456	-1.41e−14	1.000
original_dim2	Sociável - Genuína	-3.55e−15	0.01021	-0.02001	0.0200	9456	-3.48e−13	1.000
rep_status1 ✻ choice dimension1	low - high ✻ none - filler	0.1460	0.02358	0.09977	0.1922	9456	6.191	< .001
rep_status1 ✻ choice dimension2	low - high ✻ original - filler	-0.3679	0.02358	-0.41415	-0.3217	9456	-15.602	< .001
rep_status1 ✻ choice dimension3	low - high ✻ other - filler	-0.2540	0.02358	-0.30023	-0.2078	9456	-10.771	< .001
rep_status1 ✻ original_dim1	low - high ✻ Excitante - Genuína	-4.29e−16	0.02042	-0.04003	0.0400	9456	-2.10e−14	1.000
rep_status1 ✻ original_dim2	low - high ✻ Sociável - Genuína	-6.35e−16	0.02042	-0.04003	0.0400	9456	-3.11e−14	1.000
choice dimension1 ✻ original_dim1	none - filler ✻ Excitante - Genuína	-0.0456	0.02888	-0.10218	0.0110	9456	-1.578	0.115
choice dimension2 ✻ original_dim1	original - filler ✻ Excitante - Genuína	0.2278	0.02888	0.17124	0.2845	9456	7.889	< .001
choice dimension3 ✻ original_dim1	other - filler ✻ Excitante - Genuína	0.0557	0.02888	-9.11e−4	0.1123	9456	1.928	0.054
choice dimension1 ✻ original_dim2	none - filler ✻ Sociável - Genuína	0.0139	0.02888	-0.04268	0.0705	9456	0.482	0.630
choice dimension2 ✻ original_dim2	original - filler ✻ Sociável - Genuína	0.3051	0.02888	0.24846	0.3617	9456	10.563	< .001
choice dimension3 ✻ original_dim2	other - filler ✻ Sociável - Genuína	-0.0203	0.02888	-0.07686	0.0364	9456	-0.701	0.483
rep_status1 ✻ choice dimension1 ✻ original_dim1	low - high ✻ none - filler ✻ Excitante - Genuína	-0.0658	0.05776	-0.17904	0.0474	9456	-1.140	0.255
rep_status1 ✻ choice dimension2 ✻ original_dim1	low - high ✻ original - filler ✻ Excitante - Genuína	-0.4051	0.05776	-0.51828	-0.2918	9456	-7.012	< .001
rep_status1 ✻ choice dimension3 ✻ original_dim1	low - high ✻ other - filler ✻ Excitante - Genuína	0.0152	0.05776	-0.09802	0.1284	9456	0.263	0.793
rep_status1 ✻ choice dimension1 ✻ original_dim2	low - high ✻ none - filler ✻ Sociável - Genuína	0.1241	0.05776	0.01084	0.2373	9456	2.148	0.032
rep_status1 ✻ choice dimension2 ✻ original_dim2	low - high ✻ original - filler ✻ Sociável - Genuína	-0.1443	0.05776	-0.25752	-0.0311	9456	-2.498	0.012

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	95% Confidence Interval Lower	95% Confidence Interval Upper	df	t	p
rep_status1 ✻ choice dimension3 ✻ original_dim2	low - high ✻ other - filler ✻ Sociável - Genuína	0.1114	0.05776	-0.00182	0.2246	9456	1.928	0.054

Random Components

Groups	Name	SD	Variance	ICC
participante	(Intercept)	0.000	0.000	0.00
sentence	(Intercept)	0.000	0.000	0.00
Residual		0.406	0.165	

Note. Number of Obs: 9480 , groups: participante 76, sentence 60

Descriptives

Descriptives - Choice dimension

	choice dimension	Mean	SD
choice	filler	0.177	0.382
	none	0.224	0.417
	original	0.401	0.490
	other	0.197	0.398

Descriptives - Choice dimension vs. Features' representative status

	choice dimension	rep_status	Mean	SD
choice	filler	high	0.1173	0.322
		low	0.2363	0.425
	none	high	0.0920	0.289
		low	0.3570	0.479
	original	high	0.5257	0.500
		low	0.2768	0.448
	other	high	0.2650	0.442
		low	0.1300	0.336

Descriptives - Choice dimension vs. Original dimention

	choice dimension	original_dim	Mean	SD
choice	filler	Genuína	0.222	0.416
		Excitante	0.162	0.369
		Sociável	0.147	0.354
	none	Genuína	0.280	0.449
		Excitante	0.175	0.380
		Sociável	0.219	0.414
	original	Genuína	0.268	0.443
		Excitante	0.437	0.496
		Sociável	0.499	0.500
	other	Genuína	0.230	0.421
		Excitante	0.227	0.419
		Sociável	0.135	0.342

Post Hoc Comparisons - choice dimension ✻ original_dim

Comparison									
choice dimension	original_dim		choice dimension	original_dim	Difference	SE	t	df	p
filler	Excitante	-	filler	Sociável	0.01519	0.0204	0.744	9456	0.457
filler	Excitante	-	none	Excitante	-0.01266	0.0204	-0.620	9456	0.535
filler	Excitante	-	none	Sociável	-0.05696	0.0204	-2.789	9456	0.005
filler	Excitante	-	original	Excitante	-0.27468	0.0204	-13.450	9456	< .001
filler	Excitante	-	original	Sociável	-0.33671	0.0204	-16.487	9456	< .001
filler	Excitante	-	other	Excitante	-0.06456	0.0204	-3.161	9456	0.002
filler	Excitante	-	other	Sociável	0.02658	0.0204	1.302	9456	0.193
filler	Genuína	-	filler	Excitante	0.05949	0.0204	2.913	9456	0.004
filler	Genuína	-	filler	Sociável	0.07468	0.0204	3.657	9456	< .001
filler	Genuína	-	none	Excitante	0.04684	0.0204	2.293	9456	0.022
filler	Genuína	-	none	Genuína	-0.05823	0.0204	-2.851	9456	0.004
filler	Genuína	-	none	Sociável	0.00253	0.0204	0.124	9456	0.901
filler	Genuína	-	original	Excitante	-0.21519	0.0204	-10.537	9456	< .001
filler	Genuína	-	original	Genuína	-0.04684	0.0204	-2.293	9456	0.022
filler	Genuína	-	original	Sociável	-0.27722	0.0204	-13.574	9456	< .001
filler	Genuína	-	other	Excitante	-0.00506	0.0204	-0.248	9456	0.804
filler	Genuína	-	other	Genuína	-0.00886	0.0204	-0.434	9456	0.664
filler	Genuína	-	other	Sociável	0.08608	0.0204	4.215	9456	< .001
filler	Sociável	-	none	Sociável	-0.07215	0.0204	-3.533	9456	< .001
filler	Sociável	-	original	Sociável	-0.35190	0.0204	-17.231	9456	< .001
filler	Sociável	-	other	Sociável	0.01139	0.0204	0.558	9456	0.577
none	Excitante	-	filler	Sociável	0.02785	0.0204	1.364	9456	0.173
none	Excitante	-	none	Sociável	-0.04430	0.0204	-2.169	9456	0.030
none	Excitante	-	original	Excitante	-0.26203	0.0204	-12.830	9456	< .001
none	Excitante	-	original	Sociável	-0.32405	0.0204	-15.867	9456	< .001
none	Excitante	-	other	Excitante	-0.05190	0.0204	-2.541	9456	0.011
none	Excitante	-	other	Sociável	0.03924	0.0204	1.921	9456	0.055
none	Genuína	-	filler	Excitante	0.11772	0.0204	5.764	9456	< .001
none	Genuína	-	filler	Sociável	0.13291	0.0204	6.508	9456	< .001
none	Genuína	-	none	Excitante	0.10506	0.0204	5.145	9456	< .001
none	Genuína	-	none	Sociável	0.06076	0.0204	2.975	9456	0.003
none	Genuína	-	original	Excitante	-0.15696	0.0204	-7.686	9456	< .001
none	Genuína	-	original	Genuína	0.01139	0.0204	0.558	9456	0.577
none	Genuína	-	original	Sociável	-0.21899	0.0204	-10.723	9456	< .001
none	Genuína	-	other	Excitante	0.05316	0.0204	2.603	9456	0.009
none	Genuína	-	other	Genuína	0.04937	0.0204	2.417	9456	0.016
none	Genuína	-	other	Sociável	0.14430	0.0204	7.066	9456	< .001
none	Sociável	-	original	Sociável	-0.27975	0.0204	-13.698	9456	< .001
none	Sociável	-	other	Sociável	0.08354	0.0204	4.091	9456	< .001
original	Excitante	-	filler	Sociável	0.28987	0.0204	14.194	9456	< .001
original	Excitante	-	none	Sociável	0.21772	0.0204	10.661	9456	< .001
original	Excitante	-	original	Sociável	-0.06203	0.0204	-3.037	9456	0.002
original	Excitante	-	other	Excitante	0.21013	0.0204	10.289	9456	< .001
original	Excitante	-	other	Sociável	0.30127	0.0204	14.752	9456	< .001
original	Genuína	-	filler	Excitante	0.10633	0.0204	5.207	9456	< .001
original	Genuína	-	filler	Sociável	0.12152	0.0204	5.950	9456	< .001

Post Hoc Comparisons - choice dimension ✻ original_dim

Comparison									
choice dimension	original_dim		choice dimension	original_dim	Difference	SE	t	df	p
original	Genuína	-	none	Excitante	0.09367	0.0204	4.587	9456	< .001
original	Genuína	-	none	Sociável	0.04937	0.0204	2.417	9456	0.016
original	Genuína	-	original	Excitante	-0.16835	0.0204	-8.244	9456	< .001
original	Genuína	-	original	Sociável	-0.23038	0.0204	-11.281	9456	< .001
original	Genuína	-	other	Excitante	0.04177	0.0204	2.045	9456	0.041
original	Genuína	-	other	Genuína	0.03797	0.0204	1.859	9456	0.063
original	Genuína	-	other	Sociável	0.13291	0.0204	6.508	9456	< .001
original	Sociável	-	other	Sociável	0.36329	0.0204	17.789	9456	< .001
other	Excitante	-	filler	Sociável	0.07975	0.0204	3.905	9456	< .001
other	Excitante	-	none	Sociável	0.00759	0.0204	0.372	9456	0.710
other	Excitante	-	original	Sociável	-0.27215	0.0204	-13.326	9456	< .001
other	Excitante	-	other	Sociável	0.09114	0.0204	4.463	9456	< .001
other	Genuína	-	filler	Excitante	0.06835	0.0204	3.347	9456	< .001
other	Genuína	-	filler	Sociável	0.08354	0.0204	4.091	9456	< .001
other	Genuína	-	none	Excitante	0.05570	0.0204	2.727	9456	0.006
other	Genuína	-	none	Sociável	0.01139	0.0204	0.558	9456	0.577
other	Genuína	-	original	Excitante	-0.20633	0.0204	-10.103	9456	< .001
other	Genuína	-	original	Sociável	-0.26835	0.0204	-13.140	9456	< .001
other	Genuína	-	other	Excitante	0.00380	0.0204	0.186	9456	0.852
other	Genuína	-	other	Sociável	0.09494	0.0204	4.649	9456	< .001

Post Hoc Comparisons - rep_status ✻ choice dimension

Comparison									
rep_status	choice dimension		rep_status	choice dimension	Difference	SE	t	df	p
high	filler	-	high	none	0.0253	0.0167	1.518	9456	0.129
high	filler	-	high	original	-0.4084	0.0167	-24.494	9456	< .001
high	filler	-	high	other	-0.1477	0.0167	-8.856	9456	< .001
high	filler	-	low	filler	-0.1190	0.0167	-7.136	9456	< .001
high	filler	-	low	none	-0.2397	0.0167	-14.373	9456	< .001
high	filler	-	low	original	-0.1595	0.0167	-9.565	9456	< .001
high	filler	-	low	other	-0.0127	0.0167	-0.759	9456	0.448
high	none	-	high	original	-0.4338	0.0167	-26.013	9456	< .001
high	none	-	high	other	-0.1730	0.0167	-10.375	9456	< .001
high	none	-	low	none	-0.2650	0.0167	-15.891	9456	< .001
high	none	-	low	original	-0.1848	0.0167	-11.083	9456	< .001
high	none	-	low	other	-0.0380	0.0167	-2.277	9456	0.023
high	original	-	high	other	0.2608	0.0167	15.638	9456	< .001
high	original	-	low	original	0.2489	0.0167	14.929	9456	< .001
high	original	-	low	other	0.3958	0.0167	23.735	9456	< .001
high	other	-	low	other	0.1350	0.0167	8.097	9456	< .001
low	filler	-	high	none	0.1443	0.0167	8.654	9456	< .001
low	filler	-	high	original	-0.2895	0.0167	-17.359	9456	< .001
low	filler	-	high	other	-0.0287	0.0167	-1.721	9456	0.085
low	filler	-	low	none	-0.1207	0.0167	-7.237	9456	< .001
low	filler	-	low	original	-0.0405	0.0167	-2.429	9456	0.015
low	filler	-	low	other	0.1063	0.0167	6.377	9456	< .001
low	none	-	high	original	-0.1688	0.0167	-10.122	9456	< .001
low	none	-	high	other	0.0920	0.0167	5.516	9456	< .001
low	none	-	low	original	0.0802	0.0167	4.808	9456	< .001
low	none	-	low	other	0.2270	0.0167	13.614	9456	< .001
low	original	-	high	other	0.0118	0.0167	0.709	9456	0.479
low	original	-	low	other	0.1468	0.0167	8.806	9456	< .001

2. Study 3.2 Matching features to destinations

Mixed Model

Main model

Model Info

Info	
Estimate	Linear mixed model fit by REML
Call	rating ~ 1 + dimension + city_personality + feature status + dimension:city_personality + dimension:feature status + city_personality:feature status + dimension:city_personality:feature status+(1 | ID)+(1 | features)
AIC	40492.9422
BIC	40632.9750
LogLikel.	-20246.8885
R-squared Marginal	0.0752
R-squared Conditional	0.2439
Converged	yes
Optimizer	bobyqa

Model Results

Fixed Effect Omnibus tests

	F	Num df	Den df	p
dimension	4.99	2	54.0	0.010
city_personality	1.82	1	6471.6	0.178
feature status	23.47	1	54.0	< .001
dimension ✻ city_personality	1.85	2	10368.4	0.157
dimension ✻ feature status	2.75	2	54.0	0.073
city_personality ✻ feature status	389.90	1	10476.3	< .001
dimension ✻ city_personality ✻ feature status	6.29	2	10476.3	0.002

Note. Satterthwaite method for degrees of freedom

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	95% Confidence Interval Lower	95% Confidence Interval Upper	df	t	p
(Intercept)	(Intercept)	3.6026	0.0744	3.4567	3.7485	111.8	48.393	< .001
dimension1	excitement - convivial	0.2283	0.1485	-0.0628	0.5194	54.0	1.537	0.130
dimension2	genuine - convivial	0.4692	0.1485	0.1781	0.7603	54.1	3.159	0.003
city_personality1	low - high	-0.0571	0.0423	-0.1401	0.0259	6471.6	-1.349	0.177
feature status1	high - low	0.5874	0.1213	0.3497	0.8251	54.0	4.844	< .001
dimension1 ✻ city_personality1	excitement - convivial ✻ low - high	0.0646	0.0805	-0.0931	0.2224	10597.3	0.803	0.422
dimension2 ✻ city_personality1	genuine - convivial ✻ low - high	-0.0923	0.0885	-0.2658	0.0812	9855.3	-1.042	0.297
dimension1 ✻ feature status1	excitement - convivial ✻ high - low	0.0966	0.2970	-0.4856	0.6788	54.0	0.325	0.746
dimension2 ✻ feature status1	genuine - convivial ✻ high - low	0.6453	0.2970	0.0632	1.2275	54.0	2.173	0.034
city_personality1 ✻ feature status1	low - high ✻ high - low	-1.1900	0.0603	-1.3082	-1.0719	10476.3	-19.746	< .001
dimension1 ✻ city_personality1 ✻ feature status1	excitement - convivial ✻ low - high ✻ high - low	0.3729	0.1476	0.0836	0.6623	10476.3	2.526	0.012
dimension2 ✻ city_personality1 ✻ feature status1	genuine - convivial ✻ low - high ✻ high - low	-0.1319	0.1476	-0.4213	0.1575	10476.3	-0.893	0.372

Random Components

Groups	Name	SD	Variance	ICC
ID	(Intercept)	0.578	0.334	0.1211
features	(Intercept)	0.455	0.207	0.0787
Residual		1.557	2.424	

Note. Number of Obs: 10720 , groups: ID 179, features 60

Post Hoc Comparisons - city_personality ✻ feature status

Comparison										
city_personality	feature status		city_personality	feature status	Difference	SE	t	df	p	$p_{bonferroni}$
high	high	-	low	high	0.65212	0.0520	12.5503	8593.1	< .001	< .001
high	low	-	high	high	-1.18240	0.1246	-9.4918	60.2	< .001	< .001
high	low	-	low	high	-0.53027	0.1284	-4.1286	68.0	< .001	< .001
high	low	-	low	low	-0.53791	0.0520	-10.3522	8593.1	< .001	< .001
low	low	-	high	high	-0.64449	0.1284	-5.0179	68.0	< .001	< .001
low	low	-	low	high	0.00763	0.1253	0.0609	61.7	0.952	1.000

Descriptives - Features' representative status

	feature status	Mean	SD
rating	low	3.29	1.73
	high	3.91	1.79

Descriptives - Original dimension

	dimension	Mean	SD
rating	convivial	3.37	1.74
	excitement	3.60	1.78
	genuine	3.84	1.81

Descriptives - City personality vs. Features' representative status

	city_personality	feature status	Mean	SD
rating	high	low	3.06	1.70
		high	4.23	1.76
	low	low	3.56	1.72
		high	3.56	1.75

Appendix B. Supporting information for Empirical Chapter II

Experiment 1

1. Levels of Elaboration

1.1. Number of thoughts by elaboration condition (Table 2)

GLM

Model Info

Info	
Estimate	Linear model fit by OLS
Call	#thoughts ~ 1 + elaboration
R-squared	0.0245
Adj. R-squared	0.0199

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	13.3	1	5.33	0.022	0.025
elaboration	13.3	1	5.33	0.022	0.025
Residuals	530.4	212			
Total	543.8	213			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	2.802	0.109	212	25.72	< .001
elaboration1	low - high	0.503	0.218	212	2.31	0.022

Descriptives

	elaboration	Mean	SD
#thoughts	high	2.55	1.45
	low	3.05	1.74
word/thought	high	20.58	14.81
	low	16.29	14.40

1.2. Average of words per thought by elaboration condition (Table 2)

Model Info

Info	
Estimate	Linear model fit by OLS
Call	word/thought ~ 1 + elaboration
R-squared	0.0210
Adj. R-squared	0.0164

Model Results

ANOVA Omnibus tests

	SS	df	F	p	$\eta^2 p$
Model	973	1	4.54	0.034	0.021
elaboration	973	1	4.54	0.034	0.021
Residuals	45399	212			
Total	46372	213			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	18.43	1.01	212	18.29	< .001
elaboration1	low - high	-4.30	2.02	212	-2.13	0.034

Descriptives

	elaboration	Mean	SD
#thoughts	high	2.55	1.45
	low	3.05	1.74
word/thought	high	20.58	14.81
	low	16.29	14.40

1.3. Attitudes vs. thought favorabiltity

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + thought_favorability + elaboration + elaboration:thought_favorability
R-squared	0.190
Adj. R-squared	0.178

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	32.6529	3	16.3905	< .001	0.190
thought_favorability	32.3818	1	48.7632	< .001	0.188
elaboration	0.0346	1	0.0520	0.820	0.000
thought_favorability ✻ elaboration	1.7287	1	2.6032	0.108	0.012
Residuals	139.4530	210			
Total	172.1059	213			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	4.3964	0.0562	210	78.265	< .001
thought_favorability	thought_favorability	0.2061	0.0295	210	6.983	< .001
elaboration1	low - high	-0.0256	0.1123	210	-0.228	0.820
thought_favorability ✻ elaboration1	thought_favorability ✻ low - high	-0.0953	0.0590	210	-1.613	0.108

Attitudes vs. thought favorability correlation: full sample

Correlation Matrix

		attitude	thought_favorability
attitude	Pearson's r	—	
	df	—	
	p-value	—	
thought_favorability	Pearson's r	0.424 ***	—
	df	212	—
	p-value	< .001	—

Note. * p < .05, ** p < .01, *** p < .001

Attitudes vs. thought favorability correlation: high elaboration condition

Correlation Matrix

		attitude	thought_favorability
attitude	Pearson's r	—	
	df	—	
	p-value	—	
thought_favorability	Pearson's r	0.448 ***	—
	df	118	—
	p-value	< .001	—

Note. * p < .05, ** p < .01, *** p < .001

Attitudes vs. thought favorability correlation: low elaboration condition

Correlation Matrix

		attitude	thought_favorability
attitude	Pearson's r	—	
	df	—	
	p-value	—	
thought_favorability	Pearson's r	0.413 ***	—
	df	92	—
	p-value	< .001	—

Note. * p < .05, ** p < .01, *** p < .001

2. Processing goal manipulation

2.1. Number of recalls

Model Info

Info	
Estimate	Linear model fit by OLS
Call	#recalls ~ 1 + processing goal + elaboration + processing goal:elaboration
R-squared	0.0967
Adj. R-squared	0.0696

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	69.5	3	3.57	0.017	0.097
processing goal	30.3	1	4.67	0.033	0.045
elaboration	16.3	1	2.52	0.116	0.025
processing goal ✻ elaboration	17.2	1	2.65	0.107	0.026
Residuals	649.5	100			
Total	719.0	103			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	5.276	0.261	100	20.19	< .001
processing goal 1	noexp - mem	1.129	0.523	100	2.16	0.033
elaboration1	low - high	-0.829	0.523	100	-1.59	0.116
processing goal 1 ✻ elaboration1	noexp - mem ✻ low - high	-1.702	1.045	100	-1.63	0.107

Descriptives

	expectation	Mean	SD
#recalls	mem	4.71	2.65
	noexp	5.91	2.50

3. Expectations: *exciting* rating by expectation

Model Info

Info	
Estimate	Linear model fit by OLS
Call	exciting ~ 1 + expectation + elaboration + expectation:elaboration
R-squared	0.0791
Adj. R-squared	0.0531

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	18.981	3	3.036	0.032	0.079
expectation	18.542	1	8.897	0.004	0.077
elaboration	0.371	1	0.178	0.674	0.002
expectation ✻ elaboration	0.371	1	0.178	0.674	0.002
Residuals	220.919	106			
Total	239.900	109			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	3.912	0.138	106	28.338	< .001
expectation1	unexciting - exciting	-0.823	0.276	106	-2.983	0.004
elaboration1	low - high	-0.117	0.276	106	-0.422	0.674
expectation1 ✻ elaboration1	unexciting - exciting ✻ low - high	0.233	0.552	106	0.422	0.674

Descriptives

	expectation	Mean	SD
exciting	exciting	4.31	1.44
	unexciting	3.50	1.43

4. Impact on attitudes

4.1. Attitudes by processing goal

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + expectation + processing goal + processing goal:elaboration
R-squared	0.02308
Adj. R-squared	-0.00623

Model Results

ANOVA Omnibus tests

	SS	df	F	p	$\eta^2 p$
Model	1.897	3	0.788	0.504	0.023
processing goal	1.078	1	1.343	0.249	0.013
elaboration	0.192	1	0.240	0.626	0.002
processing goal ✻ elaboration	0.900	1	1.121	0.292	0.011
Residuals	80.273	100			
Total	82.170	103			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	4.4709	0.0919	100	48.673	< .001
processing goal1	noexp - mem	-0.2129	0.1837	100	-1.159	0.249
elaboration1	low - high	-0.0899	0.1837	100	-0.489	0.626
processing goal11 ✻ elaboration1	noexp - mem ✻ low - high	-0.3891	0.3674	100	-1.059	0.292

Descriptives

	process. goal	Mean	SD
attitude	memory	4.56	0.890
	no exp.	4.38	0.896

4.2. Attitudes by expectation

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + expectation + elaboration + expectation:elaboration
R-squared	0.01922
Adj. R-squared	-0.00854

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	1.70606	3	0.6923	0.559	0.019
expectation	1.68859	1	2.0557	0.155	0.019
elaboration	1.34e-6	1	1.63e-6	0.999	0.000
expectation ✻ elaboration	0.00903	1	0.0110	0.917	0.000
Residuals	87.07070	106			
Total	88.77677	109			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	4.3332	0.0867	106	50.00333	< .001
expectation1	unexciting - exciting	-0.2485	0.1733	106	-1.43377	0.155
elaboration1	low - high	-2.21e−4	0.1733	106	-0.00128	0.999
expectation1 ✻ elaboration1	unexciting - exciting ✻ low - high	0.0363	0.3466	106	0.10484	0.917

4.3. Attitudes vs. recall favorability by processing goal

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + processing goal + recall_favorability + recall_favorability:processing goal
R-squared	0.03753
Adj. R-squared	0.00865

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	3.083	3	1.300	0.279	0.038
processing goal	0.717	1	0.907	0.343	0.009
recall_favorability	1.743	1	2.204	0.141	0.022
procesing goal ✻ recall_favorability	0.872	1	1.102	0.296	0.011
Residuals	79.086	100			
Total	82.170	103			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	4.4722	0.0879	100	50.882	< .001
processing goal1	noexp - mem	-0.1674	0.1758	100	-0.952	0.343
recall_favorability	recall_favorability	0.0953	0.0642	100	1.485	0.141
processing goal1 ✻ recall_favorability	noexp - mem ✻ recall_favorability	0.1348	0.1284	100	1.050	0.296

5. Memory organization: ARC scores

5.2. ARC scores by processing goal

Model Info

Info	
Estimate	Linear model fit by OLS
Call	clu_ARC ~ 1 + proc. goal + elaboration + proc. goal:elaboration
R-squared	0.0981
Adj. R-squared	0.0638

Model Results

ANOVA Omnibus tests

	SS	df	F	p	$\eta^2 p$
Model	3.050	3	2.86274	0.042	0.098
proc. goal	2.249	1	6.33138	0.014	0.074
elaboration	0.883	1	2.48737	0.119	0.031
proc. goal ✻ elaboration	6.99e-4	1	0.00197	0.965	0.000
Residuals	28.059	79			
Total	31.109	82			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	0.2675	0.0663	79	4.0319	< .001
proc. goal1	no exp - mem	-0.3339	0.1327	79	-2.5162	0.014
elaboration1	low - high	0.2093	0.1327	79	1.5771	0.119
proc. goal1 ✻ elaboration1	no exp - mem ✻ low - high	0.0118	0.2654	79	0.0444	0.965

Descriptives

	expectation	Mean	SD
clu_ARC	mem	0.4132	0.648
	noexp	0.0898	0.538

5.3. ARC scores by expectation

Model Info

Info	
Estimate	Linear model fit by OLS
Call	clu_ARC ~ 1 + expectation + elaboration + expectation:elaboration
R-squared	0.02907
Adj. R-squared	-0.00663

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	1.219	5	0.814	0.541	0.029
expectation	0.475	2	0.793	0.455	0.012
elaboration	0.399	1	1.332	0.250	0.010
expectation ✻ elaboration	0.301	2	0.502	0.606	0.007
Residuals	40.734	136			
Total	41.954	141			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	0.1508	0.0464	136	3.250	0.001
expectation1	unexciting - exciting	-0.1113	0.1087	136	-1.023	0.308
expectation2	noexp - exciting	-0.1310	0.1162	136	-1.128	0.261
elaboration1	low - high	0.1071	0.0928	136	1.154	0.250
expectation1 ✻ elaboration1	unexciting - exciting ✻ low - high	-0.1339	0.2175	136	-0.616	0.539
expectation2 ✻ elaboration1	noexp - exciting ✻ low - high	0.0951	0.2323	136	0.409	0.683

Descriptives

	expectation	Mean	SD
clu_ARC	exciting	0.237	0.602
	unexciting	0.121	0.490

6. Organization: Incongruence effect

6.1. Incongruence effect

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Features recalled	14.529	1	14.529	16.399	< .001	0.134
Features recalled ✻ expectation	0.493	1	0.493	0.556	0.457	0.005
Features recalled ✻ elaboration	0.144	1	0.144	0.162	0.688	0.002
Features recalled ✻ expectation ✻ elaboration	0.207	1	0.207	0.234	0.630	0.002
Residual	93.916	106	0.886			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
expectation	8.640	1	8.640	4.092	0.046	0.037
elaboration	0.815	1	0.815	0.386	0.536	0.004
expectation ✻ elaboration	2.098	1	2.098	0.994	0.321	0.009
Residual	223.830	106	2.112			

Note. Type 3 Sums of Squares

Post Hoc Comparisons - Features recalled ✻ expectation

Comparison										
Features recalled	expectation		Features recalled	expectation	Mean Difference	SE	df	t	p	p_{tukey}
Exciting	exciting	-	Exciting	unexciting	-0.492	0.225	106	-2.188	0.031	0.133
		-	Unexciting	exciting	-0.610	0.182	106	-3.360	0.001	0.006
		-	Unexciting	unexciting	-0.913	0.234	106	-3.902	< .001	< .001
	unexciting	-	Unexciting	exciting	-0.118	0.234	106	-0.504	0.616	0.958
		-	Unexciting	unexciting	-0.421	0.178	106	-2.358	0.020	0.092
Unexciting	exciting	-	Unexciting	unexciting	-0.303	0.243	106	-1.246	0.216	0.599

Descriptives

	expectation	Mean	SD
#positive	exciting	2.07	1.061
	unexciting	2.57	1.263
#negative	exciting	2.69	0.987
	unexciting	3.00	1.489

7. Organization: Conditional probabilities of paired recalls

7.1. Conditional probabilities by processing goal

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Pairs	2.232	3	0.7441	7.350	< .001	0.093
Pairs ✻ proc. goal	0.868	3	0.2893	2.857	0.038	0.038
Pairs ✻ elaboration	0.199	3	0.0664	0.655	0.580	0.009
Pairs ✻ proc. goal ✻ elaboration	0.259	3	0.0862	0.851	0.467	0.012
Residual	21.868	216	0.1012			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
processing goal	0.2533	1	0.2533	5.747	0.019	0.074
elaboration	0.0405	1	0.0405	0.918	0.341	0.013
processing goal ✻ elaboration	0.0112	1	0.0112	0.254	0.616	0.004
Residual	3.1732	72	0.0441			

Note. Type 3 Sums of Squares

Descriptives (both processing goals)

	Mean	SD
P(P|P)	0.171	0.246
P(N|P)	0.364	0.355
P(N|N)	0.258	0.255
P(P|N)	0.350	0.338

Descriptives (by processing goal

	expectation	Mean	SD
P(P|P)	mem	0.192	0.264
	noexp	0.152	0.228
P(N|P)	mem	0.233	0.331
	noexp	0.491	0.334
P(N|N)	mem	0.222	0.256
	noexp	0.298	0.251
P(P|N)	mem	0.290	0.351
	noexp	0.419	0.314

Post Hoc Comparisons - Pairs

Comparison							
Pairs		Pairs	Mean Difference	SE	df	t	p_{tukey}
EE	-	EU	-0.2008	0.0576	72.0	-3.488	0.005
	-	UU	-0.0593	0.0408	72.0	-1.451	0.472
	-	UE	-0.2126	0.0487	72.0	-4.364	< .001
EU	-	UU	0.1415	0.0535	72.0	2.645	0.048
	-	UE	-0.0117	0.0671	72.0	-0.175	0.998
UU	-	UE	-0.1533	0.0577	72.0	-2.658	0.047

Post Hoc Comparisons - Pairs ✻ processing goal

Comparison									
Pairs	proc. goal		Pairs	proc.goal	Mean Difference	SE	df	t	p_{tukey}
EE	mem	-	EE	noexp	0.08349	0.0614	72.0	1.360	0.872
		-	EU	mem	-0.04687	0.0889	72.0	-0.527	0.999
		-	EU	noexp	-0.27128	0.0709	72.0	-3.826	0.006
		-	UU	mem	0.03056	0.0631	72.0	0.485	1.000
		-	UU	noexp	-0.06562	0.0609	72.0	-1.077	0.960
		-	UE	mem	-0.16667	0.0752	72.0	-2.217	0.354
		-	UE	noexp	-0.17498	0.0695	72.0	-2.518	0.205
	noexp	-	EU	mem	-0.13036	0.0750	72.0	-1.738	0.663
		-	EU	noexp	-0.35477	0.0732	72.0	-4.846	< .001
		-	UU	mem	-0.05293	0.0607	72.0	-0.872	0.988
		-	UU	noexp	-0.14910	0.0519	72.0	-2.871	0.094
		-	UE	mem	-0.25015	0.0730	72.0	-3.426	0.022
		-	UE	noexp	-0.25847	0.0619	72.0	-4.174	0.002
EU	mem	-	EU	noexp	-0.22441	0.0830	72.0	-2.704	0.138
		-	UU	mem	0.07743	0.0826	72.0	0.937	0.981
		-	UU	noexp	-0.01874	0.0746	72.0	-0.251	1.000
		-	UE	mem	-0.11979	0.1037	72.0	-1.156	0.942
		-	UE	noexp	-0.12811	0.0818	72.0	-1.566	0.768
	noexp	-	UU	mem	0.30184	0.0703	72.0	4.293	0.001
		-	UU	noexp	0.20566	0.0681	72.0	3.022	0.065
		-	UE	mem	0.10461	0.0812	72.0	1.288	0.900
		-	UE	noexp	0.09630	0.0854	72.0	1.128	0.948
UU	mem	-	UU	noexp	-0.09617	0.0602	72.0	-1.597	0.750
		-	UE	mem	-0.19722	0.0890	72.0	-2.215	0.355
		-	UE	noexp	-0.20554	0.0689	72.0	-2.984	0.071
	noexp	-	UE	mem	-0.10105	0.0726	72.0	-1.391	0.858
		-	UE	noexp	-0.10936	0.0733	72.0	-1.491	0.809
UE	mem	-	UE	noexp	-0.00831	0.0800	72.0	-0.104	1.000

7.2. Conditional probabilities by expectation

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Pairs	3.9978	3	1.33261	13.3041	< .001	0.120
Pairs ✻ expectation	0.0886	3	0.02954	0.2950	0.829	0.003
Pairs ✻ elaboration	0.0736	3	0.02455	0.2451	0.865	0.002
Pairs ✻ expectation ✻ elaboration	0.0282	3	0.00939	0.0938	0.963	0.001
Residual	29.4485	294	0.10017			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
expectation	0.02987	1	0.02987	0.7719	0.382	0.008
elaboration	0.00323	1	0.00323	0.0836	0.773	0.001
expectation ✻ elaboration	0.03771	1	0.03771	0.9745	0.326	0.010
Residual	3.79184	98	0.03869			

Note. Type 3 Sums of Squares

Descriptives

	Mean	SD
P(E|E)	0.216	0.237
P(U|E)	0.407	0.352
P(U|U)	0.279	0.243
P(E|U)	0.444	0.317

Descriptives

	expectation	Mean	SD
P(E|E)	exciting	0.200	0.249
	unexciting	0.231	0.225
P(U|E)	exciting	0.401	0.382
	unexciting	0.413	0.323
P(U|U)	exciting	0.302	0.240
	unexciting	0.255	0.246
P(E|U)	exciting	0.434	0.320
	unexciting	0.455	0.315

7.3. Conditional probabilities by processing goal (recall favorability as covariate)

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Pairs	2.861	3	0.9535	11.28	< .001	0.134
Pairs ✻ expectation	0.480	3	0.1601	1.89	0.132	0.025
Pairs ✻ recall_favorability	3.891	3	1.2969	15.34	< .001	0.174
Residual	18.518	219	0.0846			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
expectation	0.25486	1	0.25486	5.764	0.019	0.073
recall_favorability	0.00747	1	0.00747	0.169	0.682	0.002
Residual	3.22777	73	0.04422			

Note. Type 3 Sums of Squares

Descriptives (both processing goals)

	Mean	SD
P(E|E)	0.171	0.246
P(U|E)	0.364	0.355
P(U|U)	0.258	0.255
P(E|U)	0.350	0.338

Descriptives by processing goal

	expectation	Mean	SD
P(E|E)	mem	0.192	0.264
	noexp	0.152	0.228
P(U|E)	mem	0.233	0.331
	noexp	0.491	0.334
P(U|U)	mem	0.222	0.256
	noexp	0.298	0.251
P(E|U)	mem	0.290	0.351
	noexp	0.419	0.314

Post Hoc Comparisons - Pairs

Comparison							
Pairs		Pairs	Mean Difference	SE	df	t	p_{tukey}
EE	-	EU	-0.2099	0.0508	73.0	-4.129	< .001
	-	UU	-0.0715	0.0269	73.0	-2.654	0.047
	-	UE	-0.2252	0.0461	73.0	-4.888	< .001
EU	-	UU	0.1384	0.0496	73.0	2.788	0.033
	-	UE	-0.0153	0.0597	73.0	-0.256	0.994
UU	-	UE	-0.1537	0.0452	73.0	-3.403	0.006

Post Hoc Comparisons - Pairs ✻ expectation

Comparison									
Pairs	expectation		Pairs	expectation	Mean Difference	SE	df	t	p_{tukey}
EE	mem	-	EE	noexp	0.0366	0.0551	73.0	0.665	0.998
		-	EU	mem	-0.0979	0.0762	73.0	-1.286	0.901
		-	EU	noexp	-0.2853	0.0653	73.0	-4.372	0.001
		-	UU	mem	-0.0360	0.0404	73.0	-0.892	0.986
		-	UU	noexp	-0.0704	0.0507	73.0	-1.389	0.859
		-	UE	mem	-0.1814	0.0690	73.0	-2.628	0.163
		-	UE	noexp	-0.2324	0.0631	73.0	-3.683	0.010
	noexp	-	EU	mem	-0.1345	0.0676	73.0	-1.991	0.495
		-	EU	noexp	-0.3219	0.0684	73.0	-4.704	< .001
		-	UU	mem	-0.0726	0.0497	73.0	-1.462	0.825
		-	UU	noexp	-0.1070	0.0363	73.0	-2.951	0.077
		-	UE	mem	-0.2180	0.0650	73.0	-3.356	0.026
		-	UE	noexp	-0.2690	0.0620	73.0	-4.338	0.001
EU	mem	-	EU	noexp	-0.1874	0.0771	73.0	-2.431	0.242
		-	UU	mem	0.0620	0.0744	73.0	0.833	0.991
		-	UU	noexp	0.0275	0.0642	73.0	0.429	1.000
		-	UE	mem	-0.0835	0.0895	73.0	-0.933	0.982
		-	UE	noexp	-0.1345	0.0745	73.0	-1.806	0.618
	noexp	-	UU	mem	0.2493	0.0610	73.0	4.089	0.003
		-	UU	noexp	0.2149	0.0668	73.0	3.216	0.039
		-	UE	mem	0.1039	0.0740	73.0	1.404	0.853
		-	UE	noexp	0.0529	0.0804	73.0	0.658	0.998
UU	mem	-	UU	noexp	-0.0344	0.0452	73.0	-0.761	0.995
		-	UE	mem	-0.1454	0.0677	73.0	-2.149	0.395
		-	UE	noexp	-0.1964	0.0586	73.0	-3.350	0.027
	noexp	-	UE	mem	-0.1110	0.0615	73.0	-1.805	0.619
		-	UE	noexp	-0.1620	0.0608	73.0	-2.665	0.150
UE	mem	-	UE	noexp	-0.0510	0.0727	73.0	-0.701	0.997

Experiment 2

8. Levels of elaboration

Descriptives

	#thoughts	words/thought
Mean	4.66	8.12
Standard deviation	2.20	4.13

Correlation Matrix

		attitude	thought_favorability
attitude	Pearson's r	—	
	df	—	
	p-value	—	
thought_favorability	Pearson's r	0.593 ***	—
	df	56	—
	p-value	< .001	—

Note. * p < .05, ** p < .01, *** p < .001

9. Processing goal: total recalls

Model Info

Info	
Estimate	Linear model fit by OLS
Call	#recalls_total ~ 1 + processing goal
R-squared	0.0479
Adj. R-squared	0.0386

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	28.9	1	5.13	0.026	0.048
processing goal	28.9	1	5.13	0.026	0.048
Residuals	574.6	102			
Total	603.5	103			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	6.74	0.269	102	25.07	< .001
proc. goal1	none - memory	1.22	0.537	102	2.27	0.026

10. Expectations: *exciting* ratings

Model Info

Info	
Estimate	Linear model fit by OLS
Call	exciting ~ 1 + expectation
R-squared	0.160
Adj. R-squared	0.145

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	24.9	1	10.7	0.002	0.160
expectation	24.9	1	10.7	0.002	0.160
Residuals	130.7	56			
Total	155.6	57			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	4.28	0.201	56	21.32	< .001
expectation1	exciting - unexciting	1.31	0.401	56	3.27	0.002

Descriptives

	expectation	N	Mean	SD
exciting	negative	29	3.62	1.50
	positive	29	4.93	1.56

11. Impact on attitudes

11.1 Attitudes by processing goal

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + expectation
R-squared	0.0535
Adj. R-squared	0.0442

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	3.67	1	5.76	0.018	0.053
expectation	3.67	1	5.76	0.018	0.053
Residuals	64.97	102			
Total	68.64	103			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	4.396	0.0904	102	48.65	< .001
expectation1	none - memory	-0.434	0.1807	102	-2.40	0.018

Descriptives

	expectation	N	Mean	SD
attitude	memory	78	4.61	0.855
	none	26	4.18	0.591

11.2 Attitudes by expectation

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + expectation
R-squared	0.01329
Adj. R-squared	-0.00433

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	0.554	1	0.754	0.389	0.013
expectation	0.554	1	0.754	0.389	0.013
Residuals	41.096	56			
Total	41.649	57			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	4.316	0.112	56	38.371	< .001
expectation1	exciting - unexciting	0.195	0.225	56	0.869	0.389

Descriptives

	expectation	N	Mean	SD
attitude	negative	29	4.22	0.783
	positive	29	4.41	0.924

11.3. Attitudes and recall favorability between processing goals

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + proc. goal + recall_favorability + proc. goal:recall_favorability
R-squared	0.0622
Adj. R-squared	0.0341

Model Results

ANOVA Omnibus tests

	SS	df	F	p	$\eta^2 p$
Model	4.269	3	2.211	0.091	0.062
proc. goal	2.538	1	3.943	0.050	0.038
recall_favorability	0.593	1	0.921	0.340	0.009
proc. goal ✻ recall_favorability	0.121	1	0.188	0.665	0.002
Residuals	64.367	100			
Total	68.636	103			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	4.4171	0.0958	100	46.111	< .001
expectation1	none - memory	-0.3804	0.1916	100	-1.986	0.050
recall_favorability	recall_favorability	0.0595	0.0620	100	0.959	0.340
expectation1 ✻ recall_favorability	none - memory ✻ recall_favorability	0.0538	0.1241	100	0.434	0.665

12. Organization: ARC scores

12.1 ARC scores by processing goal

Model Info

Info	
Estimate	Linear model fit by OLS
Call	clu_ARC ~ 1 + processing goal
R-squared	0.00719
Adj. R-squared	-0.00316

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	0.194	1	0.695	0.407	0.007
processing goal	0.194	1	0.695	0.407	0.007
Residuals	26.760	96			
Total	26.954	97			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	0.163	0.0604	96	2.698	0.008
proc. goal1	none - memory	-0.101	0.1208	96	-0.834	0.407

Descriptives

	expectation	Mean	SD
clu_ARC	memory	0.213	0.551
	none	0.113	0.455

12.2 ARC scores by expectation

Model Info

Info	
Estimate	Linear model fit by OLS
Call	clu_ARC ~ 1 + expectation
R-squared	0.02613
Adj. R-squared	0.00810

Model Results

ANOVA Omnibus tests

	SS	df	F	p	$\eta^2 p$
Model	0.295	1	1.45	0.234	0.026
expectation	0.295	1	1.45	0.234	0.026
Residuals	10.989	54			
Total	11.284	55			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	0.147	0.0603	54	2.43	0.018
expectation1	positive - negative	-0.145	0.1206	54	-1.20	0.234

Descriptives

	expectation	Mean	SD
clu_ARC	negative	0.2193	0.487
	positive	0.0742	0.413

13. Levels of recall: the incongruence effect

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Features recalled	14.49	1	14.49	13.26	< .001	0.191
Features recalled ✻ expectation	3.80	1	3.80	3.48	0.067	0.058
Residual	61.21	56	1.09			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
expectation	1.94	1	1.94	1.09	0.300	0.019
Residual	99.34	56	1.77			

Note. Type 3 Sums of Squares

Descriptives

	Mean	SD
#recalls_neg	3.40	1.24
#recalls_pos	2.69	1.17

14. Conditional probabilities as evidence of memory organization

14.1. Conditional probabilities by processing goal

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Pairs	1.511	3	0.5037	5.68	< .001	0.058
Pairs ✻ processing goal	0.344	3	0.1146	1.29	0.277	0.014
Residual	24.740	279	0.0887			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
processing goal	0.0577	1	0.0577	1.41	0.238	0.015
Residual	3.8053	93	0.0409			

Note. Type 3 Sums of Squares

14.2. Conditional probabilities by expectation

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Pairs	1.190	3	0.3967	5.051	0.002	0.083
Pairs ✻ expectation	0.109	3	0.0364	0.463	0.708	0.008
Residual	13.194	168	0.0785			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
expectation	0.0252	1	0.0252	0.781	0.381	0.014
Residual	1.8048	56	0.0322			

Note. Type 3 Sums of Squares

Post Hoc Comparisons - Pairs

Comparison							
Pairs		Pairs	Mean Difference	SE	df	t	p_{tukey}
EE	-	EU	-0.15862	0.0635	56.0	-2.498	0.071
	-	UU	-0.02385	0.0407	56.0	-0.586	0.936
	-	UE	-0.14943	0.0538	56.0	-2.780	0.036
EU	-	UU	0.13477	0.0536	56.0	2.512	0.069
	-	UE	0.00920	0.0501	56.0	0.184	0.998
UU	-	UE	-0.12557	0.0478	56.0	-2.626	0.053

Descriptives

	Mean	SD
P(E|E)	0.276	0.260
P(U|E)	0.435	0.311
P(U|U)	0.300	0.206
P(E|U)	0.426	0.242

14.3. Conditional probabilities by processing goal (recall favorability as covariate)

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Pairs	2.0398	3	0.6799	9.320	< .001	0.092
Pairs ✻ expectation	0.0922	3	0.0307	0.421	0.738	0.005
Pairs ✻ recall_favorability	4.6049	3	1.5350	21.040	< .001	0.186
Residual	20.1355	276	0.0730			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
expectation	0.0816	1	0.0816	2.01	0.160	0.021
recall_favorability	0.0683	1	0.0683	1.68	0.198	0.018
Residual	3.7370	92	0.0406			

Note. Type 3 Sums of Squares

Post Hoc Comparisons - Pairs

Comparison							
Pairs		Pairs	Mean Difference	SE	df	t	p_{tukey}
EE	-	EU	-0.1102	0.0502	92.0	-2.196	0.132
	-	UU	-0.0199	0.0298	92.0	-0.669	0.908
	-	UE	-0.1850	0.0449	92.0	-4.124	< .001
EU	-	UU	0.0903	0.0500	92.0	1.806	0.277
	-	UE	-0.0748	0.0462	92.0	-1.620	0.372
UU	-	UE	-0.1651	0.0440	92.0	-3.753	0.002

Descriptives

	Mean	SD
P(E|E)	0.259	0.245
P(U|E)	0.343	0.324
P(U|U)	0.274	0.254
P(E|U)	0.413	0.296

14.4. Conditional probabilities by expectation (recall favorability as covariate)

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Pairs	1.0904	3	0.36345	5.169	0.002	0.086
Pairs ✻ expectation	0.0281	3	0.00937	0.133	0.940	0.002
Pairs ✻ recall_favorability	1.5921	3	0.53070	7.547	< .001	0.121
Residual	11.6024	165	0.07032			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
expectation	0.02665	1	0.02665	0.8129	0.371	0.015
recall_favorability	0.00148	1	0.00148	0.0452	0.832	0.001
Residual	1.80328	55	0.03279			

Note. Type 3 Sums of Squares

Post Hoc Comparisons - Pairs

Comparison							
Pairs		Pairs	Mean Difference	SE	df	t	p_{tukey}
EE	-	EU	-0.15862	0.0603	55.0	-2.633	0.052
	-	UU	-0.02385	0.0294	55.0	-0.811	0.849
	-	UE	-0.14943	0.0536	55.0	-2.789	0.035
EU	-	UU	0.13477	0.0537	55.0	2.510	0.069
	-	UE	0.00920	0.0487	55.0	0.189	0.998
UU	-	UE	-0.12557	0.0438	55.0	-2.864	0.029

Descriptives

	Mean	SD
P(E|E)	0.276	0.260
P(U|E)	0.435	0.311
P(U|U)	0.300	0.206
P(E|U)	0.426	0.242

Appendix C. Supporting information for Empirical Chapter III

Experiment 1

1. Levels of elaboration

1.1. Number of thoughts and word per thought

	Mean	SD
#thoughts	4.50	1.89
words/thought	6.29	4.49

1.2. Attitudes and thought favorability correlation

Correlation Matrix

		attitude	thought_favorability
attitude	Pearson's r	—	
	df	—	
	p-value	—	
thought_favorability	Pearson's r	0.547 ***	—
	df	104	—
	p-value	< .001	—

Note. * p < .05, ** p < .01, *** p < .001

1.3. Attitudes and thought favorability: mixed ANOVA

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + condition + thought_favorability + condition:thought_favorability
R-squared	0.321
Adj. R-squared	0.273

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	31.63	7	6.632	< .001	0.321
condition	1.24	3	0.606	0.613	0.018
thought_favorability	22.37	1	32.834	< .001	0.251
condition ✻ thought_favorability	1.03	3	0.506	0.679	0.015
Residuals	66.77	98			
Total	98.40	105			

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	95% Confidence Interval Lower	95% Confidence Interval Upper	β	df	t	p
(Intercept)	(Intercept)	4.14837	0.0817	3.986	4.311	0.0000	98	50.7757	< .001
condition1	unex - memory	-0.29289	0.2350	-0.759	0.173	-0.3026	98	-1.2465	0.216
condition2	none - memory	-0.15137	0.2415	-0.631	0.328	-0.1564	98	-0.6267	0.532
condition3	exc - memory	-0.25336	0.2354	-0.721	0.214	-0.2617	98	-1.0762	0.284
thought_favorability	thought_favorability	0.20310	0.0354	0.133	0.273	0.5240	98	5.7301	< .001
condition1 ✻ thought_favorability	unex - memory ✻ thought_favorability	0.03825	0.1075	-0.175	0.252	0.0987	98	0.3558	0.723
condition2 ✻ thought_favorability	none - memory ✻ thought_favorability	-0.00447	0.1131	-0.229	0.220	-0.0115	98	-0.0395	0.969
condition3 ✻ thought_favorability	ex - memory ✻ thought_favorability	0.10195	0.1152	-0.127	0.331	0.2630	98	0.8851	0.378

2. Processing goal manipulation

2.1. Amount of recalls by processing goal

Model Info

Info	
Estimate	Linear model fit by OLS
Call	#recalls_total ~ 1 + proc. goal
R-squared	0.00826
Adj. R-squared	-0.00977

Model Results

ANOVA Omnibus tests

	SS	df	F	p	$\eta^2 p$
Model	2.58	1	0.458	0.501	0.008
proc. goal	2.58	1	0.458	0.501	0.008
Residuals	309.35	55			
Total	311.93	56			

Descriptives

	proc. goal	Mean	SD
#recalls_total	memory	6.26	2.74
	none	5.83	1.98

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	95% Confidence Interval Lower	95% Confidence Interval Upper	β	df	t	p
(Intercept)	(Intercept)	6.046	0.315	5.42	6.677	0.000	55	19.221	< .001
proc. goal1	none - memory	-0.426	0.629	-1.69	0.835	-0.180	55	-0.677	0.501

3. Attitudes

3.1. Attitudes by processing goal

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + proc. goal
R-squared	0.00751
Adj. R-squared	-0.01054

Model Results ANOVA

Omnibus tests

	SS	df	F	p	η^2p
Model	0.372	1	0.416	0.522	0.008
proc. goal	0.372	1	0.416	0.522	0.008
Residuals	49.153	55			
Total	49.524	56			

Descriptives

	proc. goal	Mean	SD
attitude	memory	4.40	1.066
	none	4.23	0.822

Fixed Effects Parameter Estimates

				95% Confidence Interval					
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	p
(Intercept)	(Intercept)	4.314	0.125	4.063	4.565	0.000	55	34.407	< .001
proc. goal1	none - memory	-0.162	0.251	-0.664	0.341	-0.172	55	-0.645	0.522

3.2. Attitudes by expectation

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + expectation
R-squared	0.00336
Adj. R-squared	-0.01246

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	0.233	1	0.212	0.646	0.003
expectation	0.233	1	0.212	0.646	0.003
Residuals	68.940	63			
Total	69.173	64			

Descriptives

	expectation	Mean	SD
attitude	unexciting	4.05	0.988
	exciting	4.17	1.100

Fixed Effects Parameter Estimates

				95% Confidence Interval					
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	p
(Intercept)	(Intercept)	4.112	0.130	3.853	4.371	0.000	63	31.687	< .001
expectation1	exciting - unex	0.120	0.260	-0.399	0.638	0.115	63	0.461	0.646

3.3. Attitudes and recall favorability

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + recall_favorability + condition + condition:recall_favorability
R-squared	0.1002
Adj. R-squared	0.0449

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	12.008	7	1.813	0.091	0.100
recall_favorability	9.956	1	10.522	0.002	0.084
condition	1.613	3	0.568	0.637	0.015
recall_favorability ✻ condition	0.828	3	0.292	0.831	0.008
Residuals	107.869	114			
Total	119.877	121			

Fixed Effects Parameter Estimates

				95% Confidence Interval					
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	p
(Intercept)	(Intercept)	4.2220	0.0890	4.0456	4.398	0.0000	114	47.4134	< .001
recall_favorability	recall_favorability	0.1654	0.0510	0.0644	0.266	0.3013	114	3.2437	0.002
condition1	unex - memory	-0.3299	0.2544	-0.8339	0.174	-0.3314	114	-1.2965	0.197
condition2	none - memory	-0.2087	0.2604	-0.7245	0.307	-0.2097	114	-0.8014	0.425
condition3	exc - memory	-0.1739	0.2539	-0.6768	0.329	-0.1747	114	-0.6848	0.495
recall_favorability ✻ condition1	recall_favorability ✻ unex - memory	0.0120	0.1387	-0.2627	0.287	0.0219	114	0.0868	0.931
recall_favorability ✻ condition2	recall_favorability ✻ unex - memory	-0.0436	0.1378	-0.3165	0.229	-0.0793	114	-0.3162	0.752
recall_favorability ✻ condition3	recall_favorability ✻ ex - memory	0.0957	0.1614	-0.2240	0.415	0.1743	114	0.5932	0.554

3.4. Multiple Linear Regression: Recall and thought favorability

Model Fit Measures

			Overall Model Test			
Model	R	R^2	F	df1	df2	p
1	0.566	0.320	24.2	2	103	< .001

Omnibus ANOVA Test

	Sum of Squares	df	Mean Square	F	p
recall_favorability	2.00	1	2.003	3.08	0.082
thought_favorability	24.78	1	24.776	38.13	< .001
Residuals	66.92	103	0.650		

Note. Type 3 sum of squares

Model Coefficients - attitude

Predictor	Estimate	SE	t	p
Intercept	4.1549	0.0796	52.17	< .001
recall_favorability	0.0766	0.0436	1.76	0.082
thought_favorability	0.1995	0.0323	6.18	< .001

4. Trait perception

4.1. Exciting ratings by processing goal

Model Info

Info	
Estimate	Linear model fit by OLS
Call	exciting ~ 1 + proc. goal
R-squared	0.0487
Adj. R-squared	0.0314

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	5.12	1	2.82	0.099	0.049
proc. goal	5.12	1	2.82	0.099	0.049
Residuals	99.87	55			
Total	104.98	56			

Fixed Effects Parameter Estimates

				95% Confidence Interval					
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	p
(Intercept)	(Intercept)	4.033	0.179	3.68	4.392	0.000	55	22.57	< .001
proc. goal1	none - memory	-0.600	0.357	-1.32	0.116	-0.438	55	-1.68	0.099

Descriptives

	proc. goal	Mean	SD
exciting	memory	4.33	1.24
	none	3.73	1.44

4.2. Exciting ratings by expectation

Model Info

Info	
Estimate	Linear model fit by OLS
Call	exciting ~ 1 + expectation
R-squared	0.00110
Adj. R-squared	-0.01451

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η²p
Model	0.181	1	0.0702	0.792	0.001
expectation	0.181	1	0.0702	0.792	0.001
Residuals	164.910	64			
Total	165.091	65			

Fixed Effects Parameter Estimates

				95% Confidence Interval					
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	p
(Intercept)	(Intercept)	4.271	0.198	3.876	4.666	0.0000	64	21.606	< .001
expectation1	exciting - unex	0.105	0.395	-0.685	0.895	0.0657	64	0.265	0.792

Descriptives

	expectation	Mean	SD
exciting	unexciting	4.22	1.68
	exciting	4.32	1.53

5. Recall and memory organization indexes

5.1. ARC scores by processing goal

Model Info

Info	
Estimate	Linear model fit by OLS
Call	clu_ARC ~ 1 + proc. goal
R-squared	0.0315
Adj. R-squared	0.0125

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	0.518	1	1.66	0.203	0.032
proc. goal	0.518	1	1.66	0.203	0.032
Residuals	15.894	51			
Total	16.412	52			

Fixed Effects Parameter Estimates

				95% Confidence Interval					
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	p
(Intercept)	(Intercept)	0.218	0.0768	0.0640	0.372	0.000	51	2.84	0.006
proc. goal1	none - memory	-0.198	0.1536	-0.5064	0.110	-0.352	51	-1.29	0.203

Descriptives

	proc. goal	Mean	SD
clu_ARC	memory	0.317	0.529
	none	0.119	0.583

5.2. ARC scores by expectation

Model Info

Info	
Estimate	Linear model fit by OLS
Call	clu_ARC ~ 1 + expectation
R-squared	0.0300
Adj. R-squared	0.0138

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η²p
Model	0.502	1	1.86	0.178	0.030
expectation	0.502	1	1.86	0.178	0.030
Residuals	16.231	60			
Total	16.734	61			

Fixed Effects Parameter Estimates

				95% Confidence Interval					
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	p
(Intercept)	(Intercept)	0.211	0.0661	0.0788	0.343	0.000	60	3.19	0.002
expectation1	exc. - unex.	0.180	0.1321	-0.0843	0.444	0.344	60	1.36	0.178

Descriptives

	expectation	Mean	SD
clu_ARC	unexciting	0.121	0.486
	exciting	0.301	0.552

5.3. Incongruence effect

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Features recalled	6.0057	1	6.0057	4.1184	0.047	0.061
Features recalled ✻ expectation	0.0980	1	0.0980	0.0672	0.796	0.001
Residual	91.8712	63	1.4583			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
expectation	1.42	1	1.42	0.643	0.426	0.010
Residual	139.38	63	2.21			

Note. Type 3 Sums of Squares

Descriptives

	Mean	SD
#recalls_exciting	2.58	1.29
#recalls_unexciting	3.02	1.41

5.4. Conditional probabilities of paired recalls by processing goal

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Pairs	2.04	3	0.679	2.93	0.036	0.057
Pairs ✻ proc. goal	2.19	3	0.730	3.15	0.027	0.062
Pairs ✻ recall_favorability	2.51	3	0.837	3.61	0.015	0.070
Residual	33.41	144	0.232			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
proc. goal	0.0206	1	0.0206	0.0354	0.851	0.001
recall_favorability	0.0287	1	0.0287	0.0492	0.825	0.001
Residual	27.9684	48	0.5827			

Note. Type 3 Sums of Squares

Post Hoc Comparisons - Pairs

Comparison							
Pairs		Pairs	Mean Difference	SE	df	t	p
EE	-	EU	-0.2482	0.1066	48.0	-2.327	0.024
	-	UU	-0.0918	0.0925	48.0	-0.992	0.326
	-	UE	-0.2001	0.0948	48.0	-2.112	0.040
EU	-	UU	0.1564	0.0986	48.0	1.587	0.119
	-	UE	0.0481	0.0852	48.0	0.564	0.575
UU	-	UE	-0.1084	0.0934	48.0	-1.160	0.252

Descriptives

	Mean	SD
P(E|E)	0.293	0.438
P(U|E)	0.519	0.671
P(U|U)	0.376	0.523
P(E|U)	0.497	0.621

Descriptives

	proc. goal	Mean	SD
P(E|E)	memory	0.404	0.555
	none	0.190	0.264
P(U|E)	memory	0.588	0.730
	none	0.455	0.617
P(U|U)	memory	0.198	0.312
	none	0.548	0.625
P(E|U)	memory	0.429	0.386
	none	0.563	0.786

Post Hoc Comparisons - Pairs ✻ expectation

Comparison									
Pairs	proc. goal		Pairs	proc. goal	Mean Difference	SE	df	t	p
EE	memory	-	EE	none	0.2054	0.121	48.0	1.704	0.095
		-	EU	memory	-0.2049	0.152	48.0	-1.345	0.185
		-	EU	none	-0.0860	0.160	48.0	-0.536	0.594
		-	UU	memory	0.1787	0.132	48.0	1.352	0.183
		-	UU	none	-0.1568	0.131	48.0	-1.202	0.235
		-	UE	memory	-0.0627	0.135	48.0	-0.463	0.645
		-	UE	none	-0.1320	0.147	48.0	-0.899	0.373
	none	-	EU	memory	-0.4103	0.162	48.0	-2.536	0.015
		-	EU	none	-0.2914	0.149	48.0	-1.951	0.057
		-	UU	memory	-0.0267	0.131	48.0	-0.204	0.839
		-	UU	none	-0.3623	0.130	48.0	-2.795	0.007
		-	UE	memory	-0.2682	0.148	48.0	-1.815	0.076
		-	UE	none	-0.3375	0.133	48.0	-2.542	0.014
EU	memory	-	EU	none	0.1189	0.193	48.0	0.615	0.542
		-	UU	memory	0.3837	0.141	48.0	2.724	0.009
		-	UU	none	0.0481	0.169	48.0	0.284	0.778
		-	UE	memory	0.1422	0.122	48.0	1.168	0.249
		-	UE	none	0.0729	0.182	48.0	0.400	0.691
	none	-	UU	memory	0.2648	0.168	48.0	1.572	0.122
		-	UU	none	-0.0708	0.138	48.0	-0.513	0.610
		-	UE	memory	0.0233	0.182	48.0	0.128	0.899
		-	UE	none	-0.0460	0.119	48.0	-0.386	0.701
UU	memory	-	UU	none	-0.3356	0.140	48.0	-2.393	0.021
		-	UE	memory	-0.2415	0.133	48.0	-1.809	0.077
		-	UE	none	-0.3108	0.155	48.0	-1.999	0.051
	none	-	UE	memory	0.0941	0.156	48.0	0.603	0.549
		-	UE	none	0.0248	0.131	48.0	0.189	0.851
UE	memory	-	UE	none	-0.0693	0.170	48.0	-0.408	0.685

5.4. Conditional probabilities of paired recalls by expectation

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Pairs	0.379	3	0.126	0.423	0.737	0.007
Pairs ✻ expectation	0.582	3	0.194	0.651	0.583	0.011
Pairs ✻ recall_favorability	8.760	3	2.920	9.793	< .001	0.142
Residual	52.779	177	0.298			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
expectation	0.00147	1	0.00147	0.00300	0.956	0.000
recall_favorability	0.99197	1	0.99197	2.03127	0.159	0.033
Residual	28.81267	59	0.48835			

Note. Type 3 Sums of Squares

Descriptives

	Mean	SD
P(E|E)	0.531	0.820
P(U|E)	0.492	0.634
P(U|U)	0.446	0.563
P(E|U)	0.430	0.373

Experiment 2
Pre-test

Mixed Model

Model Info

Info	
Estimate	Linear mixed model fit by REML
Call	Rating ~ 1 + set + task + set:task+(1 | ID)+(1 | feature)
AIC	8572.458
BIC	8666.121
LogLikel.	-4285.858
R-squared Marginal	0.624
R-squared Conditional	0.684
Converged	yes
Optimizer	bobyqa

Model Results

Fixed Effect Omnibus tests

	F	Num df	Den df	p
set	210.1	2	26.0	< .001
task	19.1	2	2546.0	< .001
set ✻ task	32.6	4	2546.0	< .001

Note. Satterthwaite method for degrees of freedom

Fixed Effects Parameter Estimates

				95% Confidence Interval				
Names	Effect	Estimate	SE	Lower	Upper	df	t	p
(Intercept)	(Intercept)	4.5115	0.1008	4.3139	4.7091	44.9	44.7544	< .001
set1	P-EX - N-UNEX	3.7244	0.1977	3.3370	4.1119	26.0	18.8391	< .001
set2	P-UNEX - N-UNEX	3.2968	0.2031	2.8987	3.6949	26.0	16.2312	< .001
task1	g - b	-0.1840	0.0584	-0.2984	-0.0695	2546.0	-3.1505	0.002
task2	v - b	0.1770	0.0584	0.0626	0.2915	2546.0	3.0321	0.002
set1 ✻ task1	P-EX - N-UNEX ✻ g - b	0.0133	0.1404	-0.2619	0.2886	2546.0	0.0949	0.924
set2 ✻ task1	P-UNEX - N-UNEX ✻ g - b	0.3048	0.1443	0.0220	0.5876	2546.0	2.1125	0.035
set1 ✻ task2	P-EX - N-UNEX ✻ v - b	0.9800	0.1404	0.7047	1.2553	2546.0	6.9779	< .001
set2 ✻ task2	P-UNEX - N-UNEX ✻ v - b	1.4911	0.1443	1.2083	1.7739	2546.0	10.3339	< .001

Random Components

Groups	Name	SD	Variance	ICC
ID	(Intercept)	0.320	0.102	0.0646
feature	(Intercept)	0.423	0.179	0.1079
Residual		1.216	1.479	

Note. Number of Obs: 2610 , groups: ID 30, feature 29

Random Effect LRT

Test	N. par	AIC	LRT	df	p
(1 | ID)	11	8706	112	1.00	< .001
(1 | feature)	11	8798	204	1.00	< .001

Experiment 2

1. Levels of elaboration

Descriptives

	N	Mean	SD
#thoughts	155	5.26	2.45
wordcount	154	6.73	4.04

Correlation Matrix

		attitude	thought_favorability
attitude	Pearson's r	—	
	df	—	
	p-value	—	
thought_favorability	Pearson's r	0.450 ***	—
	df	153	—
	p-value	< .001	—

1.2. Attitudes and thought favorability: mixed ANOVA

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + condition + thought_favorability + condition:thought_favorability
R-squared	0.228
Adj. R-squared	0.191

Model Results

ANOVA Omnibus tests

	SS	df	F	p	$\eta^2 p$
Model	31.678	7	6.1910	< .001	0.228
condition	3.399	3	1.5498	0.204	0.031
thought_favorability	27.209	1	37.2227	< .001	0.202
condition ✻ thought_favorability	0.162	3	0.0740	0.974	0.002
Residuals	107.452	147			
Total	139.130	154			

2. Processing goal manipulation

Model Info

Info	
Estimate	Linear model fit by OLS
Call	#recalls ~ 1 + proc. goal
R-squared	0.0788
Adj. R-squared	0.0676

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	57.0	1	7.01	0.010	0.079
proc. goal	57.0	1	7.01	0.010	0.079
Residuals	666.6	82			
Total	723.6	83			

Descriptives

	proc. goal	Mean	SD
#recalls	memory	6.34	2.70
	none	8.00	3.03

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	df	t	p
(Intercept)	(Intercept)	7.17	0.313	82	22.89	< .001
proc. goal1	none - memory	1.66	0.627	82	2.65	0.010

3. Attitudes

3.1. Attitudes by processing goal

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + proc. goal
R-squared	1.95e-4
Adj. R-squared	-0.0120

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η²p
Model	0.0163	1	0.0160	0.900	0.000
proc. goal	0.0163	1	0.0160	0.900	0.000
Residuals	83.8048	82			
Total	83.8211	83			

Descriptives

	proc. goal	Mean	SD
attitude	memory	6.05	1.029
	none	6.02	0.987

Fixed Effects Parameter Estimates

				95% Confidence Interval					
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	p
(Intercept)	(Intercept)	6.0321	0.111	5.811	6.253	0.0000	82	54.297	< .001
proc. goal1	none - memory	-0.0281	0.222	-0.470	0.414	-0.0279	82	-0.126	0.900

3.2. Attitudes by expectation

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + expectation
R-squared	0.00155
Adj. R-squared	-0.01292

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η²p
Model	0.0844	1	0.107	0.744	0.002
expectation	0.0844	1	0.107	0.744	0.002
Residuals	54.2043	69			
Total	54.2887	70			

Descriptives

	expectation	Mean	SD
attitude	unexciting	5.84	0.908
	exciting	5.91	0.862

Fixed Effects Parameter Estimates

				95% Confidence Interval					
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	p
(Intercept)	(Intercept)	5.8724	0.105	5.662	6.082	0.0000	69	55.778	< .001
expectation1	exciting - unexciting	0.0690	0.211	-0.351	0.489	0.0784	69	0.328	0.744

3.3. Attitudes and recall favorability

Model Info

Info	
Estimate	Linear model fit by OLS
Call	attitude ~ 1 + condition + recall_favorability + condition:recall_favorability
R-squared	0.0228
Adj. R-squared	-0.0238

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	3.169	7	0.489	0.841	0.023
condition	1.087	3	0.392	0.759	0.008
recall_favorability	0.510	1	0.552	0.459	0.004
condition ✻ recall_favorability	1.849	3	0.666	0.574	0.013
Residuals	135.961	147			
Total	139.130	154			

Fixed Effects Parameter Estimates

				95% Confidence Interval					
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	p
(Intercept)	(Intercept)	5.9594	0.0790	5.8033	6.1154	0.0000	147	75.473	< .001
condition1	unex - memory	-0.2229	0.2140	-0.6458	0.1999	-0.2346	147	-1.042	0.299
condition2	none - memory	-0.0443	0.2137	-0.4666	0.3780	-0.0466	147	-0.207	0.836
condition3	exc - memory	-0.0977	0.2216	-0.5357	0.3402	-0.1028	147	-0.441	0.660
recall_favorability	recall_favorability	0.0167	0.0224	-0.0277	0.0610	0.0629	147	0.743	0.459
condition1 ✻ recall_favorability	unex - memory ✻ recall_favorability	-0.0132	0.0575	-0.1268	0.1004	-0.0499	147	-0.230	0.818
condition2 ✻ recall_favorability	none - memory ✻ recall_favorability	0.0390	0.0613	-0.0821	0.1601	0.1470	147	0.636	0.526
condition3 ✻ recall_favorability	exc - memory ✻ recall_favorability	0.0695	0.0675	-0.0639	0.2029	0.2621	147	1.029	0.305

4. Recall and memory organization indexes

4.1. ARC scores by processing goal

Model Info

Info	
Estimate	Linear model fit by OLS
Call	clu_ARC ~ 1 + proc. goal
R-squared	0.00798
Adj. R-squared	-0.00411

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	0.130	1	0.660	0.419	0.008
proc. goal	0.130	1	0.660	0.419	0.008
Residuals	16.215	82			
Total	16.346	83			

Fixed Effects Parameter Estimates

				95% Confidence Interval					
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	p
(Intercept)	(Intercept)	0.5009	0.0489	0.404	0.598	0.000	82	10.251	< .001
proc. goal1	none - memory	-0.0794	0.0977	-0.274	0.115	-0.179	82	-0.812	0.419

Descriptives

	proc. goal	Mean	SD
clu_ARC	memory	0.541	0.504
	none	0.461	0.354

4.2. ARC scores by expectation

Model Info

Info	
Estimate	Linear model fit by OLS
Call	clu_ARC ~ 1 + expectation
R-squared	0.00133
Adj. R-squared	-0.01314

Model Results

ANOVA Omnibus tests

	SS	df	F	p	η^2p
Model	0.00957	1	0.0920	0.763	0.001
expectation	0.00957	1	0.0920	0.763	0.001
Residuals	7.17968	69			
Total	7.18925	70			

Fixed Effects Parameter Estimates

				95% Confidence Interval					
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	p
(Intercept)	(Intercept)	0.5024	0.0530	0.397	0.608	0.0000	69	9.474	< .001
expectation1	unexciting - exciting	-0.0232	0.0766	-0.176	0.130	-0.0725	69	-0.303	0.763

Descriptives

	expectation	Mean	SD
clu_ARC	unexciting	0.502	0.342
	exciting	0.479	0.300

4.3. Incongruence effect

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Features recalled	55.58	1	55.58	27.37	< .001	0.284
Features recalled ✻ expectation	3.33	1	3.33	1.64	0.205	0.023
Residual	140.14	69	2.03			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
expectation	0.0298	1	0.0298	0.00807	0.929	0.000
Residual	255.0688	69	3.6966			

Note. Type 3 Sums of Squares

4.4. Incongruence effect: processing goal

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Features recalled	88.4	1	88.40	40.93	< .001	0.333
Features recalled ✻ proc. goal	18.8	1	18.81	8.71	0.004	0.096
Residual	177.1	82	2.16			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
proc. goal	63.2	1	63.23	16.4	< .001	0.167
Residual	315.6	82	3.85			

Note. Type 3 Sums of Squares

Post Hoc Comparisons - Features recalled ✻ proc. goal

Comparison											
Features recalled	proc. goal		Features recalled	proc. goal	Mean Difference	SE	df	t	p	p_{tukey}
E+	memory	-	E+	none	-1.910	0.443	82.0	-4.315	< .001	< .001
		-	E-	memory	0.787	0.303	82.0	2.597	0.011	0.053
		-	E-	none	0.225	0.373	82.0	0.604	0.547	0.930
	none	-	E-	memory	2.697	0.389	82.0	6.937	< .001	< .001
		-	E-	none	2.135	0.342	82.0	6.249	< .001	< .001
E-	memory	-	E-	none	-0.562	0.307	82.0	-1.829	0.071	0.267

4.5. Conditional probabilities of recall: by processing goal

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Pairs	1.020	3	0.3399	3.49	0.017	0.051
Pairs ✻ recall_favorability	1.302	3	0.4339	4.45	0.005	0.064
Pairs ✻ proc. goal	0.354	3	0.1181	1.21	0.307	0.018
Residual	19.017	195	0.0975			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
proc. goal	0.225	1	0.2251	8.72	0.004	0.118
recall_favorability	0.214	1	0.2137	8.28	0.005	0.113
Residual	1.678	65	0.0258			

Note. Type 3 Sums of Squares

Post Hoc Comparisons - Pairs

Comparison							
Pairs		Pairs	Mean Difference	SE	df	t	p_{tukey}
E+E+	-	E+E-	0.0374	0.0566	65.0	0.662	0.911
	-	E-E-	0.1928	0.0327	65.0	5.899	< .001
	-	E-E+	-0.1208	0.0535	65.0	-2.255	0.119
E+E-	-	E-E-	0.1553	0.0524	65.0	2.967	0.021
	-	E-E+	-0.1582	0.0609	65.0	-2.596	0.055
E-E-	-	E-E+	-0.3135	0.0614	65.0	-5.106	< .001

Descriptives

	Mean	SD
P(E+|E+)	0.384	0.248
P(E-|E+)	0.319	0.310
P(E-|E-)	0.214	0.253
P(E+|E-)	0.464	0.367

4.6. Conditional probabilities of paired recalls: by expectation

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
Pairs	1.780	3	0.5934	7.23	< .001	0.103
Pairs ✻ recall_favorability	0.641	3	0.2136	2.60	0.053	0.040
Pairs ✻ expectation	0.294	3	0.0980	1.19	0.313	0.019
Residual	15.505	189	0.0820			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	η^2_p
expectation	0.0953	1	0.0953	4.06	0.048	0.060
recall_favorability	0.1081	1	0.1081	4.61	0.036	0.068
Residual	1.4795	63	0.0235			

Note. Type 3 Sums of Squares

Post Hoc Comparisons - Pairs

Comparison							
Pairs		Pairs	Mean Difference	SE	df	t	p_{tukey}
E+E+	-	E+E-	-0.00779	0.0538	63.0	-0.145	0.999
	-	E-E-	0.13705	0.0390	63.0	3.514	0.004
	-	E-E+	-0.21391	0.0479	63.0	-4.466	< .001
E+E-	-	E-E-	0.14484	0.0435	63.0	3.330	0.008
	-	E-E+	-0.20612	0.0533	63.0	-3.868	0.001
E-E-	-	E-E+	-0.35096	0.0595	63.0	-5.903	< .001

Descriptives

	Mean	SD
P(E+|E+)	0.379	0.229
P(E-|E+)	0.356	0.271
P(E-|E-)	0.226	0.236
P(E+|E-)	0.570	0.322