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Can Personal Meaning Reduce Avoidance? A Systematic Review of Experimental Analogs

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Abstract

Avoidance is a kind of behavior that phylogenetically has helped humans to survive harmful situations. However, following a behavioral pattern based on avoidance is not always useful; it can render some relive from the reduction of discomfort but, in the long term, can bring suffering and destruction to the life of the person. At the same time, humans act according to a type of motivation named personal meaning, which can drive our behavior even when facing uncomfortable feelings and thoughts. Acceptance and commitment therapy (ACT) is a contextual therapy that focuses on minimizing the pattern of avoidance and maximizing the pattern of meaningful actions, which in the long term can bring life satisfaction to the person. Various randomized controlled trials have showed that this type of interventions are effective for different psychological problems. Different experimental analogs have studied, in the laboratory, the effect of the specific ACT component of personal meaning, or values, on reducing avoidance. However, no systematic review has been found on this topic and this is the aim of the present review. The systematic search found nineteen experimental analogs and their results revealed that personal meaning is a useful tool to reduce avoidance, in the form of pain tolerance, and that psychological distancing complements effectively the positive impact of personal meaning. We discuss these results and the details of how the motivational protocols were implemented, trying to identify key elements that could help to promote more flexible behavioral patterns.
Key words: meaning, values, avoidance, distancing, Acceptance and Commitment Therapy.

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Novelty and Significance

What is already known about the topic?

- Destructive experiential avoidance is at the core of many psychological problems.
- Interventions based on ACT and psychological flexibility target avoidance and have been shown, in different meta-analyses, to be useful to improve psychological problems and life satisfaction.
- Personal meaning, or values, is a specific component of psychological flexibility that has been shown to be useful in promoting psychological flexibility and life satisfaction.

What this paper adds?

- The review has focused on the experimental analogs using direct measures of avoidance and valued behaviors.
- The review has shown that personal meaning reduces avoidance and promotes valued actions even in the presence of discomfort.

Avoidance is a widely extended behavior in animal organisms, including human beings. It is a pattern of behavior that, as the rest of behaviors, became selected by surviving contingencies since escaping or avoiding aversive or uncomfortable events was adaptive. At the same time, humans act according to a type of motivation named personal meaning and are able to do so even when uncomfortable feelings and thoughts arise, such as fear, sadness, and pain. This is a fundamental part of the human condition, as has been pointed out on many occasions, for instance, by Frankl (2021), when describing

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personal experiences surviving during the Holocaust. Personal meaning is the reason why a person would choose to face difficult circumstances instead of avoiding them.

The consequences of following a behavioral pattern based on personal meaning are completely different than when avoiding the discomfort (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996; Fester, 1973). Let us consider two specific examples: Jacques and Peter were both diagnosed with cancer and received chemotherapy as part of the treatment. They both shared feelings of sadness and depression about the fear that their life would end very soon and about the thought of all the things they will not be able to enjoy. However, after a short period of anxiety and depression, Jacques reacted differently to Peter. The former chose to act as much as possible for the sake of his love for his family and friends. That is, he was committed to doing the things that were important to him, even when the fear of an upcoming death threatened him on many occasions. At the very end, he felt proud of his way of moving through his cancer. On the contrary, Peter spent most of his time ruminating about the lack of life and avoided his family and friends. His loneliness and depression increased because of the loss of many things and, at the very end, it was not the cancer, but his fused acts to his initial loneliness and thoughts that made him live isolated from the people and activities he loved.

The kind of problematic pattern that Peter followed is a destructive pattern of avoidance, which is considered to be at the core of many psychological problems (Hayes *et alii*, 1996; Levin *et alii*, 2014; Luciano & Hayes, 2001). That is, a pattern that renders some relive and satisfaction from the coherence to the avoidance rules, as well as from the intermittent or minor reduction of discomfort. However, the destructive pattern of avoidance does not pay off in the long term because it brings more suffering and destruction in what is truly relevant to the person. Minimizing the tendency to respond in a coherent manner with avoidance and, at the same, increasing the tendency to respond coherently with personal meaning, even in the presence of uncomfortable emotions, thoughts, and feelings, are the main focus of contextual therapies such as acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999; Pérez Álvarez, 2014; Wilson & Luciano, 2002).

ACT is a therapy that is philosophically rooted in functional contextualism (Hayes, 1993; Hayes, Barnes-Holmes, & Wilson, 2012; Hayes, Hayes, & Reese, 1988). Conceptually, it is based on behavioral analysis (Dougher & Hayes, 2000) and on the behavioral understanding of the language of relational frame theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001). ACT focuses on building a pattern of psychological flexibility and primarily employs two psychological verbal processes to promote behaviors that are more flexible. The first one consists in creating a psychological distance between the experiences that the person notices and his later behavior, so not to respond impulsively to what he experiences in the moment. Within ACT, psychological distancing is commonly referred to as acceptance or defusion. The second one consists in identifying a higher-order personal meaning that is more valuable than the feeling of relief we get from avoiding aversive functions, so as to link and guide the future behavior with the identified personal meaning. This higher-order personal meaning is abstract in nature. It does not correspond nor identify with any specific outcome or goal that can be achieved. Moreover, it has to be meaningful for the person and not given by any external person. The higher-order personal meaning is what within ACT is commonly referred to as personal values. In ACT literature, values are defined as "freely chosen, verbally constructed consequences of ongoing, dynamic, evolving patterns of activity,

which establish predominant reinforcers for that activity that are intrinsic in engagement in the valued behavioral pattern itself" (Wilson & Dufrene, 2008, p. 64; also see Dahl, Plumb, Lundgren, & Stewart, 2009).

Regarding the empirical evidence of the general ACT model of psychological flexibility (PF), its clinical interventions count with great empirical support for many psychological problems, as shown in the review of meta-analyses of randomized controlled trials by Gloster, Walder, Levin, Twohig, and Karekla (2020), and in other similar meta-analysis focused on depression (Zhenggang, Shigaa, Luyaoa, Sijiea, & Iris, 2020), on adolescent anxiety (Burley & McAloon, 2024), on eating disorders (Di Sante, Akeson, Gossack, & Knäuper, 2022), on insomnia (Ruan et alii, 2022), and on chronic health conditions (Konstantinou *et alii*, 2023). Moderation and mediational analyses have shown its great importance. Different studies showed that PF moderates the positive effect of ACT on self-care activities in people with diabetes (Shayeghian, Hassanabadi, Aguilar Vafaie, Amiri, & Besharat, 2016) and in patients suffering from trichotillomania (Ong *et alii*, 2023). ACT interventions have a greater impact on patients with stronger worksite distress (Flaxman & Bond, 2010), more anxious cancer survivors (Arch *et alii*, 2021) and more anxious adolescents (Burley & McAloon, 2024) than in less distressed patients. Furthermore, PF mediates the positive effect of web-based ACT interventions with mild depression (Pots, Trompetter, Schreurs, & Bohlmeijer, 2016) and of ACT interventions with anxious cancer survivors (Fishbein, Judd, Genung, Stanton, & Arch, 2021).

Concerning empirical evidence at a more specific level, an analysis of the different components of PF has shown that both clinical interventions focused only on psychological distancing and clinical interventions centered only on personal meaning are effective in increasing psychological flexibility and reducing the severity of clinical symptoms (Villatte, Vilargada, Villate, Plumb-Vilardaga, Atkins, & Hayes, 2016). A recent systematic review by Matheus Rahal & Caserta Gon (2020) provided further information on the positive impact of clinical interventions focused on personal meaning, on different psychopathological outcomes such as anxiety disorders, depression, and alcohol dependence, among others.

The data mentioned come from clinical interventions that mainly employ questionnaires as indirect measures for symptomatology, quality of life, avoidance, etc. The case of experimental laboratory analog studies is different; they employ direct measures and allow for a greater validity of the functional relations observed. As in the case of clinical interventions, experimental analogs have also shown a positive effect of ACT protocols that focus on personal meaning. However, no systematic review has been found examining the experimental data available on this topic. The present systematic review aims to review empirical data on the role of personal meaning in diminishing avoidance to discomfort, while identifying key elements of their motivational protocols that could help to promote more flexible behavioral patterns.

Method

Search Strategy

A systematic search was conducted to identify experimental analog studies investigating the impact of abstract motivational operations on reducing avoidance to aversive functions. The search was carried out in December 2023 and followed the PRISMA recommendations about how to conduct a systematic review (Page *et alii*, 2021). The databases employed were ISI Web of Knowledge (Web of Science -WoS), Scopus,

and ProQuest (APA PsyInfo, APA PsyArticles, Medline, and Psychology Database). In order to narrow down the search to title, abstract, and keywords, in (a) WoS the filter "topic" was selected; in (b) Scopus the filter "title, abstract and keywords" was selected; and in (c) ProQuest the filter "anywhere except full text" was selected. Two additional filters were selected in all three databases: s*cientific articles from peer reviewed journals* and *English* as a language. The search did not include any other filter.

The terms and Booleans "AND", "NOT" and "OR" used in the search in the three databases were as follows: (valu* OR meaning OR purpose OR motivatio* OR augmen*) AND (avoidan* OR escape OR pain OR discomfort OR distress) AND ("acceptance and commitment therapy" OR "ACT" OR "acceptance-based behavioral therapy" OR "relational frame theory") AND (result* OR participa* OR experimen*) NOT ("controlled trial" OR case OR review OR theoretic* OR validity OR patien* OR outpatien* OR healt* OR pharma* OR drug OR neuro* OR genet* OR brain OR biologi* OR "animal" OR cultur* OR ethic* OR politic* OR law). Keywords enclosed within the "NOT" parentheses were incorporated to refine the search results, which initially yielded a substantial number of records.

Selection Criteria

Due to the present systematic review aims to assess the role of personal values in diminishing the avoidance functions that typically accompany aversive functions, the following specific inclusion criteria were applied: (1) to study the verbal effect of abstract motivational functions; (2) to include some type of aversive functions; (3) to assess avoiding and approaching behaviors; (4) to be an experimental analog; (5) to be included in a peer-reviewed journal; and (6) to be written in English. Theoretical articles, intervention and correlational studies, systematic reviews and meta-analysis were excluded.

Study Selection

Once search terms were introduced into the database, a total of 968 papers were identified from scientific journals (a summary of the study selection can be seen in Figure 1). However, 605 papers remained after removing duplicates. Subsequently, the title, or title and abstract, of each paper was reviewed. Only papers that included experimental analog studies examining the effect of personal values protocols on avoidance functions were included for further consideration. Another two papers were included from the reference lists of the papers found in the search (McMullen, Barnes-Holmes, Barnes-Holmes, Stewart, Luciano, & Cochrane, 2008; Moore, Stewart, Barnes-Holmes, Barnes-Holmes, & McGuire, 2016). This left a total of 21 papers considered for the review of their full text. Upon closer examination of these papers, one paper was excluded because it was an intervention in a clinical context and not an experimental analog (Luciano, Ruiz, Vizcaíno, Sánchez, Gutiérrez, & López López, 2011). Another two were excluded because they did not include any verbal motivational operation (Carrasquillo & Zettle, 2014; Chastain, Tarbox, Meshes, & Wang, 2022). Another paper was excluded because it did not include an experimental task with direct aversive functions such as electric shocks, cold water, etc. (Murthy, Villatte, & McHugh, 2019). Finally, 17 papers, including 19 experiments, were selected for further examination and inclusion in the present systematic review.

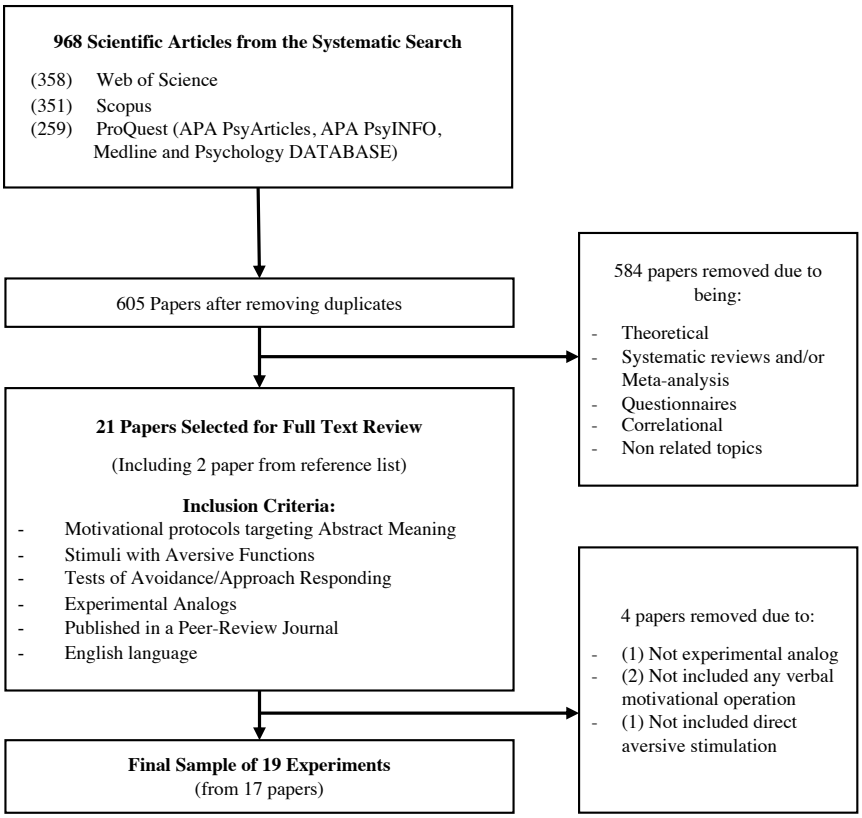

Figure 1. Flow chart of the study selection.

Data Extraction and Classification

The details of each experiment were analyzed, identifying the characteristics of the following elements: (a) the form in which the abstract, personally meaningful motivation was identified and employed in the task; (b) the kind of aversive stimulation included in the experimental task; (c) the kind of avoiding/approaching response given in the experimental task and whether it consists only in one trial (for instance, measuring the time of execution) or if it includes several trials; (d) the kind of measure used in the test: idiographic, nomothetic, or both; and (e) the inclusion, or not, of an acceptance/defusion protocol.

RESULTS

The nineteen experimental analogs included in the systematic review were extracted from seventeen papers. All nineteen experiments used abstract motivational functions. In fifteen of the experiments, the motivational protocol employed an abstract

value identified by the participants, while in the remaining four experiments, an abstract motivation was given by the experimenters. Among the fifteen experiments using abstract and personal values, three focused solely on the motivational intervention without explicitly incorporating any acceptance/defusion component. The remaining twelve experiments integrated explicit elements of both personal values and acceptance/defusion. Of the four experiments using abstract motivations provided by the experimenters, two focused exclusively on the motivational intervention without explicitly including acceptance/defusion. The other two combined explicit elements of both personal values and acceptance/defusion. Tables 1 and 2 shows the main specific features of each of the selected papers, while other relevant and specific details of the experimental studies are reported in the text.

The results of the experiments are grouped and presented according to whether they identified a participant's abstract meaning or whether they provided the abstract meaning. Additionally, experiments from each group are divided into whether they included or not explicit elements of psychological distancing.

In fifteen experiments, motivational interventions employed abstract reinforcing functions that the participants had to identify themselves. The interventions varied in how participants identified their personal values: (a) some motivational interventions directly asked participants to think about something meaningful for them, (b) others asked for personal examples of being guided by a personal meaning even in the presence of discomfort, (c) others used the experiential exercise of "attending your own funeral" to identify the personal meaning, (d) others used the Valued Living Questionnaire (VLQ; Wilson, Sandoz, Kitchens, & Roberts, 2010) to identified the vital area ranked as the most important, and (e) other experiments asked participants to identify a personally important charity and write about why it was meaningful to them. A summary of these experiments can be seen in Table 1.

The three of these fifteen experiments that studied the effect of a *motivational protocol alone* focused on identifying a *personal value* and connecting it with the experimental task. Their experimental tasks included aversive functions in the form of cold water or disgusting objects. They are presented chronologically. The first experiment found to study personal meaning alone (Smith *et alii*, 2019) investigated how a personal values protocol affected pain tolerance in the cold-pressor task, where participants endure pain induced by cold water. Participants were randomly assigned to two experimental conditions (see Table 1). The idiographic data presented did not allow tallying participants increasing immersion time or analyzing the relationship between immersion time, pain, and distress changes. Nonetheless, it revealed that most value-protocol participants increased immersion time regardless of pain or distress levels. In contrast, the non-intervention group exhibited more variability, with many participants maintaining or reducing immersion time and a few increasing it. The nomothetic data showed that, increased pain perception was related to decreased pain tolerance in the non-intervention group. However, participants in the personal values group statistically significantly increased immersion time compared to the non-intervention condition, even when experiencing heightened pain perception.

Another experiment (Hebert, Flynn, Wilson, & Kellum, 2021) examined how a personal values protocol influenced the willingness to approach stimuli with disgusting functions. The disgusting stimuli consisted of different objects that typically evoke disgust, and the task involved approaching these objects as much as possible (BAT). Participants were assigned to three experimental conditions. In the personal values

Table 1. Experiments with Meaning identified by the Participants to Reduce Avoidance.

Authors	Sample (adults)	Experimental Conditions	Motivational Protocol (ACT coherent)		Avoidance Task		Data analysis	Results
			Content	¿Includes Distancing?	Aversive Functions	Measure		
Gutiérrez *et alii* (2004)	40	Motivational Distancing /v/ Motivational Distraction	Helping people suffering from chronic pain. Identifying an important life goal. Linking doing the task with the personal value. Swamp metaphor.	Yes	Electric shocks	Pain tolerance: Number of shocks received + Discomfort: VAS	Idiographic + Nomothetic	Motivational condition increased pain tolerance. Higher effect of the motivational condition when pain perception was high.
Páez Blarrina *et alii* (2007)	20	Motivational Distancing /v/ Motivational Suppression	Helping people suffering from chronic pain. Identifying an important life goal. Linking doing the task with the personal value. Swamp metaphor.	Yes	Electric shocks	Pain tolerance: Number of shocks received + Discomfort: VAS	Idiographic + Nomothetic	Both conditions increased pain tolerance. Only acceptance increased pain tolerance when the pain was high.
Páez Blarrina *et alii* (2008)	30	Motivational Distancing /v/ Motivational Suppression /v/ Untrained	Helping people suffering from chronic pain. Personal examples of moving toward the value in presence of pain. Identifying an important life goal. Linking doing the task with the personal value. Swamp metaphor.	Yes	Electric shocks	Pain tolerance: Number of shocks received + Discomfort: VAS	Idiographic + Nomothetic	Both meaning and distancing increased pain tolerance. Distraction plus values, although lower, showed an increment in pain tolerance.
Branstetter *et alii* (2009)	99	Meaning + Distancing /v/ Distancing /v/ No-Intervention	Identify a top-ranked personal value (VLQ). Linking doing the task with the top-ranked value. Imaginary/visualization exercise.	Yes	Cold water task	Pain tolerance: Time hand in cold water + Discomfort: VAS	Nomothetic	Acceptance increased pain tolerance. Adding values to acceptance further increased pain tolerance.
Luciano *et alii* (2014)	39	Motivational Distancing /v/ Earning Money	Earning money. Personal examples of acting with meaning in the presence of pain.	Yes	Electric shocks	Pain tolerance: shocks received + Physiological: Skin Conductance	Idiographic + Nomothetic	Meaning plus distancing condition diminished both direct and derived avoidance.
Moore *et alii* (2016) (two experim.)	E1: 41 E2: 52	Meaning + Distancing /v/ Meaning + Distraction /v/ Distancing /v/ Distraction	E1 and E2: Imaging situations of acting with meaning despite the pain. E1 and E2: Personal examples of acting with meaning in the presence of pain. E2: Helping people suffering from chronic pain.	Yes	Electric shocks	Pain tolerance: Number of shocks received + Discomfort: VAS	Idiographic + Nomothetic	E1: no differences between conditions. E2: no differences between coping strategies. E2: values increased pain tolerance in both coping strategies.
Sierra *et alii* (2016)	80	Four conditions combining Common physical properties with/without Meaning	Helping people suffering from chronic pain. Identifying a personal value. Linking doing the task with the personal value. Swamp metaphor.	Yes	Cold water task	Pain tolerance: Time with the hand in cold water + Discomfort: VAS	Idiographic + Nomothetic	Common physical properties plus meaning increased pain tolerance.

Note: VAS= Visual Analog Scale, used to measure how displeasing was the aversive stimulus.

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Table 1 (cont.). Meaning identified by the Participants to Reduce Avoidance.

Authors	Sample (adults)	Experimental Conditions	Motivational Protocol (ACT coherent)		Avoidance Task		Data analysis	Results
			Content	¿Includes Distancing?	Aversive Functions	Measure		
López-López *et alii* (2017)	38	Full motivational distancing /v/ Partly distancing /v/ No intervention	Identifying a personal valued area where they experienced troubles. Considering experimental tasks as training skill for improving in the personal area. Directing the attention to the connection between doing the task and their value.	Yes	DBIG + Spinning the participant's chair	Pain tolerance: Correct responses in PASAT-C + Discomfort: VAS	Idiographic + Nomothetic	Full motivational distancing protocol increased cognitive performance in PASAT-C.
Criollo *et alii* (2018)	80	Four conditions combining Common physical properties with/without Multiple examples	Helping people suffering from chronic pain. Identifying a personal value. Linking doing the task with the personal value. Swamp metaphor	Yes	Cold water task	Pain tolerance: Time with the hand in cold water + Discomfort: VAS	Idiographic + Nomothetic	Common physical properties plus meaning increased pain tolerance, with and without multiple metaphorical examples.
Smith *et alii* (2019)	32	Motivational Intervention /v/ Reading Legislative Content	Attending Funeral. Writing about values. Ranking values. Linking doing the task with the personal value. Swamp metaphor.	No	Cold water task	Pain tolerance: Time with the hand in cold water + Discomfort: VAS	Idiographic + Nomothetic	Personal Values condition increased the immersion time even in cases when pain perception increased.
Pendrous *et alii* (2020)	89	Four conditions combining Common physical properties with /without Meaning	Identifying a personal value Linking doing the task with the personal value Swamp metaphor	Yes	Cold water task	Pain tolerance: Time with the hand in cold water + Discomfort: Borg CR-10	Nomothetic	Pain tolerance increased from pre to post regardless of experimental conditions
Hebert *et alii* (2021)	200	Meaning + tickets /v/ Tickets /v/ No-intervention	Identify a personally important charity. Write about why the charity is meaningful. Getting donations to the charity.	No	Disgusting objects	Pain tolerance: Number of Approach Behaviors + Discomfort: VAS	Nomothetic	Meaning increased the number of approach behaviors to disgusting objects.
Ramirez *et alii* (2021)	80	Motivational Intervention /v/ Reading Neutral Content	Helping people suffering from chronic pain. Identifying a personal value. Linking doing the task with the personal value. Swamp metaphor.	Yes	Cold water task	Pain tolerance: Time with the hand in cold water + Discomfort: VAS	Idiographic + Nomothetic	Participants in the self-plus-elaboration condition had the greatest increase in pain tolerance.
Flynn *et alii* (2022)	200	Meaning + tickets /v/ Tickets /v/ No-intervention	Identify a personally important charity. Write about why the charity is meaningful. Getting donations to the charity.	No	Disgusting objects	Pain tolerance: Number of Approach Behaviors + Discomfort: VAS	Nomothetic	Meaning increased the number of approach behaviors to disgusting objects.

Notes: VAS and Borg CR-10 were used to measure how displeasing was the aversive stimulus; DBIG= Drunk Busters Impairment Goggles, used to simulate the effect of a blood alcohol level of 0.8-1.5; PASAT-C= Paced Auditory Serial Addition Task-Computerized.

condition, participants had to identify a charity that they care about and write for 5 minutes about why this charity was meaningful to them. In addition, they were told that the tickets they win from each approach during the task would mean money donated to their chosen charity. Nomothetic data showed that the condition of personal values plus tickets had the greatest statistically significant effect in promoting approaching behaviors toward disgusting stimuli.

A subsequent experiment (Flynn & Hebert, 2022) conducted a replication of the study by Hebert *et alii* (2021). Their nomothetic findings mirrored the original study, indicating that the personal values plus ticket condition led to a significant increase in approaches toward disgusting stimuli compared to the other conditions. Neither Hebert *et alii* (2021) nor Flynn *et alii* (2022) provided idiographic data, limiting the ability to fully assess potential data variability.

Furthermore, in the clinical work, ACT therapists combine other strategies with personal values, such as psychological distancing. This combination could result in a different effect. Twelve experimental analogs, extracted from eleven papers, studied the combined effect of acceptance/defusion along with a personal value. Four of them focused on psychological distancing protocols while including personal meaning. Four focused on studying the differences between combining both strategies compared to applying one alone. The remaining four experiments delved into various metaphorical elements while incorporating the motivational context of personal values and the coping strategy of psychological distancing. The experimental tasks included stimuli with aversive functions, such as electric shocks, cold water, a video showing displeasing images, and goggles simulating the effects of having a blood alcohol level of 0.8 to 1.5.

Regarding the experiments focused on *psychological distancing protocols combined with personal meaning*, Gutiérrez, Luciano, Rodríguez, and Fink (2004) studied the effect of two different protocols for coping with pain induced by electric shocks. The authors established a general meaningful context, linking the behavior of continuing with the task and receiving shocks, with the meaning of helping people who suffer from chronic pain, and with an important life goal for the participants. Participants were randomly assigned to two experimental conditions: (a) meaning with acceptance, with the aim of disconnecting pain-related thoughts and feelings from literal actions; (b) meaning with distraction, with the aim of changing the attention from pain-related thoughts and feelings to pleasant ones. Both the idiographic and nomothetic data revealed that the acceptance condition led to a greater increase in pain tolerance, especially when the perception of pain was greater.

A subsequent experiment (Páez Blarrina *et alii*, 2007) carried out a continuation study to the previously mentioned experiment by Gutiérrez *et alii* (2004), aiming to replicate and expand upon its findings. The motivational context and the kind of aversive functions remained the same. The main difference with Gutiérrez et alii (2004) was that in the acceptance protocol, pain-related sensations were not only disconnected from literal actions but also established in coordination with valued actions. The other condition employed a suppression protocol, instead of a distraction one, and established an opposition relation between pain-related sensations and valued actions. Both the idiographic and nomothetic data showed that both conditions increased pain tolerance. However, only the acceptance condition demonstrated an increase in pain tolerance when the perception of pain was greater.

Another experiment (Luciano *et alii*, 2014) studied the impact of an acceptance/defusion protocol combined with the motivational context of personal values on reducing

generalized avoidance. The stimuli with aversive functions employed were electric shocks. The authors provided a general motivational context for all experimental conditions, instructing participants that they could earn money if they did not avoid the shocks. The ACT condition consisted of a defusion and personal values. Idiographic and nomothetic data showed that the ACT condition demonstrated the greatest effect on diminishing avoidance and increasing the number of shocks received.

The last experiment from this subgroup of studies (López López & Luciano, 2017) examined the effect of a defusion protocol on enhancing cognitive performance in two demanding attentional tasks that included the aversive functions of dizziness. The aversive functions were generated using a pair of drunk goggles that simulate the effect of a blood alcohol level between 0.8 and 1.5 (Drunk Buster Impairment Goggles), along with spinning the participant's chair. Participants were randomly assigned to three experimental conditions similar to those from the initial work by Luciano *et alii* (2011): (a) defusion with deictic frames; (b) defusion with deictic and hierarchical frames; (c) non-intervention. Regarding the motivational context, all participants were told that doing the experimental task was like training the skills needed to improve in their personal area. Additionally, participants in the second defusion protocol were also instructed to focus on how meaningful their actions were in relation to their personal values. The ideographic data showed that the non-intervention condition had greater variability between pre- and post-tests. Furthermore, both the ideographic and nomothetic data showed that there were no differences on the performance in one of the attentional tasks ("sorting straws"), but there were differences in the other task (PASAT-C). In PASAT-C, the nomothetic data revealed that the defusion protocol incorporating all elements showed a statistically significant improvement in cognitive performance compared to the other two conditions.

Regarding the experiments focused on *investigating the differences between combining values and distancing strategies compared to applying one alone*, the experiment by Páez Blarrina, Luciano, Gutiérrez Martínez, Valdivia, Ortega, & Rodríguez Valverde (2008) continued the research line from Gutiérrez *et alii* (2004) and Páez Blarrina et alii (2007) (and also McMullen *et alii*, 2008; which will be described in a later section). They studied the motivational effect of personal values on increasing pain tolerance, testing differences between including, or not, acceptance or suppression coping strategies. The motivational context and the kind of aversive functions were the same as in the preceding experiments. The rules trained in the ACT-condition established a coordination relation between the pain-related sensations and the values actions. In the non-intervention condition, the rules trained established a relation of opposition. Besides, the difference with the mentioned experiments is that Páez Blarrina *et alii* (2008) tested the motivational effect on pain tolerance both before and after applying the coping protocols. Both idiographic and nomothetic data showed that the motivational effect alone (test I) produced a higher pain tolerance in the ACT condition than in the control condition. When the coping strategies were introduced, again, the ACT-condition showed a higher pain tolerance. Furthermore, the distraction plus meaning condition showed higher pain tolerance than the non-intervention condition.

Another experiment (Branstetter-Rost, Cushing, & Douleh, 2009) examined whether a personal values intervention could augment the effect of acceptance on pain tolerance. The experimental task employed a cold-pressor. Motivationally, the authors administered the VLQ questionnaire to identify a top-ranked personal value and link it with continuing with the task. Participants were randomly assigned to three experimental

conditions. The nomothetic results showed that the acceptance condition had a higher effect than the non-intervention, and the acceptance plus personal values condition had a higher effect than the other two conditions. No idiographic data were reported.

Lastly, the effect of various values protocols along with different coping strategies for pain induced by electric shocks was studied in the two experiments by Moore *et alii* (2016). Both experiments had the same four conditions. The nomothetic results of the first experiment revealed no differences between any conditions. In the second experiment, the authors altered the order of presentation of the motivational protocol, placing it right before the coping protocol. The nomothetic data showed no difference between the coping strategies. However, the values protocol encouraging to continue with the task despite the pain, increased pain tolerance regardless of being paired with acceptance or distraction. No idiographic data were reported.

In the category of experiments exploring different *metaphorical elements while including the motivational context of personal values and the coping strategy of psychological distancing*, Sierra, Ruiz, Flórez, Riaño Hernández, and Luciano (2016) investigated the impact of two variables on enhancing the effectiveness of a metaphor to promote psychological flexibility: (a) including common physical properties between the individuals' experience and the metaphor; (b) specifying appetitive augmental functions in the metaphor content. For the augmental functions, participants were asked to think about something of great importance to them and that personal value was linked to the task. The experimental task consisted in the cold-pressor. Participants were randomly assigned to four conditions varying the mentioned variables (common physical properties x specifying augmental functions). Both the ideographic and nomothetic results showed that both variables increased pain tolerance.

A subsequent study (Criollo, Díaz Muelle, Ruiz, & García Martín, 2018) extended the research conducted by Sierra *et alii* (2016) and investigated the impact of using different metaphors as part of a multiple exemplar training, as well as the inclusion or exclusion of common physical elements in the metaphor. The motivational operations and experimental task were the same as in Sierra *et alii* (2016). Both ideographic and nomothetic results showed that including common physical elements in the metaphor increased pain tolerance, no matter whether only one metaphor was included or three of them.

Another experiment (Pendrous, Hulbert-Williams, Hochard, & Hulbert-Williams, 2020) sought to replicate the results reported by Sierra *et alii* (2016), exploring the impact of altering the same two elements of the metaphor to enhance its effectiveness in a pain tolerance task. The experimental task consisted in the cold-pressor, with the difference that the temperature of the water was colder. They also included some other important changes in the presentation of the protocol, as noted by Ruiz *et alii* (2020). They changed the words used to ask participants to identify their personal value, and the pauses they included in the protocol were too brief. The nomothetic results showed that there was an increase in pain tolerance from pre to post measures, regardless of experimental conditions. They did not report ideographic data on changes in pain tolerance.

Ramírez, Ruiz, Peña Vargas, and Bernal (2021) continued the investigation initiated by Sierra *et alii* (2016) and Criollo *et alii* (2018), focusing on the impact of altering two elements of a metaphor to enhance its effectiveness in a pain tolerance task. In this case, they varied (a) whether the participant was the protagonist of the metaphor vs imagining a fictitious person (self vs other); (b) including pauses and cues for relational elaboration vs not including them (elaboration vs no elaboration). Both the ideographic

and nomothetic results showed that participants in the "self" plus elaboration condition had the highest increase in pain tolerance.

In addition to the impact of abstract values identified by individuals themselves, the behavior can be influenced as well by abstract motivations that are given by others, which might as well change avoiding functions. The next section will turn to this.

Four experiments utilized motivational interventions incorporating abstract reinforcing functions provided by the experimenters to the participants. A summary of these experiments can be seen in Table 2. In two experiments, participants were told to imagine that they wanted to become builders, and in the other two experiments, participants were told that their participation would help people suffering from chronic pain. The experimenters did not ask the participants to say whether these motivations were relevant to them or not. As in the previous section, experiments are divided into two groups based on explicitly targeting, or not, psychological distancing.

Two experiments extracted from one paper (Sakano, Ohya, & Muto, 2022) studied the effect of a motivational protocol alone, without explicitly combining it with other ACT processes. In both of them, participants were told to imagine that they wanted to become builders and that they had to pass a test to become builders. The test consisted in building blocks while having the non-dominant hand in cold water. The intervention protocol of both experiments put the pain of the cold water in equivalence to the pain of a construction accident. In the first experiment, all participants in the motivational condition had to say aloud the behaviors they identified as acting in accordance with being a builder. Nomothetic results showed that the motivational condition led to a statistically significant increase in pain tolerance compared to the non-intervention group. In the second experiment, the authors divided the motivational condition into two separate groups: (a) motivational condition equal to the one from the previous experiment; and (b) motivational condition without saying aloud the specific behaviors (no-declaration condition). The nomothetic results revealed that the no-declaration

Table 2. Experiments with Meaning Given by the Experimenters to Reduce Avoidance.

Authors	Sample (adults)	Experimental Conditions	Motivational Protocol (ACT coherent)		Avoidance Task		Data analysis	Results
			Content	¿Includes Distancing?	Aversive Functions	Measure		
McMullen *et alii* (2008)	80	Four Conditions combining Full x Brief x ACT x Distraction	Helping people suffering from chronic pain. Doing the task was like earning money to support their family.	Yes	Electric shocks	Number of electric shocks received + Pain perception VAS	Nomothetic	ACT-experiential increased pain tolerance. Both ACT protocols decreased pain believability.
Gil Luciano *et alii* (2017)	30	Full motivational distancing /v/ Partly distancing /v/ No-intervention	Helping people suffering from chronic pain.	Yes	Cold water task	Pain tolerance: Time with the hand in cold water + Discomfort: VAS	Nomothetic	Both defusion protocols increased pain tolerance. Defusion protocol with deictic plus hierarchical frames showed a higher pain tolerance increment than with deictic frames alone
Sakano et alii (2022) (two experim.)	E1: 40 E2: 53	Meaning + tickets /v/ Tickets /v/ No-intervention	E1 and E2: Imaging you want to be a builder. E1 and E2: Imaging the task is an exam for becoming a builder. E1 and E2: Declaring what you want to do in the task as a builder.	No	Cold water task	Pain tolerance: Time with the hand in cold water + Willingness: VAS	Nomothetic	(E1) Meaning increased pain tolerance. (E2) Meaning without declaration increased pain tolerance.

Notes: VAS= Visual Analog Scale, used to measure how displeasing was the aversive stimulus.

condition was the one that led to a statistically significant increase in pain tolerance compared to the non-intervention group. No ideographic data were reported.

Furthermore, the effect of the abstract and given meaning could be different when used in combination with other clinical ACT strategies. The next two experiments focus on acceptance interventions that included abstract and given motivations. The motivational operations of these two experiments consisted in saying to participants that their participation was going to help people suffering from chronic pain. The aversive functions employed were electric shocks and cold water. Participants were told that the pain derived from this stimulation was like the pain that people with chronic pain experience on different occasions.

The first experiment (McMullen *et alii*, 2008) continued the research of Gutiérrez *et alii* (2004) and Páez Blarrina *et alii* (2007). They varied the kind of exercises used in the protocols for coping with pain induced by electric shocks, and how the instructions were presented. Participants were randomly assigned to five conditions: (a) ACT-experiential; (b) ACT-instructional; (c) distraction-experiential; (d) distraction-instructional; and (e) non-intervention. The difference between the experiential vs. the instructional conditions was that the former trained the coping skills (either acceptance or distraction) using an experiential exercise plus a metaphor, while the latter only instructed how to apply the coping strategy. The two experiential conditions included the same motivational context, where participants were told that their participation was going to help people suffering from chronic pain. Additionally, participants were told to imagine that doing the task while receiving shocks was like earning money to support their family while suffering the chronic pain. The nomothetic results revealed that the ACT-experiential was the only condition with a statistically significant increment in pain tolerance. Regarding pain believability, idiographic data showed that most of the participants in both ACT protocols continued with the task even when pain perception increased.

The last experiment (Gil Luciano, Ruiz Valdivia Salas, & Suárez Falcón, 2017) examined the effect of two different defusion protocols on promoting psychological flexibility by altering the avoidance functions of stimuli with aversive functions. They employed the cold-pressor task and a video displaying different aversive images. Participants were randomly assigned to the three conditions following the study by Luciano *et alii* (2011): (a) defusion based on deictic frames; (b) defusion based on deictic plus hierarchical frames plus specifying a motivational context; (c) non-intervention. Nomothetic results showed that both defusion protocols increased pain tolerance. Additionally, the defusion protocol that included both deictic and hierarchical frames was superior to the one that only included deictic frames. No ideographic data were reported.

Taking all the experimental analogs together, seventeen out of nineteen motivational interventions reduced avoidance, in the form of increasing pain tolerance, even when in nine of the seventeen experiments the discomfort did not change. In three of those seventeen experiments, the discomfort decreased, and in the other five discomfort data was not reported. Figure 2 displays a summary of changes in pain tolerance and discomfort as a result of the effect of the main active experimental conditions.

Discussion

The present review aims to review empirical data on the role of personal meaning in reducing avoidance to discomfort. The selected experiments were experimental analogs that had direct measures of avoidance. To generate avoidance, the experiments

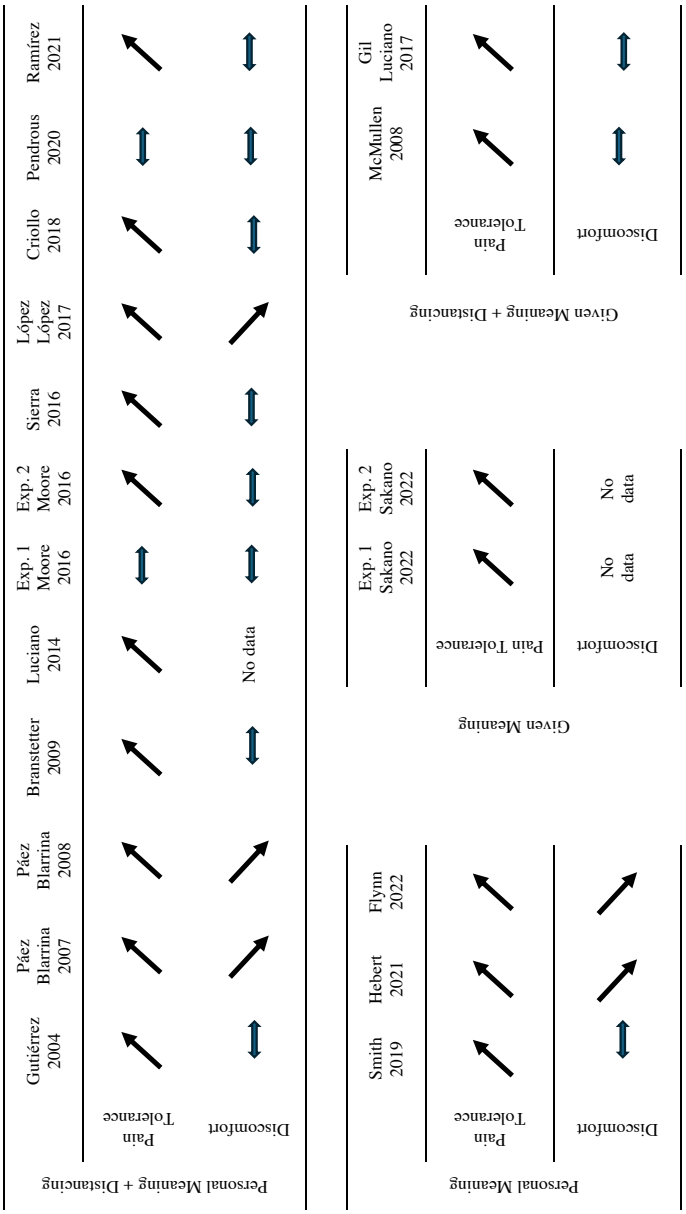

Figure 2. Results of the main/active experimental conditions. (Notes: Arrows indicate whether the active experimental condition showed changes; Arrows directed towards the upper-right corner signify an increase -e.g., greater pain tolerance; Horizontal arrows denote no change; Arrows directed towards the lower-right corner signify a reduction -e.g., decrease in discomfort; Five experiments did not use or report measures of discomfort).

used different stimuli with aversive functions such as electric shocks, cold water, and disgusting objects, among others. All experiments prepared interventions that included, in one way or another, motivational operations that gave value to continue with the experimental task while contacting with the discomfort. In general, the results of the reviewed experiments showed that the motivational interventions achieved the desired effect, reducing avoidance and obtaining an increase in outcomes such as pain tolerance and task performance.

More specifically, the results from three experiments (Flynn & Hebert, 2022; Hebert *et alii*, 2021; Smith et *et alii*, 2019) show that focusing on the motivational effect of personal values alone, without explicitly incorporating psychological distancing, effectively reduces avoidance of aversive stimuli typically avoided by humans. This motivational effect is extremely relevant, considering that engaging in valued behaviors may entail contact with aversive functions. Furthermore, the findings of the twelve experiments combining personal meaning with distancing (Branstetter-Rost *et alii*, 2009; Criollo *et alii*, 2018; Gutiérrez *et alii*, 2004; López López & Luciano, 2017; Luciano *et alii*, 2014; Moore *et alii*, 2015; Páez Blarrina *et alii*, 2007; Páez Blarrina *et alii*, 2008; Pendrous *et alii*, 2020; Ramírez *et alii*, 2021; Sierra *et alii*, 2016) allow to convey three main conclusions: (1) Psychological distancing protocols that link discomfort with personal values promote value-oriented behaviors, even in the presence of discomfort. (2) Combining values with acceptance, as well as adding acceptance to values, appear to enhance their individual effects. (3) It seems that the way in which the metaphor is implemented in the intervention influences its effect, with evidence suggesting that including common physical properties, adopting a protagonist perspective, and providing sufficient content and pauses enhance the combined effect of values plus psychological distancing.

Regarding the experiments using an abstract motivation given by others, the findings from the protocols using the motivation alone (Sakano *et alii*, 2022) show that an abstract motivation given by others could function as a value and help to increase pain tolerance. However, it remains unclear whether the public expression of specific values-oriented behaviors helps or not to increase the motivational effect, since doing so was beneficial in experiment 1 but was not in experiment 2. The findings of the protocols combining a given meaning with distancing (Gil Luciano *et alii*, 2017; McMullen *et alii*, 2008) show that acceptance interventions exhibit a greater impact when they incorporate experiential exercises and when they target deictic plus hierarchical frames, along with specifying motivational functions.

Moving forward from the main findings of the experiments, the discussion of the review addresses four main related topics: (a) how the motivational interventions were implemented; (b) importance of studying meaning in the context of avoidance; (c) relations between personal meaning and psychological distancing; and (e) understanding and studying meaningful actions as behavioral patterns.

Regarding how the motivational interventions were implemented, all the experiments used abstract motivations and followed two similar steps. The first step involved identifying an abstract meaning and the second one involved connecting such abstract meaning with the task that required participants to contact discomfort. With respect to the first step, experiments can be classified into two groups, motivational interventions that asked participants to identify themselves a personal meaning, and motivational interventions where experimenters provided the abstract meaning to participants. In this latter case, the general motivational context was given by the experimenters without assessing how meaningful that motivation was to participants. For instance, saying something like "completing the experiment will be of help for people suffering with chronic pain". This kind of external meaning could have given more credibility to those experiments, and thus increased the motivational effect, since the discomfort of the experimental task could have easily been connected with a real discomfort, as the one that people with chronic pain experiences. The experimental designs do not allow examining differences on the motivational effect between a personally identified meaning and a meaning provided by another person.

With respect to the second step, most of the motivational interventions used the swamp metaphor to connect the abstract meaning with the uncomfortable sensations of the task. This metaphor consisted in asking participants to imagine that they had to cross a really cold swamp in order to reach their personal meaning. In the case of the experiments in which the cold pressor task was used, the cold water from the cold pressor was put in equivalence with the cold water of the swamp, and keeping the hand in the cold pressor was put in equivalence with swimming toward the personal meaning. Other experiments instructed the relation between the meaning and the task; for instance, saying that doing the task was like doing the identified meaningful actions.

Some details of how the motivational protocols were implemented seem to affect their effectivity. For example, the results from the experiments by Moore *et alii* (2016) might have showed a time effect. While in experiment 1 the motivational intervention did not increase pain tolerance, in the second, when the motivational intervention was presented closer in time with both the coping protocol and the experimental task, pain tolerance increased when a high personal meaning was implemented. Other examples are the experiments that aimed to study the effect of varying different elements of the metaphor. Their results indicate that including common physical properties, a protagonist ("me"-deictic-) perspective and enough content and pauses helped to increase the combined effect of personal meaning and psychological distancing (Criollo *et alii*, 2018; Ramirez *et alii*, 2021; Sierra *et alii*, 2016), compared to when there were not enough pauses and cues to generate the desired motivational function (Pendrous *et alii*, 2020; Ramirez *et alii*, 2021; Ruiz *et alii*, 2020). Similar results were found in McMullen *et alii* (2008), which found that experiential exercises worked better than just providing instructions.

A final example is the experiment by Valdivia, Luciano, and Molina (2006), which results revealed a desliteralization effect. Although it was not included in the present review because it did not study the effect of meaning on avoidance, the desliteralization effect they found is directly relevant with the discussed topic. They used a motivational protocol that had previously shown to be effective and changed the pronunciation of the syllables of the words. When they prolonged the pronunciation of the last syllables, in a similar manner as in the "milk exercise" (Hayes *et alii*, 1999), the protocol lost its motivational effect. In sum, it seems that including motivational operations per se is not enough; instead, we need to pay close attention to how the personal meaning is included and implemented in therapy.

All the reviewed experiments investigated how the implementation of the motivational protocol affected avoidance, measured as pain tolerance. This is of upmost importance, because it is the only way to isolate the motivational effect of personal meaning from the motivational effect of a non-meaningful pleasure. When a person approaches something pleasing, we cannot assure whether that action entails some meaning or not. However, when a person approaches aversive functions because of a specific motivation, that motivation functions as a personal meaning that influences his behavior over the aversive functions. Hence, the effect of personal meaning should be tested as to how it can change avoiding behaviors into approaching ones, as it was done in all the experiments (e.g. Hebert *et alii*, 2021; Smith *et alii*, 2019).

When a person starts approaching something that provokes him discomfort, he is doing more than stopping avoiding, but is doing a specific action while contacting the discomfort. For example, a person with social anxiety who goes to spend time with his friends has to do more than just attending the meeting but has to behave coherently with the kind of social relations he wants to have. Reducing avoidance is about carrying

on important tasks even when the discomfort is present. A good experimental analog of this phenomenon is the experimental task by Gutiérrez *et alii* (2004), where participants had to complete an identity matching to sample while they accepted to receive electric shocks. The same task was employed in Páez Blarrina *et alii* (2007), McMullen *et alii* (2008) and Páez Blarrina *et alii* (2008). Other good examples are López López & Luciano (2017) and Sakano *et alii* (2022), which used a "sorting straw task" plus the PASAT-C or a "building blocks task", respectively, along with presenting the aversive functions.

Regarding the relationships between personal meaning and psychological distancing, it seems that the repertoire of reducing avoidance being guided by a personal meaning is closely related with psychological distancing. When the person is not avoiding and is contacting the discomfort while doing the meaningful action, the person is making use of both kinds of repertories: (a) he is behaving guided by his personal meaning; and (b) he is behaving accepting the presence of discomfort, without avoiding it. This raises one question, is it possible to study personal meaning and psychological distancing in a separate fashion? First, in this regard, all experimental studies, although not always explicitly, included some elements of psychological distancing along with their explicit inclusion of motivational functions. Let us take the example of Smith *et alii* (2019). They did not explicitly targeted distancing; however, they used the swamp metaphor in a similar manner as it was used in other experiments which explicitly targeted psychological distancing (Gutierrez *et alii*, 2004; Páez Blarrina *et alii*, 2007; McMullen *et alii*, 2008; Páez Blarrina *et alii*, 2008). In their metaphor, crossing the cold water, and experiencing and accepting the discomfort was a requirement to act in accordance with the meaning. Second, the reviewed experimental studies that focus on psychological distancing also included a motivational element for participants to make sense of exposing themselves to discomfort. The personal meaning is the reason why a person would be willing to experience discomfort instead of avoiding it.

These two kinds of repertoires seem to complement each other and the results of the reviewed experiments support this. The reviewed results indicate that explicitly targeting both components shows a greater effect than only targeting one of them (Branstetter *et alii*, 2009; Páez Blarrina *et alii*, 2008). Test 1 in the experiment by Páez Blarrina *et alii* (2008) showed that the motivational condition had higher pain tolerance than the non-intervention condition. Additionally, test 2 explicitly targeted and added psychological distancing and this condition showed a further increase in pain tolerance. Branstetter *et alii* (2009) found something similar in their experiment. The distancing condition had higher pain tolerance than the condition without it and, in turn, the condition that combined distancing and meaning was the one that had the greatest effect.

Lastly, it seems that distancing is a better complement to personal meaning than other coping strategies such as distraction. Despite personal meaning showed to be effective in increasing pain tolerance in control conditions were distraction was taught as a coping strategy (Gutiérrez *et alii*, 2004; Moore *et alii*, 2015; Páez Blarrina *et alii*, 2007; Páez Blarrina *et alii*, 2008); however, when the pain was high only the combination of meaning with distancing showed an increase in pain tolerance (Gutierrez *et alii*, 2004; Páez Blarrina *et alii*, 2007; Páez Blarrina *et alii*, 2008). To see more recent information about values see LeJeune & Luoma (2023), about cognitive defusion see Ruiz, Gil Luciano, and Segura Vargas (2023) and about acceptance see Merwin, Moskovich, Pisoni, Freeman, and Onnink (2023).

The goal of clinical interventions based on personal meaning and psychological distancing is that the person starts doing meaningful actions even in occasions where

he would typically show avoidance. These meaningful actions must occur frequently in time before the person starts feeling satisfied with his life, they must be the main feature that describes the pattern of his behavior. In this regard, experiments studying the effect of personal meaning could employ tasks including several trials as an analogy of a behavior occurring across time, allowing seeing how constant or variable is the studied behavior. However, this is not the case for many of the reviewed experiments. Many of them used the cold-pressor task, which consisted in immersing the hand in cold water. This measure does not allow one to observe behavioral patterns, but to observe a specific and continued behavior. A different case is the experiments that used electric shocks and where the participants had different opportunities to receive or avoid the shock, thus allowing observing consistency across time.

Furthermore, behavioral patterns refer to functional classes of behavior and, thus, entail different behaviors that have acquired the same functions both directly, through contingencies, and indirectly, through verbal derived relations. An experimental analog of this would be to have a task where different stimuli from the same functional class are tested. In this regard, only one experiment (Luciano *et alii*, 2014) included a task where both direct and derived stimuli were tested. Lastly, specific behavioral patterns occurring in natural contexts occur in contexts where the person could follow other patterns. When we behave in our everyday life, we have different options available and choose the one that is preferable for us. Having different options available could alter the option we choose, since a chosen option might not be chosen when another preferable possibility arises. An experimental analog of this would be to have a task where participants could choose between stimuli belonging to different functional classes. For example, as in the case when a person chooses to go to enjoy in the cinema instead of spending the evening looking after a grandmother with Alzheimer that does not remember him. In this regard, none of the experiments gave participants the possibility, in addition to continuing the task with the discomfort, to continue the task with something pleasant but not meaningful.

One of the strengths of the data included in the present systematic review is that the data come from experimental analogs. Experimental analogs try to reproduce in the laboratory the specific natural phenomenon that the scientist wants to study. Experimental analogs allow scientists to better control the phenomenon of study, increasing the validity of the functional relations observed. Another strength is that these experimental analogs used direct measures of avoidance and of approach behaviors to aversive functions. The measured behavior corresponded directly to the behavior aimed to study, which shows more validity when compared to the use of questionnaires.

One limitation of the reviewed data is that most of the experiments conducted a nomothetic analysis. Nomothetic analysis consists in analyzing the data from all participants together, as if they were the same datum. It uses statistical procedures that overlook individual variability and complicate to track and relate specific variations in the context with specific variations in the behavior. In contrast, idiographic analysis allows a closer examination of how the contextual variables of the experimental analog are influencing the behavior under study. In fact, idiographic analysis is the one proposed and recommended by the ACBS task force, due to its strengths (Hayes *et alii*, 2021). Furthermore, no studies assessed the rules that participants were deriving as they were completing the experiment. This information is crucial because it allows us to better discriminate the reason why the participants did what they did and the functions that influenced their behavior.

Regarding the limitations of the present review, it does not include experiments focusing on psychological distancing that did not explicitly state they included a motivational operation. Thus, part of the relevant data might be missed. However, this was beyond the intended scope of the present systematic review, and for the sake of space, the review focused more on experimental analogs including explicit motivational manipulations. In addition, the review does not include a meta-analysis of the results. Therefore, it is hard to compare the magnitude of the results from one experiment to another and to give a cumulative effect of personal meaning.

As a main conclusion, there is enough information to assert that interventions explicitly focusing on personal meaning can reduce avoidance to aversive functions when they are linked to meaningful actions. In other words, personal meaning can increase the frequency of meaningful actions even when they are accompanied by discomfort. This main finding can be readily generalized to clinical settings. As presented in the introduction, many psychological problems and suffering are derived from avoiding discomfort at the expense of the life the person wants to live. People in their daily lives face discomfort as part of many meaningful activities and using personal meaning can be of great help for clinicians to promote more flexible behavioral patterns and help clients to act in a way that allows them to be prouder and more satisfied with themselves and their lives.

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