

# Designing compassionately for situational anxiety

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## ABSTRACT

People and companies are gaining extended knowledge of what design can do, and the value that lies within a well-designed service, product, interface or strategy. Anxiety is highly researched amongst psychologists yet somewhat unexplored from a design perspective. As one of the most common mental health disorders throughout the world it is a topic worth exploring from several points of view, and maybe with an unconventional pair of eyes. This article sheds light on some of the methods that already exists within both the field of design and the field of psychology. It enhances the links and similarities between them, and how they can be used to design compassionately with the goal of relieving situational anxiety.

**KEYWORDS:** Design, compassion, empathic design, emotional design, co-design, anxiety, psychology, exposure therapy, sensorimotor psychotherapy, TPD4505

## 1. INTRODUCTION

The goal of this article is to explore the topic of designing compassionately to help people in specific situations where they experience anxiety. The ability to be compassionate is something that comes natural to some people whereas others need to practice (Goetz, Keltner, & Simon-Thomas, 2010). To be able to design for mental health it is crucial to both empathize with the user and be emotionally connected to the challenge. Therefore, designing compassionately seems like a good approach when exploring how to help people with situational anxiety.

Anxiety is widely researched from a psychological point of view, as well as increasingly spoken of amongst non-psychologists. The fact that 14 % of the EU population are experiencing some kind of

anxiety disorder every year (Wittchen et al., 2011), shows that this topic relates to a large group of people. It is easy to find articles about different therapy methods or techniques that are tried out on a small group of participants, but it is seldom taken further to make something that can reach more people than just the test subjects. This is where design can build bridges between the research done and the people that might make use of it but never gets to know about it. One of the privileges of being a designer is the task of being an expert in *not being an expert*. As constantly curious beings designers use different methods to hover above a problem trying to see the big picture, while at the same time diving in and picking apart complex pieces of information. Thus addressing anxiety from a design perspective is interesting and an unexplored topic.

## 1.1 Applied methods

The approach was to read literature on *compassion, empathic design, emotional design, and co-design*, in addition to looking at the characteristics of each method and how they overlap. Then followed reading literature on anxiety, phobias and the human brain, before interviewing three psychologists to get input on which treatment methods that could be relevant to look into. This led to reviewing exposure therapy, the practice of sensorimotor psychotherapy and a bit about doing therapy in groups.

This review article is going to dive into the different topics before merging them in the end. This is done by first looking into the act of designing compassionately and then the term anxiety and treatments related to it, to explain what each of them mean and how they are defined and used in this article. Then follows the different fields and how they intertwine, what similarities exists and what parallels can be drawn between design and psychology. Finally the article is rounded off with a reflection around how the different methods can contribute to each other, and why it is important to have a certain mindset when designing for people and their emotions.

## 2. COMPASSION

There are several definitions of compassion, and many of them build on each other. Such as Dalai Lama's "An openness to the suffering of others with a commitment to relieve it" (Dalai Lama, 1995, as cited in Strauss et al., 2016), Kristin Neff's "Being touched by the suffering of others, opening one's awareness to others' pain and not avoiding or disconnecting from it, so that feelings of kindness towards others and the desire to alleviate their suffering emerge. It also involves offering non-judgmental

*understanding to those who fail or do wrong"* (Neff, 2003, as cited in Strauss et al., 2016), and Pommier's "Compassion involves three elements: Kindness, mindfulness, and common humanity" (Pommier, 2010, as cited in Strauss et al., 2016). Based on these definitions, compassion in this article is defined as *empathy in action*.

To map compassion out clearer it might be thought of in a hierarchically way. Imagine that your friend walks in a puddle and her left shoe gets completely soaked. To show sympathy for your friend you tap her shoulder and tell her that you feel sorry for her. If you have empathy for her you are able to put yourself in her situation and really feel how uncomfortable it is to have a wet shoe. Showing compassion because you are able to feel your friends situation means that you take her shoe off, go to the nearest house and ask if you can borrow a hairdryer to dry it for her. Hence - empathy in action.

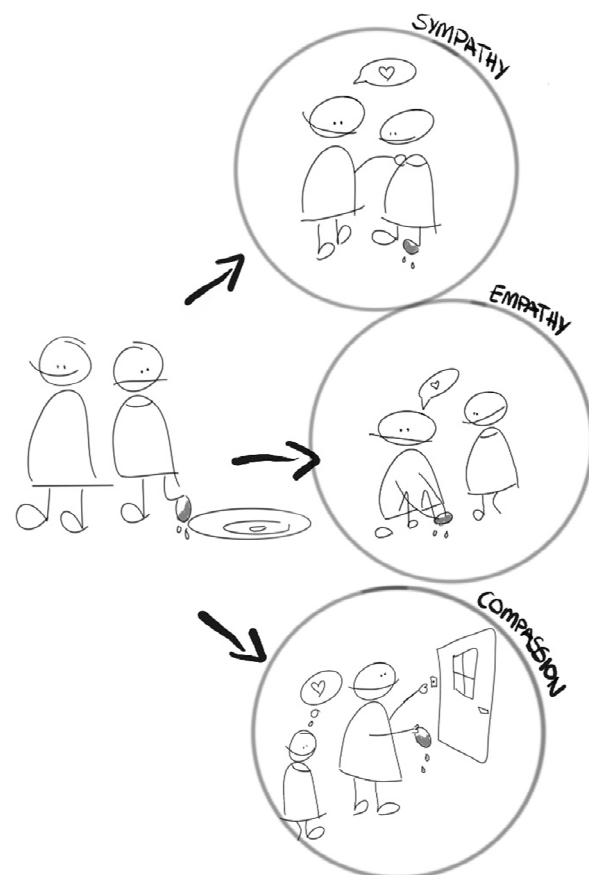


Figure 1: Illustrating compassion (Sivertsen, 2018a).

### 3. DESIGNING COMPASSIONATELY

Most design methods revolve around the human being. This chapter addresses three relevant methods and provides a definition of each of the three: empathic design, emotional design and co-design. Their relevance is justified by the way they together enable the designer to have a compassionate mindset. The methods are assembled and compared with the help of a table before the chapter is rounded off.

#### 3.1 Empathic design

To be an empathic designer is to have the ability to imagine oneself in the situation of the user (Koupric & Visser, 2009). This is done by observing and interviewing in such a way that the designer can communicate the user's experience. The user can then confirm or correct the perceived impression, and even get surprised by having it put to words. *"People are generally highly unreliable reporters of their own behavior"* (Norman, 2004). Empathic design emphasizes the importance of observation to uncover the users actual needs. As designers we need to observe behavior and ask questions to find pain points and opportunities that are not already obvious. With this approach the users are involved in the development of a product, even if they are not aware of it at the time.

#### 3.2 Emotional design

Emotional design differs between three different levels of processing; visceral, behavioral and reflective. Each of which demands different kinds of design. Visceral design refers to appearance, your first impression of a product is on a visceral level. Behavioral design also takes how the product feels and behaves into account. Reflective design is about the thoughts you are left with after the interaction. How did the product make you feel? What is your impression after

interacting with it? (Norman, 2004). One of the key elements in emotional design is that the designer is digging into how the user might be emotionally affected by the to-be-product, not only the situation or problem that needs to be solved. In this way emotions related to the situation or problem might be replaced with new and preferable emotions related to the product.

#### 3.3 Co-design

Co-designing is about bringing the user to the table and involving them in the whole process. When doing it this way the users tend to feel ownership of the solution because they can recognize their own contributions in the final product (Rijn & Stappers, 2008). This way of designing is often effective when new internal services or procedures within a group is established, because creating it together makes everyone want to put it to use. Co-designing can also spark creative thinking, because the users are guided by a designer to think freely around a well-known topic. The designer here works as a facilitator as well as being a part of the co-design group. This way the designer can steer the discussion onto fruitful topics and away from stagnation.

#### 3.4 Combining the methods

According to Seshadri and Reid, there are five philosophies and techniques that must be present to be able to design compassionately. These are *Emotional design, User-centered design, Human-centered design, Empathic design* and *Co-design* (Seshadri & Reid, 2014). These are all valuable to reach a state of compassion for the user in various design scenarios. When looking into a topic like situational anxiety there are three methods that are relevant; Emotional design, Empathic design and Co-design. This is because they sufficiently overlap each other, which opens up for excluding Human- and User-centered design.

	Emotional design	Empathic design	Co-design
User involved in every stage	<b>Not necessarily</b>	<b>No</b>	<b>Mostly</b>
User provides feedback directly	<b>Not necessarily</b>	<b>Sometimes</b>	<b>Always</b>
Designer is directly sensitized to contexts	<b>Sometimes</b>	<b>Mostly</b>	<b>Sometimes</b>
Considers emotional impact on users	<b>Yes</b>	<b>Yes</b>	<b>Not necessarily</b>
Direct access to user and context required	<b>Not necessarily</b>	<b>Always</b>	<b>Always</b>

Figure 2: Table inspired by the findings of Seshadri and Reid (Seshadri & Reid, 2014)

Figure 2 is inspired by Seshadri and Reid’s summary, and as shown these three varieties of design methods overlap in such a way that little is left out when all of them are explored. Therefore, by combining them one can design compassionately.

The perfect outcome of this would be a product that the user loves on all three levels of processing: visceral, behavioral and reflective. That also fits their needs when they need it even if they did not know they needed it in the first place. Additionally, if they take part in the process of developing the product, they would also feel ownership and take pride in it, which again would make them more attached to the product on a reflective level.

#### 4. ANXIETY

*“Anxiety is a response to an unknown threat, often associated with feelings of uneasiness. These anxiety disorders are derived from fear of what might or could happen and that is when problems arise. Fear on the other hand is the emotional response to a known threat.”* (McIvor, 2015)

Anxiety emerges from a small center in the brain called *amygdala*, this is where our survival mechanism has been toned and shaped for millions of years. When we encounter a situation that we are unfamiliar with, or that we experience as unsafe or insecure we get ready for *fight or flight*. In order to do so the brain summons all our energy into the big muscles, so we have a chance either to hit the hardest or to run the fastest. When amygdala is activated in situations that the rational part of our brain know as safe or at least not life threatening the state the body goes into is called anxiety (Berge & Repål, 2012).

Alongside insomnia and depression, anxiety is the most common mental health issue amongst Europeans (Wittchen et al., 2011). Additionally, anxiety disorders are often more chronic than both substance use disorders and affective disorders (Kessler et al., 1994). There are several different versions of it, spanning from generalized anxiety disorder and post-traumatic stress to situational anxiety and phobias. One seldom appears alone, and the level of experienced anxiety varies a lot from person to person and period to period (Grant

et al., 2005). Some people learn to live with it and some get rid of it. What they all have in common is the wish to manage life without being limited.

#### **4.1 Situational anxiety**

When a certain situation, or situations, triggers anxiety it is called situational anxiety (Beck, Epstein, Brown, & Steer, 1988). Imagine amygdala as a small room with one big panic-button and a button keeper. When anxious feelings are experienced often or in a recurring situation, the button keeper tends to be confused, pushing the button harder and harder every time. Eventually a loop of anxiety is created and appears every time one or several specific situations occur. This is what is called situational anxiety.

The experience of anxiety can manifest itself in one's body in several ways. Some might experience sweating, elevated heart rate or a dry mouth, while others might experience the surroundings as loud noise or get the feeling of not being able to breathe. Since anxiety is characterized as a mental disorder, these bodily sensations can be confusing for a person, especially prior to being diagnosed. No matter what situation that causes these symptoms they are often explained equally. Therefore a person that struggles with social situations and a person that is afraid of flying often talk about the same emotions and physical sensations. This is common even though the negative thoughts connected to the situation differs from person to person or situation to situation (Clark, 1999).

## **5. METHODS IN THERAPY**

There are numerous different treatment methods for anxiety (Wilson, 1984). Based on the findings in the previous chapters, two different methods are picked out as relevant

to look into. These are exposure therapy, because of its emphasis on unconscious behavior, and sensorimotor psychotherapy, because of its focus on connecting the sensorimotor, emotional and cognitive part of the brain. Thus, this chapter addresses the methods that have the strongest connection to the beforementioned design methods.

### **5.1 Exposure therapy**

In exposure therapy the patient is exposed to the object or situation that triggers anxiety. This is done under controlled circumstances (Abramowitz, Deacon, & Whiteside, 2011). The therapy is done by first understanding in which context the anxiety is triggered, what are the anticipated consequences of encountering the object or situation, and what strategies the patients use to reduce their anxiety. These strategies are called *safety behaviors* and they are often things that the patient do, say or think to make the situation more comfortable (Blakey & Abramowitz, 2016). Such behaviors tend to give a short-term reduction in anxiety. However, for there to be a reduction, anxiety must be present. Therefore, safety behaviors are negatively reinforced and develop into habits used to cope with situations that might provoke anxiety. When this happens, the natural system for dealing with feared objects or situations is prevented to do its job and the anxiety persists.

Identifying safety behaviors is an important part of exposure therapy (Abramowitz, 2013), and often something that the patient finds hard because the behavior itself is conducted unconsciously. A person that is afraid of balloons needs to be told that squinting eyes, covering ears and raising shoulders are all safety behaviors that needs to be removed before he or she can deal with the actual problem.

## 5.2 Sensorimotor psychotherapy

In Sensorimotor Psychotherapy the therapist helps the patient with processing bodily reactions experienced in relation to trauma, and resolving the destructive effects of it on a cognitive and emotional level (Ogden & Minton, 2000). With this method the sensorimotor level of processing is integrated with the cognitive and emotional level of processing. These three levels correlate with the levels in the brain's architecture, which interact and affect each other all the time.

The emphasis of sensorimotor psychotherapy is on the physical sensation, rather than the thoughts and worries the patient experiences while in therapy. The treatment has three phases: stabilization, memory and emotion work, and integration work (Fisher & Ogden, 2009). The first phase typically revolves around helping the patient to relax by bringing their awareness to the body while not talking explicitly about the trauma. In the second phase the therapist triggers the patient to bring back bodily sensations from right before the incident that generated the anxiety. In this phase it is important to stay within the *window of tolerance*, which means that the patient must neither be too relaxed nor too aroused during the session. To cope with too much arousal the patient is asked to bring the awareness to the body, just like in phase one. The third phase concerns overcoming the core of the trauma, and this focuses equally on the mind and the body. Here the patient is supposed to practice replacing negative thoughts and body language with positive ones, and at the same time be aware of the physical sensations that occur.

## 6. HOW THE FIELDS INTERTWINE

When digging into the field of psychology several links to design appears. This chapter is

identifying the similarities between the design methods that are required to design compassionately, and the corresponding treatment methods used to treat different types of anxiety.

### 6.1 Empathic design and exposure therapy

Both empathic design and exposure therapy deals with unconscious behavior. In empathic design the designer observes the user in their natural environment to look for unconscious action or abnormal conduct. In exposure therapy the patient, with help from the therapist, is encouraged to identify safety behaviors used in relation to objects or situations causing anxiety. Both abnormal conduct and safety behaviors are natural reactions done unconsciously. Thus, pointing out the link between them feels important but also fairly straight forward. On the other hand one might say that the user and patient have similar roles, as does the designer and therapist. However, their main task in these methods is actually the opposite of each other, as illustrated in the following figure 3.



Figure 3: Illustrating safety behavior vs. unconscious behavior when interacting with a product (Sivertsen, 2018b).

While the designer identifies unconscious behavior conducted by the user in the user's normal environment, the patient is the one identifying unconscious behavior performed by himself in relation to an object or situation that triggers anxiety. That is, the designer and the patient are the ones identifying behavior, and the user and therapist are helping them to do so. However in both cases both roles need to be present to achieve results. Without the user the designer has no way to gain insight and without the therapist the patient has a hard time knowing what a safety behavior is, and therefore almost no way of identifying them.

## **6.2 Emotional design and sensorimotor psychotherapy**

In emotional design Norman is mentioning the three levels of processing; visceral, behavioral and reflective. These three can be linked directly to Ogden and Minton's three levels of processing, respectively; sensorimotor, emotional and cognitive. While one can separate the phases of the design process into focusing on each level of processing separately, they all have to be solved to gain emotional attachment between the solution and the user. Similarly, in sensorimotor psychotherapy the patient needs to be in contact with both the bodily sensations and the thoughts and emotions that are connected to the anxiety experienced.

Imagine a person that has claustrophobia getting stuck in an elevator. To deal with that incident afterwards there is no point in reading enormous amounts of facts about how safe it is in an elevator, or trying to be sincerely happy about not having to walk 27 floors, if the heart rate of the patient raises as soon as an elevator is nearby. To overcome this the patient has to relieve these bodily sensations in a safe environment to experience that even though it is

uncomfortable it is not dangerous. When this is achieved one can start practicing believing in reassuring facts and replacing negative emotions and thoughts with positive ones. This way the patient is working through the challenge on all three levels of processing.

The goal when practicing emotional design is somewhat similar: if the product or service fails to address either the visceral, behavioral or reflective level of processing, it is not going to be viable and therefore badly designed.

## **6.3 Co-design and group therapy**

Results reported by Powell (1987) shows that patients in group therapy valued specifically the fact that they acquired knowledge about anxiety, and *"the experience of being in a group and meeting people with similar problems"* (Powell, 1987). One can draw a parallel here between what happens in the process of co-designing and a session of group therapy. In co-design all participants are members of the design team, regardless of their title in other contexts. This makes them equal members of the team as well as experts on their domain (Visser, Stappers, Van der Lugt, & Sanders, 2005). Knowledge is power, both when it comes to knowing your field as in the co-design context, but also when it comes to knowing your disorder or challenge, like in the group therapy setting. To acquire such knowledge one must not necessarily be part of a group, it can also be achieved in one-on-one therapy. However, the feeling of agreeing upon such knowledge often enhances the feeling of it being valid, and therefore it is valuable to do it in the context of a group therapy session. Equally, when participating in a co-design team everyone in the team shares the knowledge they hold. This strengthens both the team and the individuals because they gain more knowledge about their own field, as well as learning about the other experts' fields.

Group therapy can be whichever kind of therapy done in groups instead of the traditional one-on-one meetings between patient and therapist (Block, 2011). It is interesting that in group therapy, participants tend to talk about the overall experience rather than the therapy techniques. When a team work towards mutual goals and overcome challenges together they experience a feeling of trust (Fairholm, 1994). This might be the reason why patients in the group therapy reported by Powell is pointing out the experience of being in a group and meeting people with similar problems.

## 7. REFLECTION

The more knowledge I acquired from the world of psychology, the more similarities I found between that and the field of design. No wonder Donald Norman started out a psychologist and ended up a designer. The methods we use every day as designers seems clearly rooted in psychology, but because of our lack of knowledge about this we might take for granted why they work so well and often give us successful results.

When it comes to designing compassionately for situational anxiety, it seems reasonable to believe that designers need to put several methods to use. By embedding both empathic design, emotional design and co-design in the design process, valuable insight can be gained. This enables the designer to acquire a compassionate mindset, and to really grasp the essence of the users environment and challenges, as well as the feelings and emotions connected to both the environment, the situation and the potential to-be-designed product or service.

If the designer does not achieve this state of compassion, the probability of a failed design

might be greater than if such a state is reached during the design process. People have different personalities and thus different levels of neuroticism and imagination. One can never be completely certain if the designers imagined emotions and bodily sensations are a perfect rendering of the users experience. Thus, being open minded and curious should be a desired starting point for further exploration and design-related actions.

The way this article highlights how the field of design correlates with the field of psychology should strengthen the designers credence to the methods that exist within design. However, as a designer it might be beneficial to be aware of this link and to gain more information about why the methods work from a psychological point of view. On the other hand, a psychologist might be interested in knowing how designers use the insight gained through the beforementioned design methods and how the results are embedded in products and services. Ultimately, even though the world of a designer differs a lot from the world of a psychologist, they share the wish to make the life of their users or patients a better place to be.

## REFERENCES

- Abramowitz, J. S. (2013). The practice of exposure therapy: relevance of cognitive-behavioral theory and extinction theory. *Behavior therapy*, 44(4), 548-558.
- Abramowitz, J. S., Deacon, B. J., & Whiteside, S. P. (2011). *Exposure therapy for anxiety: Principles and practice*: Guilford Press.
- Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: psychometric properties. *Journal of consulting and clinical psychology*, 56(6), 893.



- Berge, T., & Repål, A. (2012). Trange rom og åpne plasser. *Hjelp til mestring av angst, panikk og fobier*. Oslo: Aschehoug.
- Blakey, S. M., & Abramowitz, J. S. (2016). The effects of safety behaviors during exposure therapy for anxiety: Critical analysis from an inhibitory learning perspective. *Clinical psychology review, 49*, 1-15.
- Block, M. (2011). Group Therapy. In *Encyclopedia of Child Behavior and Development* (pp. 714-715): Springer.
- Clark, D. M. (1999). Anxiety disorders: Why they persist and how to treat them. *Behaviour research and therapy, 37*(1), S5.
- Fairholm, G. W. (1994). *Leadership and the Culture of Trust*: Greenwood Publishing Group.
- Fisher, J., & Ogden, P. (2009). Sensorimotor psychotherapy. *2009*, 312-328.
- Goetz, J. L., Keltner, D., & Simon-Thomas, E. (2010). Compassion: an evolutionary analysis and empirical review. *Psychological bulletin, 136*(3), 351.
- Grant, B. F., Hasin, D. S., Stinson, F. S., Dawson, D. A., Ruan, W. J., Goldstein, R. B., . . . Huang, B. (2005). Prevalence, correlates, co-morbidity, and comparative disability of DSM-IV generalized anxiety disorder in the USA: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Psychological Medicine, 35*(12), 1747-1759.
- Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eshleman, S., . . . Kendler, K. S. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: results from the National Comorbidity Survey. *Archives of general psychiatry, 51*(1), 8-19.
- Koupric, M., & Visser, F. S. (2009). A framework for empathy in design: stepping into and out of the user's life. *Journal of Engineering Design, 20*(5), 437-448.
- McIvor, A. (2015). A Rational Treatment for an Irrational Fear.
- Norman, D. A. (2004). *Emotional design: Why we love (or hate) everyday things*: Basic Civitas Books.
- Ogden, P., & Minton, K. (2000). Sensorimotor psychotherapy: One method for processing traumatic memory. *Traumatology, 6*(3), 149-173.
- Powell, T. (1987). Anxiety management groups in clinical practice: a preliminary report. *Behavioural and Cognitive Psychotherapy, 15*(2), 181-187.
- Rijn, H. v., & Stappers, P. J. (2008). *Expressions of ownership: motivating users in a co-design process*. Paper presented at the Proceedings of the Tenth Anniversary Conference on Participatory Design 2008, Bloomington, Indiana.
- Seshadri, M. P., & Reid, T. N. (2014). A framework for fostering compassionate design thinking during the de-sign process. *age, 24*, 1.
- Sivertsen, H. (2018a). Compassion Illustration. In.
- Sivertsen, H. (2018b). Empathic design and exposure therapy Illustration.
- Strauss, C., Taylor, B. L., Gu, J., Kuyken, W., Baer, R., Jones, F., & Cavanagh, K. (2016). What is compassion and how can we measure it? A review of definitions and measures. *Clinical psychology review, 47*, 15-27.
- Visser, F. S., Stappers, P. J., Van der Lugt, R., & Sanders, E. B. (2005). Contextmapping: experiences from practice. *CoDesign, 1*(2), 119-149.
- Wilson, G. T. (1984). Fear reduction methods and the treatment of anxiety disorders. *Annual Review of Behavior Therapy: Theory & Practice*.
- Wittchen, H. U., Jacobi, F., Rehm, J., Gustavsson, A., Svensson, M., Jönsson, B., . . . Steinhausen, H. C. (2011). The size and burden of mental disorders and other disorders of the brain in Europe 2010. *European Neuropsychopharmacology, 21*(9), 655-679.  
doi:<https://doi.org/10.1016/j.euroneuro.2011.07.018>