

# Information Handout

Professional Version | US English

# Hindsight Bias



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## Description

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The *Hindsight Bias* information handout forms part of the cognitive distortions series, designed to help clients and therapists to work more effectively with common thinking biases.

### **A brief introduction to cognitive distortions**

Cognitive distortions, cognitive biases, or ‘unhelpful thinking styles’ are the characteristic ways our thoughts become biased (Beck, 1963). We are always interpreting the world around us, trying to make sense of what is happening. Sometimes our brains take ‘shortcuts’ and we think things that are not completely accurate. Different cognitive short cuts result in different kinds of bias or distortions in our thinking. Sometimes we might jump to the worst possible conclusion (“this rough patch of skin is cancer!”), at other times we might blame ourselves for things that are not our fault (“If I hadn’t made him mad he wouldn’t have hit me”), and at other times we might rely on intuition and jump to conclusions (“I know that they all hate me even though they’re being nice”). These biases are often maintained by characteristic unhelpful assumptions (Beck et al., 1979).

Different cognitive biases are associated with different clinical presentations. For example, catastrophizing is associated with anxiety disorders (Nöel et al, 2012), dichotomous thinking has been linked to emotional instability (Veen & Arntz, 2000), and thought-action fusion is associated with obsessive compulsive disorder (Shafran et al, 1996).

Catching automatic thoughts and (re)appraising them is a core component of traditional cognitive therapy (Beck et al, 1979; Beck, 1995; Kennerley, Kirk, Westbrook, 2007). Identifying the presence and nature of cognitive biases is often a helpful way of introducing this concept – clients are usually quick to appreciate and identify with the concept of ‘unhelpful thinking styles’, and can easily be trained to notice the presence of biases in their own automatic thoughts. Once biases have been identified, clients can be taught to appraise the accuracy of these automatic thoughts and draw new conclusions.

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# Description

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## Hindsight bias

Hindsight bias is sometimes referred to as the “knew-it-all-along” effect. Once an outcome is known, people with this bias are likely to believe that they predicted (or could have predicted) an outcome that they did not (or could not) predict (Fischhoff, 1975). In other words, people often have a tendency to conflate an outcome with what they knew at the time. People experiencing hindsight bias “think that they should have known something, or did know something, that would have led them to act differently had they paid more attention to it” (Young et al., 2021).

Examples of hindsight bias include:

- An individual who was on a train that was attacked by suicide bombers states, “I knew I should have got on a different train that morning, I had a funny feeling about it.”
- A parent whose child died from a rare infection, and who (at the time) had no reason to suspect that their symptoms were anything other than a sore throat, says, “I knew something was wrong that day. If I had done something about it my child would have survived”.
- A woman whose husband subjected her to domestic violence asserts that, “I knew I shouldn’t have married him. I should have run the moment I met him”.
- A man who was bullied at work states, “I should never have taken the job – I should have stayed where I was”.

Basic psychological research (e.g., Nestler et al., 2010) suggests that there are three kinds of hindsight bias, which Roese and Vohs (2012) conceptualize as a hierarchy. At the bottom level sits memory distortion, which causes earlier judgements to be misremembered. An intermediate ‘inevitability’ level involves beliefs about the state of the world and the predetermination of events (e.g., “Under the circumstances, no different outcome was possible”). At the top level, ‘foreseeability’ describes beliefs about one’s own knowledge and abilities (e.g., “I knew it would happen”). Clinical approaches for working with hindsight bias might address one or all of these levels.

People who experience hindsight bias may have ‘blind spots’ when it comes to:

- Identifying alternative causes for an event or a chain of events.
- Acknowledging or tolerating the feelings of uncertainty when recalling the time which preceded an event.
- Accepting the doubt inherent in the judgements that people make.
- Assessing how much influence they had and how responsible they were for events and outcomes.
- Self-compassion and understanding when things go badly.

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As with other cognitive biases, it can be helpful to consider the function of hindsight bias. Some authors propose that hindsight bias is a by-product of the human capacity for adaptive learning (Pohl et al., 2002). Others suggest that hindsight bias results from a 'need for closure', arguing that "people have a need to see the world as predictable and find it threatening to believe that many outcomes are at the mercy of unknown, random chance" (Roese & Vohs, 2012). Furthermore, there may be individual differences in peoples' predisposition to hindsight bias. For example, evidence suggests that people with dispositionally greater 'need for control' or 'need for closure' show greater hindsight bias (Campbell et al., 2003; Tykncinski, 2001).

Hindsight bias is associated with a wide range of clinical problems, including:

- Complicated grief (Fleming & Robinson, 2001; Simon et al, 2017).
- Depression (Gross et al., 2017).
- Guilt (Kubany, 1997).
- Problem gambling (Toneatto, 1999; Toneatto & Gunarate, 2009).
- Psychosis (Woodward et al, 2006).
- Post-traumatic stress disorder (PTSD) (Kubany, 1994).
- Regret (Blank & Peter, 2010; Gross et al., 2017)).
- Self-criticism (Kubany & Manke, 1995).
- Survivor guilt (Murray et al., 2021).

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# Instructions

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## Suggested Question

*Many people struggle with hindsight bias. It sounds as though this might also be relevant to you. Would you be willing to explore it with me?*

Clinicians may consider giving clients helpful psychoeducation about automatic thoughts more generally and hindsight bias in particular. Consider sharing some of these important details:

- Automatic thoughts spring up spontaneously in your mind in the form of words or images.
  - They are often on the 'sidelines' of our awareness. With practice, we can become more aware of them. It is a bit like a theatre – we can bring our automatic thoughts 'centre stage'.
  - Automatic thoughts are not always accurate: just because you think something, it doesn't make it true.
  - Hindsight bias is a common type of bias that can show up in our automatic thoughts.
  - Signs that hindsight bias is present might include feelings of guilt, shame, regret, or self-blame. The thoughts that accompany these feelings often contain judgmental descriptions, such as "I knew it...", "Why didn't I...", "I should have..."
  - Hindsight bias can happen for different reasons. Sometimes it arises when we misremember what we knew or how we felt when we made a decision, but there are other motivations for believing something that is factually untrue. For instance, we might prefer to blame ourselves for events because it increases our sense of control.
- Many treatment techniques are helpful for working with hindsight bias:
- **Decentering.** Meta-cognitive awareness, or decentering, describes the ability to stand back and view a thought as a cognitive event: as an opinion, and not necessarily a fact (Flavell, 1979). Help clients to practice labeling the process present in the thinking rather than engaging with the content. For instance, saying to themselves, "That sounds like hindsight bias again", whenever they notice this style of thinking.
  - **Clarifying what was known and when.** When someone judges themselves in hindsight (with knowledge that they gained after a critical choice, decision, or action), it is helpful to clarify what was known and when. Young and colleagues (2021) suggest the following:
    - Explore what the client thinks they should have known, or should have paid more attention to, at the time of the event, which may have prevented it from occurring.
    - Ask the client to recall the exact moment when they made the decision to act/respond in the way they did. Clarify who was there, what was happening, and sensory details (e.g., what they could see, hear, smell, touch, feel). Ask them to concentrate on the moment they made the decision and state what they thought would happen at that moment.
    - Summarize this information as a "what I thought at the time" statement or position that was understandable given the circumstances of the decision.

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# Instructions

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- **Creating a clear narrative and filling gaps in memory.** Research indicates that some forms of hindsight bias are linked to memory distortions, which results in misrecollection. Clients who have experienced trauma often have gaps in their memory or find struggle to recall the particular sequence of events leading up to a key decision or action. They may experience frequent involuntary memories of points where they chose to act (or not act) but fail to recall the sequence of events that led to that choice or action (Hellawell & Brewin, 2004). In this case, ask the client relive the events in chronological order while helping them recall what they knew at different points in the sequence. Explore how sure they were of different predictions and inferences at each point (e.g., “At the moment when your partner got mad and left the room, what did you think he would do?”, “At that moment, how certain were you that he would die later?”, “What happened next?”).
- **Clarifying beliefs and reasons – saying the unsaid.** Guilt and self-blame can be ‘slippery’. It can be helpful to ask the client to make a clear statement about what they feel guilty about, why they feel guilty, and to rate the strength of their belief. Young and colleagues (2021) describe how there is a big difference between the statements “I should not have decided to keep quiet, I should have told my parents after the first time he raped me” and “I should not have decided to keep quiet, I should have told my parents after the first time he raped me, and because I did not say anything, I am responsible for him raping me again”.
- **Assessing responsibility with pie charts.** Hindsight bias can lead to excessive responsibility taking and self-blame. If this is the case, a responsibility pie chart can be used to distribute responsibility more fairly and help clients appreciate that most events have multiple causes.
- **Discussing issues related to knowledge and blame.** Young and colleagues (2021) use a story-telling approach to discuss the roles of knowledge and blame: “Imagine that you have someone staying in your house who has never seen electrical equipment before, perhaps they have always lived very remotely or are an alien from another planet. They are an adult, of normal intelligence, and with normal memory capacity. They come down for breakfast on the first morning that they are staying with you and see you are ironing. They are intrigued by the shiny metal object with a red light on it and touch it with their hand. Would you blame them for the burn they get from touching the iron? Imagine that the next morning the same person comes downstairs, with a bandage on their hand from the day before. Remember, they do not have a memory problem and are of normal intelligence, and they touch the iron again. Would you blame them for the second burn? Why would you blame them for the second burn and not the first? It seems that you are making a judgement about the relationship between what you know and whether you are to blame. Can you tell me more, what do you think is the relationship between knowledge and blame?”

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# Instructions

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- **Using analogies (such as how courts allocate blame and responsibility).** If a client has a high level of accountability, they may find it helpful to reflect on how courts judge responsibility. When courts judge an individual's intentions or state of mind, they will often consider what the defendant knew at the time. They look to see whether an action happened purposefully (the defendant consciously desired the result), knowingly (the defendant was 'practically certain' that the result would happen), recklessly (the defendant consciously disregards substantial and unjustifiable risk), or negligently (a 'reasonable person' ought to be aware that there was a substantial and unjustifiable risk). In terms of the burden of proof, a jury must be certain (often 'beyond reasonable doubt') before deciding to convict. Accordingly, if the defendant does not meet the thresholds for having acted 'purposefully', 'knowingly', 'recklessly', or 'negligently', they are likely to be found not guilty.
- **Acknowledging 'impossible choices.'** When clients blame themselves unfairly, they often believe that there was a better way of acting which they chose not to do. Young and colleagues (2021) describe these as 'impossible choices', while Kubany (1994) and Norman et al (2019) refer to them as 'Catch 22 guilt' – the idea that when people are faced with two bad choices (e.g., leaving someone to die or dying oneself), they will usually choose the least-bad outcome. Kubany (1994) recommends asking the client to recall the moment they made their decision as well as all the alternative choices they could have made. Ask the client to consider what they thought were the advantages and disadvantages of each choice at the time (instead of with hindsight), both in the short- and long-term. Waltman (2021) gives an example of helping a client whose daughter was killed to explore – in detail, and using maps drawn on a whiteboard – a number of counterfactual scenarios in which he acted differently. He reported that "this helped him to see that there was literally nothing he could have done in the situation and that in reality he was lucky to have escaped with his life".
- **Psychoeducation.** Hindsight bias may arise from a failure to recall the feelings of uncertainty when making decisions under conditions of stress and uncertainty. Schauer and Elbert (2010) have described the automatic processes that often occur in threatening situations. For example, freezing, fleeing, fighting, pleading, or dissociating can all take place automatically – and for good reason given our evolutionary history and instinct to survive. Trauma survivors may fail to recall how they felt when a critical decision was made. Unfortunately, this failure to recall (or avoidance) increases the likelihood of judging an action with hindsight. Helping clients engage with how they felt emotionally and physiologically when making a critical decision can help them appreciate how severe stress may have impacted their judgment.
- **Surveys.** Surveys are helpful when a client is judging themselves according to a strict or harsh standard, and has not sought the opinions of other people regarding their culpability. Survey formats can vary but usually include a short vignette describing the event or decision in question, followed by questions such as "How much do you think this person is to blame for this event?". Clients should predict how other people will respond to these questions prior to viewing the results.



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## References

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- Beck, A. T. (1963). Thinking and depression: I. Idiosyncratic content and cognitive distortions. *Archives of General Psychiatry*, 9, 324-333. DOI: 10.1001/archpsyc.1963.01720160014002.
- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. Guilford Press.
- Beck, J. S. (1995). *Cognitive behavior therapy: Basics and beyond*. Guilford Press.
- Blank, H., & Peters, J. H. (2010). Controllability and hindsight components: Understanding opposite hindsight biases for self-relevant negative event outcomes. *Memory and Cognition*, 38, 356–65. DOI:10.3758/MC.38.3.356.
- Fischhoff, B. (1975). Hindsight  $\neq$  foresight: The effect of outcome knowledge on judgment under uncertainty. *Journal of Experimental Psychology: Human Perception and Performance*, 1, 288-299. DOI: 10.1136/qhc.12.4.304.
- Fleming, S., & Robinson, P. (2001). Grief and cognitive-behavioral therapy: The reconstruction of meaning. In M. S. Stroebe, R. O. Hansson, W. Stroebe, & H. Schut (Eds.), *Handbook of bereavement research: Consequences, coping, and care* (pp. 647–669). American Psychological Association.
- Groß, J., Blank, H., & Bayen, U. J. (2017). Hindsight bias in depression. *Clinical Psychological Science*, 5, 771-788. DOI: 10.1177/2167702617712262.
- Kubany, E. S. (1994). A cognitive model of guilt typology in combat-related PTSD. *Journal of Traumatic stress*, 7, 3-19. DOI: 10.1002/jts.2490070103.
- Kubany, E. S. (1997). Thinking errors, faulty conclusions, and cognitive therapy for trauma-related guilt. *National Center for Post-Traumatic stress Disorder Clinical Quarterly*, 7, 1-4.
- Kubany, E. S. (1997). Application of cognitive therapy for trauma-related guilt (CT-TRG) with a Vietnam veteran troubled by multiple sources of guilt. *Cognitive and Behavioral Practice*, 4, 213-244. DOI: 10.1016/S1077-7229(97)80002-8.
- Kubany, E. S., & Manke, F. P. (1995). Cognitive therapy for trauma-related guilt: Conceptual bases and treatment outlines. *Cognitive and Behavioral Practice*, 2, 27-61. DOI: 10.1016/S1077-7229(05)80004-5.
- Murray, H., Kerr, A., Warnock-Parkes, E., Wild, J., Grey, N., Clark, D. M., & Ehlers, A. (2022). What do others think? The why, when and how of using surveys in CBT. *The Cognitive Behaviour Therapist*, 15, e42. DOI: 10.1017/S1754470X22000393.
- Murray, H., Pethania, Y., & Medin, E. (2021). Survivor guilt: a cognitive approach. *The Cognitive Behaviour Therapist*, 14, e28. DOI: 10.1017/S1754470X21000246.
- Noël, V. A., Francis, S. E., Williams-Outerbridge, K., & Fung, S. L. (2012). Catastrophizing as a predictor of depressive and anxious symptoms in children. *Cognitive Therapy and Research*, 36, 311-320. DOI: 10.1007/s10608-011-9370-2.
- Norman, S., Allard, C., Browne, K., Capone, C., Davis, B., & Kubany, E. (2019). *Trauma informed guilt reduction therapy: Treating guilt and shame resulting from trauma and moral injury*. Academic Press.



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## References

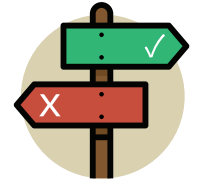
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- Roese, N. J., & Vohs, K. D. (2012). Hindsight bias. *Perspectives on Psychological Science*, 7, 411-426. DOI:
- Schauer, M., & Elbert, T. (2015). Dissociation following traumatic stress. *Journal of Psychology*, 7, 411-426. DOI: 10.1177/1745691612454303.
- Shafran, R., Thordarson, D. S., & Rachman, S. (1996). Thought-action fusion in obsessive compulsive disorder. *Journal of Anxiety Disorders*, 10, 379-391. DOI: 10.1016/0887-6185(96)00018-7.
- Simon, N. M., O'Day, E. B., Hellberg, S. N., Hoepfner, S. S., Charney, M. E., Robinaugh, D. J., ... Rauch, S. A. M. (2017). The loss of a fellow service member: Complicated grief in post-9/11 service members and veterans with combat-related posttraumatic stress disorder. *Journal of Neuroscience Research*, 96, 5-15. DOI: 10.1002/jnr.24094.
- Toneatto, T. (1999). Cognitive psychopathology of problem gambling. *Substance Use and Misuse*, 34, 1593-1604. DOI: 10.3109/10826089909039417.
- Toneatto, T., & Gunaratne, M. (2009). Does the treatment of cognitive distortions improve clinical outcomes for problem gambling? *Journal of Contemporary Psychotherapy*, 39, 221-229. DOI: 10.1007/s10879-009-9119-3.
- Veen, G., & Arntz, A. (2000). Multidimensional dichotomous thinking characterizes borderline personality disorder. *Cognitive Therapy and Research*, 24, 23-45. DOI: 10.1023/A:1005498824175.
- Waltman, S. H. (2020). Introduction: Why Use Socratic Questioning?. In: Waltman, S. H., et al. (2020). *Socratic Questioning for Therapists and Counselors* (pp. 1-7). Routledge.
- Westbrook, D., Kennerley, H., & Kirk, J. (2011). *An introduction to cognitive behaviour therapy: Skills and applications (2nd ed.)*. Sage.
- Woodward, T. S., Moritz, S., Arnold, M. M., Cuttler, C., Whitman, J. C., & Lindsay, D. S. (2006). Increased hindsight bias in schizophrenia. *Neuropsychology*, 20, 461-467. DOI:10.1037/0894-4105.20.4.461.
- Young, K., Chessell, Z. J., Chisholm, A., Brady, F., Akbar, S., Vann, M., ... & Dixon, L. (2021). A cognitive behavioural therapy (CBT) approach for working with strong feelings of guilt after traumatic events. *The Cognitive Behaviour Therapist*, 14, e26. 10.1017/S1754470X21000192.

When we feel strong emotions – such as fear, sadness, shame, or hopelessness – we have often just had an *automatic thought*. These thoughts can happen so quickly and effortlessly that we are not even aware we've had them. It can take practice to notice them as they arise. Automatic thoughts often feel convincing, but they are not always 100% accurate.

They are often *exaggerated, biased, distorted, or unrealistic*. There are different types of biases, which psychologists call *cognitive distortions* or *unhelpful thinking styles*. We all think in exaggerated ways sometimes, but it can become a problem if your thoughts are distorted very often or very strongly.

**Hindsight bias** (sometimes called the “knew-it-all-along” effect) is a way of thinking where you wrongly believe that an event was somehow predictable or foreseeable. If you struggle with hindsight bias, you might think that you should have done something or known something that wasn't obvious at the time. It is common to experience hindsight bias after a traumatic event. However, thinking in this way can lead to guilt, sadness, and frustration.



Hindsight bias can contribute to a range of problems:

- Guilt
- PTSD
- Depression
- Regret
- Complicated grief
- Self criticism
- Survivor guilt
- Problem gambling
- Psychosis

## Overcoming hindsight bias

### Nail it down

Guilt and self-blame can be 'slippery', so it is helpful to make a clear statement about what you regret, and why you regret it. Try writing down your answers to these questions:

- What decision or action do you regret?
- Why do you feel guilty or regretful about that decision or action?
- What does it mean to you that you acted (or didn't act) in that way?
- Why is it unfair to conclude that you should have foreseen this?



### Write a timeline of what happened

Some types of hindsight bias are caused by memory distortions. It can be helpful to clarify the sequence of events which led up to a choice or action that you regret. Try writing down a timeline of what happened: be clear about what you were experiencing, thinking, and feeling at each point.

- List - in order - the sequence of events that led to the choice or action you regret.
- For each item in the list, describe what you felt, believed, and were predicting (or not) at that moment in time.



### Responsibility pie chart

If you blame yourself (entirely or mostly) for something that happened, try to distribute responsibility fairly.

- What do you feel responsible for?
- List every possible person, organization, or factor that contributed to what happened.
- Draw a pie chart and assign portions of it to all the people and factors you have listed. Think about how big each slice ought to be.
- Draw your 'slice' last. What does this tell you about your role in events?



### What would a court say?

When courts make a judgement about guilt or innocence, they think about the *state of mind* of the defendant (e.g., what they knew when the offence was committed). The burden of proof to establish guilt is strict for good reason. Pretend you are an objective juror and ask yourself:

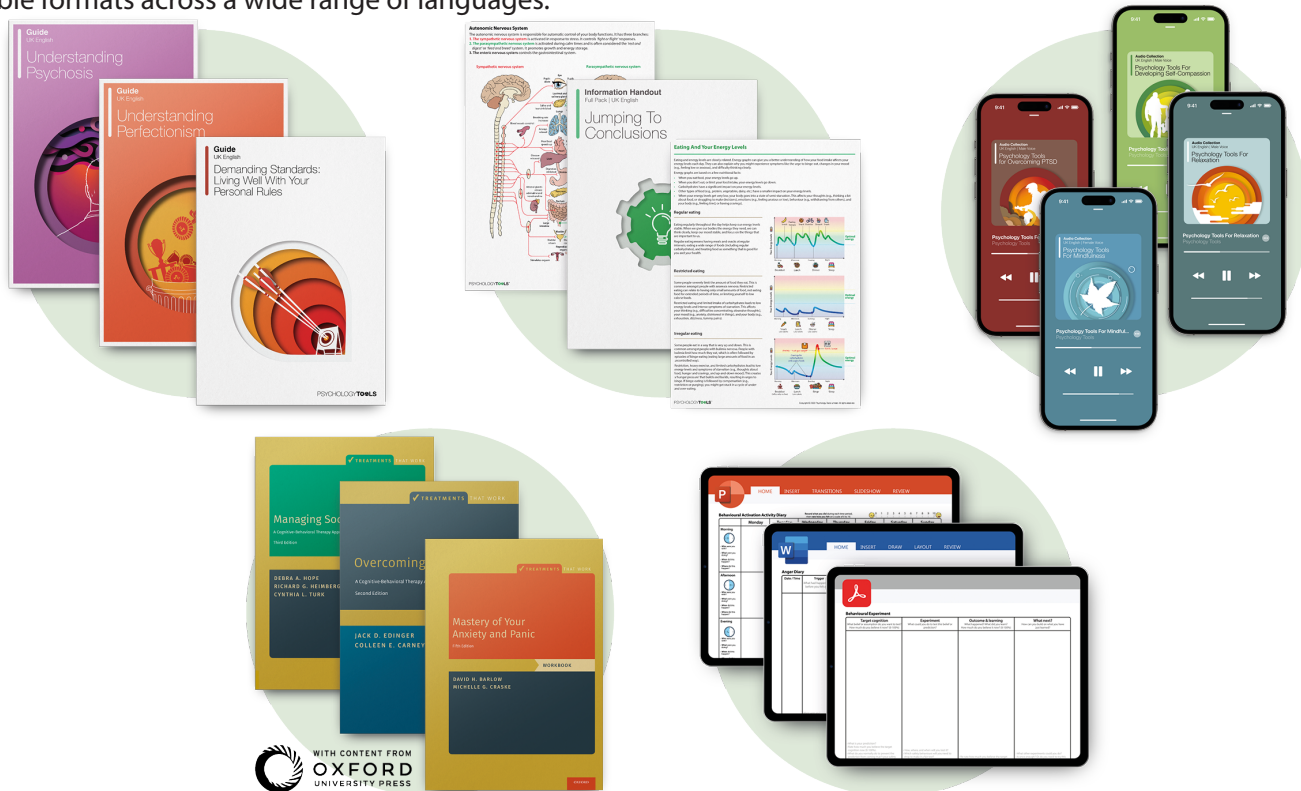
- When I acted (or didn't act), was I 100% certain this would happen?
- Did I want this outcome to happen?
- Would other jurors agree that I intentionally ignored a big risk?



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