Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company’s public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
Ten statements for simplifying your life with embodied choices

In the following, I have summarized the previous chapters in the form of 10 statements that can be used as a guide to apply embodied choices in everyday life. This chapter tries to contextualize the empirical findings from the previous chapters using real-life examples in the domains of health, work, sports, and relationships. Many of the choices refer to routine decision-making and subjectively important choices we make as individuals, groups, or societies. The main message is to use the information provided in this book to simplify your personal life with embodied choices that can be applied to your own context. As argued earlier, the book is not meant to be used like a recipe that needs to be followed exactly to produce a great dish. Rather the information about judgment and decision-making and specifically about embodied choices is meant to be information that you can use for your own satisfaction, no more and no less.

#1: Choices are embodied choices

I argued earlier that choices are not pure cognitive processes but include your emotions and your body. Listening to your current feelings and your bodily responses helps you to trust your choices. Whether your gut is full may influence the way you make a decision. Do you remember my spaghetti Bolognese example, with which I opened the first chapter? This is an example of a subjective choice based on personal preferences—there is no right or wrong answer to the question of whether I should have spaghetti Bolognese today if I just had it yesterday. Such choices are embodied choices because the body can signal what we need, and sometimes we need to control those signals that have evolved. The basic tenet of the first rule is to trust your gut feelings. If you are an expert in something, your myriad experiences are somehow used in your body to inform you and you should listen. It may therefore be quite important that your choices reflect whether you decide intuitively or deliberately, with a full or an empty stomach.
How can we contextualize this statement? Charles Darwin (Chapter 1, Fig. 3) married his cousin Emma after producing a table of pros and cons but in the end trusted his intuition. I assume readers have made important decisions in their lives, whether forming relationships, deciding what to study, or figuring out how to achieve goals at work. The rule to trust your intuition can be applied to those decisions with which you have experience. Thus you may be better off relying on your intuition than writing down the pros and cons as Darwin first did before he followed his intuition.

#2: Choices are governed by a less-is-more strategy

The belief that less of something is better than more of that thing seems to be supported by research. Try to use only a few but valid pieces of information when making choices. Try to generate only a few ideas or options when you have experience in that domain. Use simple heuristics such as Take-The-Best, using the first piece of information that distinguishes between two options to make a choice. Use Take-The-First to trust the first idea you generate in a domain you know about. Simple heuristics as explained in Chapter 2 are based on the principle that less is more, whether you choose between given options or generate options yourself. The simplest of these heuristics, the recognition heuristic, has been explained in Chapter 2 with the example of the popular television game show “Who Wants to Be a Millionaire,” in which only one of four options is correct and allows the player to move to the next level of the game. Which city has more inhabitants, Kyoto or Fukuoka? Most people recognize Kyoto as the right answer because larger cities appear more often in news and on the Internet. Following the recognition heuristic allows you to make fast but good decisions—in experimental tasks and in real-life strategies, such as devising an investment plan.

How can we contextualize this statement? Consider choices in which options are given and try to sort the information in the order of the options’ validity. Use only the information that discriminates between the two or more options to make a choice. If you instead generate new ideas, do not try to generate all the options you can come up with but stop after a few and select the first generated.

#3: Choices are grounded in your movements

Choices regarding abstract concepts such as time can be influenced by your current position or movement of your body. Remember the example
in Chapter 4 about moving a meeting? Does “next week’s Wednesday meeting is moved forward by two days” mean the meeting will take place on Monday or Friday? The answer is likely to be influenced by moving forward or backward when answering this question. Choices are embodied and influenced not only by your gut, as indicated in Chapter 1, but also by your current posture, movement direction, or hand movements.

How can we contextualize this statement? Think about how to use your memory when thinking about your past or future. Studies discussed in Chapter 2 suggested using your movements to activate a memory that is stored in your body. To recall something from your past, lean back to bodily “travel” in that direction; to think about your future, lean forward. Likewise, positive feelings are associated in your body with upward movements and sad feelings with downward movements. If you need to pay strict attention to a task you might slow the pace of your breathing, which increases heart-rate variability and produces activation of the parasympathetic system you need for those tasks. If you are a student or teacher, use movements to anchor memory to the body; remember how moving your fingers on an imaginary keypad can help you to remember your bank account PIN or other important code. The advantage is not limited to numbers: For example, it has been suggested that learning vocabulary or facts for your next exam can be supported by movement-related memory strategies.

#4: Actions enable perception and cognition

By moving through space, as when an outfielder catches a baseball, we enable our perception to functionally work. An athlete does not need much cognition to predict where the ball may land. Jay Gould, introduced in Chapter 5, called this physical intelligence, and I call it motor intentionality. We may be tricked by perceptual illusions but as soon we act, our actions are likely to reduce the illusion. You may remember the study about being less likely to choose an advertised product when we have oral interference (e.g., eating popcorn or chewing a gum; Chapter 5, Fig. 3). The effects were described in Chapter 5 for other senses too, such as touch. Finally, environmental factors influence your choices, such as higher temperatures making you more impulsive, and may change your moral decision-making.

How can we contextualize this statement? Move when you want to allow your perception to work functionally. When temperatures rise, make sure that you remember that the choice you make may be influenced by impulsivity and if the situation allows you to delay the decision, make it in the cooler evening. Financial risk is perceived
differently depending on your gut feelings. Consider the risks of your financial choices under different conditions of satiety and temperature.

#5: Decisions are influenced by your long-term movement history

Do you remember from Chapter 6 that judges in gymnastics who could perform a movement in their own athletic career judged the movements of gymnasts better than their counterparts who had not produced that movement themselves? It seems that observing movements of others is a way of using our own motor system to simulate the movements we observe with our own body. This potential of our motor system helps not only to control movements but to predict, estimate, and interpret movements of others has many social implications, from judging sport movements to making neurological diagnoses to making judgments based on empathy processes, to name a few—even esthetic judgments. You may remember the paper titled “I can, I do and so I like” that summarized nicely that our own long-term movement history affects our perceptions, emotions, and cognitions when observing actors, pictures, movies, and other people and things associated with the arts. And these effects are not limited to vision: Recall, how I was moved to purchase a picture of a bench in New York’s Washington Square that I saw in the Metropolitan Museum of Art after sitting on a bench in that same park. Sounds, too, can have a huge impact on aesthetic judgments and have societal relevance as well: Manufacturers have been required to add running sounds to otherwise silent electric cars to warn people when cars are approaching.

How can we contextualize this statement? When making decisions that seem to be unrelated to your own movement history, reflect on the information from Chapter 7. Maybe sports decisions, aesthetic judgments, and choices based on empathy may be more strongly related to our long-term movement history than we thought.

#6: Choices in the real environment can change the impact of the body

Long-term consequences of our choices are often unembodied. In Chapter 7, I talked about medical choices, shopping choices, and liking people or objects. It is hard to act to prevent long-term consequences that are not felt strongly enough, such as climate change or the risk of COVID-19
infection. Making healthy food decisions is not easy when shops have the sweets stacked in front of you as you wait for the cashier. In Chapter 7, I also talked about how so-called fast-and-frugal trees can make many real-life decisions easier, and how your posture and that of people you observe can influence how much you like a person or thing. These preference judgments and first impressions may be correct. In Chapter 7, examples showed that more deliberation, that is, more thinking about your choices, does not make your decisions automatically better.

How can we contextualize this statement? For medical decisions, use information that is valid, as the previous chapters on simple heuristics claim, use fast-and-frugal trees, and understand base rates or other information provided by reliable sources. When shopping, remember that arm position and current bodily processes can influence your choices. Push your shopping cart with straight arms when approaching the checkout lane where all the sweet things are. Eat first and then go shopping. Try to provide bodily contact with things you wanted to change, such as bringing politicians to see the plastic in the ocean before they make decisions in meetings.

#7: Embodied choices are individualized and culture dependent

In Chapter 8, I asked if women and left-handers have better intuition, to illustrate that individual differences you cannot change can alter your choices. The same argument was used for cultural choices. Do you remember when I talked about why left-handers have an advantage in sports such as fencing and tennis, and why they are perceived differently when gesturing during talks? Or do you remember the study about nonverbal communication showing that women read facial expressions of emotions better than their male counterparts? Judgments based on individual differences matter, and some of these individual factors can be trained, as was demonstrated in Chapter 8 in studies on higher cognitive functions, creativity, and problem-solving, among others.

How can we contextualize this statement? Gestures are not only the product of thinking but also can influence your thinking. If you gesture with your right hand you may be better perceived by an audience of mostly right-handers. Observe your posture and gestures to find out how you feel about things and use what you learn to improve your thinking. Remember how Mark Zuckerberg, cofounder and CEO of Facebook, and Steve Jobs, the late cofounder of Apple, used walking meetings to promote creativity and problem-solving.
#8: First-time choices can be made embodied

In Chapter 9, I illustrated that first-time choices are tough, as we cannot rely on our experiences for that specific choice. I gave as examples the first time voting, the first time considering climate change actions, and the first time being faced with a particular moral decision. It seems that for these choices, activating feelings that are related to the choices to be made is important. In the climate example, touching waste in the ocean may have more of an impact on behavior than sitting at home and thinking about the climate. In Chapter 9 (Fig. 1), it seemed as well that washing one’s hands produces more volunteering. Whether the increased hand washing that people are practicing during the COVID-19 pandemic that I discussed in Chapter 12 will produce such a positive effect is unknown at the time of this writing. If it occurs it may not be possible to determine if the cause was the hand washing or some other factor, such as the feeling of solidarity that has been observed in many societies. The COVID-19 pandemic reveals at the same time that even experienced stakeholders in societies have a very hard time in making decisions when such an event is perceived as unique.

How can we contextualize this statement? First-time choices are often perceived as hard to make. If you have no experience and no information, making a choice is almost like tossing a coin. Try to increase exploration and your experience in these situations. If first-time choices are important, you may need to buy time and information and learn to trust your feelings.

#9: Embodied choices are tuned by evolution

In Chapter 10, I argued that evolution shaped our embodied choices. Most of our higher cognitive functions such as reading and speaking are most likely rooted in the sensorimotor system. Gesture communication is much older than the verbal communication we use today. The use of simple tools we needed to survive by making fire or hunting efficiently and the creative thinking that arose from using these tools may have been shaped by evolution. Even the simplest organisms such as the bacterium *Escherichia coli* with the most basic sensorimotor system and no brain seems to make quite impressive choices to survive. Animals such as the Caledonian crow I mentioned in Chapter 10 produce striking solutions to problems and some animals even outperform humans on some tasks. Neuroscience has made new discoveries about how the motor system is involved in language
understanding and production; for example, if the motor system is impaired, action words are more affected than nouns in speech production. I also cited Andy Clark, who indicated that our representation of the world comes about by acting in the world. Evolution shaped us to survive in changing environments and our body and our movements are the central interface with that environment.

How can we contextualize this statement? Well, evolution shaped our embodied choices and can be contextualized to any situation. I think, however, that we may need to accept with humility that our higher cognitive functions are based on very simple processes and that other animals may need a different treatment.

#10: Embodied choices can be trained

In Chapters 1–10, I tried to provide enough evidence and arguments to support the idea that choices are indeed embodied. The body and its current and past movements influence almost all of our behavior and the processes we often frame as perception, cognition, emotion, or something else. The given examples span very different kinds of choices in distinct domains, ranging from highly individual to large-scale societal decisions. In Chapter 11, I argued that embodied choices can be learned. One way to trust your intuitions and the bodily information is to learn implicitly. Do you remember the example I gave of how we learn our first language implicitly but any additional languages more explicitly? Or how Rich Masters from New Zealand showed that if you learn implicitly and are under stress you perform better and your working memory is not overloaded? These are just two examples of the need to create playful situations in which people can learn things without verbalizing and let the system gather information that later can be used for intuitive choices or gut feelings. Another way to improve such learning that uses embodied choices is time-pressure or dual tasking, as in both cases our so-called cognitive system does not interfere.

How can we contextualize this statement? Often, we do not have time to consider and wait for options. Trust your intuitions in these situations and use simple heuristics, as they are often built for these time-sensitive situations. If possible use implicit learning tools to make later decisions intuitive such that they become embodied.