

The Cambridge Handbook of Motivation and Learning

Written by leading researchers in neuroscience, learning science, and developmental, educational, and social psychology, the contributions to this edited volume are suitable for a wide academic readership. The chapters provide definitions of key terms related to motivation and learning, alongside developed explanations of significant findings in the field. They present cohesive descriptions of how motivation relates to learning, in addition to multiple perspectives on motivational constructs and their measurement. This handbook is meant to be a resource for a range of scientific communities, both basic and applied.

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K. Ann Renninger , Suzanne E. Hidi

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The Cambridge Handbook of Motivation and Learning

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Although psychology can continue to deal with the loftiest human aspirations, it also must become rooted in the evolutionary realities of the brain if it is to become a true science.

Jaak Panksepp
*p. viii, Affective neuroscience: The foundations of human
and animal emotions (Oxford University Press, 1998)*

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Foreword

How do you motivate your children to study in school and university, interact with friends, find a nice profession that interests and satisfies them, and stay honest and healthy, all at the same time? There are wide-ranging (and sometimes wild) opinions on this, ranging from generously pampering and bribing them via coaching and tutoring to the carrot-and-stick approach and the somewhat radical tiger moms. We all have our ideas about how to induce motivation for learning, how the two are related, and how to improve each. In addition, there are plenty of cultural prejudices and folk psychology that may have the best of intentions, but ultimately may not go far enough for the demands of modern societies built on evidence rather than irrational beliefs. What is needed is a coherent scientific approach that assures humane, rational, thoughtful, flexible, and open procedures. In these modern times, this approach should involve evidence derived from studying the properties of the underlying hardware, which in these cases is the brain. The current collection of chapters is exactly that. A number of psychologists, educators, and neuroscientists have written about their thoughts and draw on their empirical research to analyze the evidence, make predictions, and give advice.

Motivation is a funny thing. If you have too much, you may go around in circles, and if do not have enough, you cannot fulfill your dreams and intentions (and those of your parents and friends). You can derive motivation from rewards that you get from having done something well, and you may try again and again to get more of the reward. Reward is a powerful goal of motivated behavior and reinforces it. In particular, surprising rewards will make you go for more; they are often more efficient than rewards that are predicted. Goethe once famously said, “Nothing is harder than a succession of fair days.” Surprise generates attention and interest; it motivates you to get more of it. Thus, surprising rewards are good motivators. They are also very effective for learning. Once you get a surprising reward, you want more of it, and to do so, you may need to change your behavior, which is exactly what learning is all about.

But rewards are not the only motivators. Punishing an underperforming child reflects a general intuition that children will do things to avoid punishment and that punishment is a motivator. When it comes to carrot and stick,

a good reward will go a long way, but sometimes a little pushing can help (although, luckily enough, the proverbial stick no longer exists in its physical implementation). Another big motivator is novelty, which also attracts attention. Has there ever been a child that did not seek novel things? The child's drive is the curiosity that acts to seek out unknown things. But where children are full of curiosity and just love the novel stuff, we adults often avoid it as much as possible. As Douglas Adams, the author of the *The hitchhiker's guide to the galaxy*, famously quipped, "Anything invented after you're thirty-five is against the natural order of things." Adults just cannot understand how children always seek novel things. Let us give them a chance!

Of course, as with everything important and good, motivation has enemies. How can our children stay motivated in the presence of the great distractors, such as prejudice (class paranoia: only the rich can make it), social interaction (it is too tempting to play with others, rather than sitting down alone and studying things), celebrity (no higher effort required other than posturing and talking useless rubbish), and asset inequality (why do they have what I can't get?). Some children just do not understand why they need to spend time and effort to achieve something that may turn out to be beneficial only at some future point, when others seemingly can be big, famous, and rich without the effort. The social media on the Internet tells them so! The children are too young to anticipate the consequences of their compromised motivation.

All of the above could be interpreted to say that the brain is responsible for all of these behaviors. Yes, there are hardware systems for reward, punishment, attention, and curiosity, but these systems are not all that hard-wired. They are amenable to modification through experience, one of the great feats of neuroscience. Hopefully you will find it interesting to read about what is now available in the quest for understanding and improving motivation and learning. Happy reading!

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