

Tools for human-screen interactions

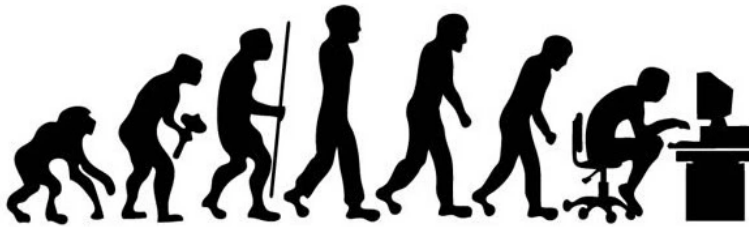
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Chapter 1

Screen adaptation theory



Context

Screens are a portal to information and to one another. Nearly 5 billion people as of 2022 use the internet. Treating screens and digital time only as a pathology neglects the inherent capacity for screens as a tool to promote higher levels of performance and novel approaches to problem solving. Mental models and the associated cognitive architecture that we frame conceptually to decision making is critical for better choices. The screen adaptation theory (SAT) is proposed herein as a heuristic to enable individuals to use evidence and structured thinking in approaching screen time decisions.

Screens are a place. Going to work, visiting friends, visiting the library, and many other key personal tasks and professional functions are done via screens. It can seem trivial, but labeling these choices, explicitly, provides a sense of coherence and purpose. Screens as a place also provides context and ecology. Adaptation is the sum of traits that an individual possesses or develops that promote survival or higher levels of relative performance without those traits. The goal must be to amplify and identify traits that mitigate the real costs of screens and tip the net sum to positive and higher levels of performance. Theory is a set of principles. Many discipline support screens as a place and

an adaptationist programme for screen time use. Source theory and scientific evidence depending the on specific context and choice.

Learning outcomes

1. Develop a new mental model for screen time.
2. Explore and track decisions associated with screen time.
3. Examine individual costs and benefits of screens.

Schedule

Here is an outline of the challenges proposed to explore these principles in this course.

challenge	focus	tasks
1	Screen adaptation theory	read screen adaptation theory, explore a few theories that support
2	Ten simple rules	test interventions, individually for your personal and professional
3	How to do nothing	explore liminal time and spaces to recharge and reframe how you

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Challenge time

Use Google Scholar and do a few search with screen time and for whatever personal challenge is most urgent. Screen time and memory or fatigue or focus or vision etc. Use the filter tool on the left to return hits from 2018 onwards.

Review slide deck for screen adaptation theory.

Read screen adaptation theory at Ideas in Ecology and Evolution.

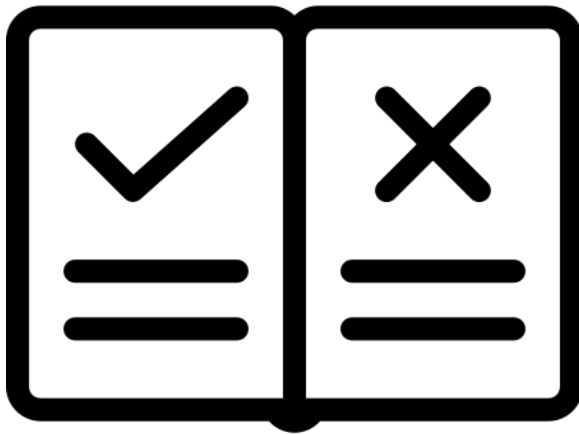
Track screen time use even cursorily. There are digital tools and functions included in the operating system of many devices. Or, go old school and have fun with it using a kitchen timer, stopwatch, or clock.

Reflection questions

1. Did any of the work associated with screen time resonate with your challenge? If so, did the evidence nudge or shift your model and thinking?
2. Do you use mental models for other dimensions of your life such as training, sleep, or performance? Does your employer or team adopt models for performance?
3. Did tracking confirm your assumptions on frequency and duration of screen time?

Chapter 2

Ten simple rules



Context

Rules help. Individually, simple rules can support emotional regulation and belief. Ten simple rules can be a magic number in science, and this format of paper has been an incredibly successful medium for best practices and sharing expertise. Make, use, plan, and use data were the most common themes in the first 100 papers of work in using this heuristic model published in PLOS Computational Biology. Ten simple rules for more objective decision-making is a compelling and relevant exemplar that supports structured decision making for screen time use. Break into smaller parts, mitigate bias, be transparent,

and beware cognitive dissonance. These are salient principles for screen time decisions. Here, rules are proposed specific to screen time use using principles for simple rules including have ten, have a vision, and support with research as needed.

Rules

rule	focus	description
1	Set intention	state purpose for every screen time instance; never ‘fill time’ with screen time
2	Track time	just a minute never happens; track time with some precision
3	Manage attention	attention and perception are intimately linked; be mindful of how you use screen time
4	Block work	label and block work; cognitive task switching is costly
5	Plan breaks	every 20 minutes, take 20 seconds to look 20 feet away
6	Weigh costs and benefits	Transparently assess the potential costs and benefits of a specific task
7	Include collaboration	Synchronous online interactions are more effective in most instances
8	Plan space	Real space matters; some spaces are conducive to deep work, others are not
9	Experiment	Experiment with your screen time and green time with physical activity
10	Set rules	Set rules for screen time use that work for you, your team, and your organization

Learning outcomes

1. Explore the behavioral trait reshaping capacity of life-hacking rules.
2. Examine some of the key evidence that supports your screen adaptation theory and personal development.
3. Change how you use screens.

Challenge time

1. Review the ten simple rules. Experiment with one per day/week for a few days/weeks. Small changes first. Track its efficacy.
2. Develop and test a cognitive energy budget, daily. Here is an example of a tracking exercise data dive for a scientist.
3. List any rules you were using for screen time (implicit or explicit).

Reflection questions

1. Document the extent that the rules improved your performance.
2. Do you have different screen time rules for your team or family than you currently adopt or would consider adopting?
3. Was there a place or time that screen time work was best supported for a specific work or professional task?

Chapter 3

Do nothing



Context

Doing nothing is an active process. It is not easy to ‘do’ at all. The book ‘How to do nothing: resisting the attention economy’ is a transformative and novel text. Accepting and generating liminal spaces is one premise for the book. Another is that nature and place can support restoration and reframing of perception. Attention and perception are linked in this work, and it is proposed that deep listening or looking at things differently will enable a much more nuanced interaction with screens. We then think differently too. The premise of this book is not optimization. Nonetheless, using nature, art, and liminal experiences to be

mindful of attention directly support better screen time decisions. A gate-and-key model for attention and perception is developed throughout the text. We have an incredible perception network biologically in how we, see, hear, and feel. Attention drives what we perceive. This should be an active decision - always. Screens are one of the phenomenal metaphorical nets that catch our attention in so many ways. Use attention to decide what to focus on. Resist in place. Continue to use screens and digital tools of course but do so much more wisely through attention management and liminal, preferably, natural/local/outdoor restoration time.

Learning outcomes

1. Understand the key trait-mediated interactions that you curate digitally and physically in your life.
2. Become aware of your daily digital routines.
3. Appreciate how attention drives perception with respect to screen time and beyond.

Challenge time

1. Practice liminal and logical breaks. Walk to work. Try walking meetings or calls.
2. Try seeing things differently or hearing them via redirecting attention to novel components of a signal or information that an experience provides. This can include screens too - tool bars, ads, or any elements of digital work. Where do you focus and how do you listen? Apply this attention-focus awareness for meetings - real or virtual.
3. Read this review of how to do nothing.
4. Explore some the literature associated with nature deficit disorder.
5. Review this slide deck on how to do nothing - actively.

Reflection questions

1. You are never alone in nature. Did this proposition resonate in any of the times you secured for a break/walk or mini-adventure between screen work instances. Did any of your affective components shift internally?
2. In your daily routine, was there 'space' for attention to other experiences? Did you notice any opportunities that were already present for practiced awareness of the gate-and-key model but were unexploited?

3. Can you invoke some ecology (organismal-others-environment) thinking to improve your performance either through liminal moments or direct opportunities within the digital work that you do?