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THE GOLDFISH JURY: Got your Attention?

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"Now you seem me. . .now you don't!" ~ Talladega Nights

ABSTRACT

This paper investigates the extensive societal disruption caused by the COVID-19 pandemic (2021–2023) and its lasting impact on human attention and social interaction. It highlights how the pandemic not only increased death rates from respiratory infections but also significantly hindered interpersonal learning and communication by isolating individuals. Evidence from the NEAP 2024 indicates a measurable decline in academic performance, with average reading scores dropping by two points among 4th and 8th graders, suggesting that educational disruptions have long-term cognitive effects. The study further explores the concept of a "Kessler Effect of Human Attention," drawing an analogy to the cascade of space debris, where the overwhelming flow of digital data and algorithm-driven content leads to fragmented focus and diminished deep thinking. Additionally, it examines how age-related differences in attention processing and decision-making are influenced by the loss of traditional, interpersonal interactions, calling for new strategies to counteract information overload and maintain societal cohesion.

Keywords: Kessler Effect, neuroanæsthesia, selective attention, hungry judge effect, digital drift

The COVID pandemic 2021-2023 not only generated a significant increase in the death rate from respiratory infection. It also created massive societal disruption that, ironically, revealed one of the defining characteristics of human society: humans, it would appear, are pack animals, much like wolves. The ability and the tendency of humans to group for mutual learning experience as well as social interaction was blunted by the pandemic.

Indeed, the contrast between the pre-COVID society and the pandemic society was dramatic. Even after the passage of two years since the end of the pandemic, human society has not fully recovered a "normal" appearance. This is most readily visible in the apparent decline in intellectual

performance between the pre-pandemic and "pandemic survivor" components of the population. The NEAP for 2024 reflects that average reading scores declined by 2 points for both 4th and 8th grade students compared to 2022. The 8th graders would be the ones most directly impacted by the pandemic due to the school closures nationwide.[1] One of the results of the pandemic, particularly in academic life,

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was the closing of educational institutions. The pandemic, therefore, had the effect of nullifying one of the key components of the educational process: interpersonal contact and conversation both among students and with teachers.

One result of this disruption of "normal" human interaction has been a discernible diminution of the attention span. This arises in a very popular analogy with the goldfish, namely that a goldfish has a longer attention span than a human being. Some studies support this.[2] Those studies, however, seem to be derived mostly from a 2015 "study" sponsored by Microsoft Corporation. After a study of 2000 Canadians and the EEG's of 112 participants, it concluded that The average human attention span in 2000 was 12 seconds, but by 2013 it was only 8 seconds (1 second shorter than a goldfish!).[3] Unfortunately, beyond this widely cited study, there seems to be little, if any, serious scientific evidence to support either the notion that a goldfish has a longer attention span than humans or that the human attention span is shrinking.[4] It would appear, though, that studies focusing on the attention span of human beings in the post-pandemic period have discovered that there may have been a modification of the attention span on a large scale.

Whether in reference to the pre- or post-pandemic environment, it has been noted that "we have gone from an age that was meaning rich but data poor, to one that is data rich but meaning poor. . . [,and] this is an epistemological revolution as fundamental as the Copernican revolution".[5] Keeping in mind that Boorstin was writing some three decades ago, the ability of technology to gather and classify data, whether "real" or "virtually real" renders this a classic of understatement. For example, the rise of social media, 24/7 news cycles, and endless digital entertainment creates an information-saturated environment with which the human brain must contend. When combined with the societal dissociation that accompanied the pandemic, one possible effect is that attention has become fragmented across, and because of, multiple streams of content.

Indeed the problem sometimes referred to as "Big Data" has been amplified with the more recent enthusiasm for experimentation in the application of AI. When AI-powered recommendation engines (e.g., TikTok, YouTube, Twitter) optimize for engagement, prioritizing shorter, emotionally charged, and often polarizing content, this can lead to dopamine-driven cycles of instant gratification, reducing the human ability to focus on long-form or nuanced discussions. The phenomenon can be analogized to the Kessler Effect common in space exploration.[6] As applied to the issue of the attention span, the "Kessler Effect of Human Attention" could be described as a self-reinforcing fragmentation and overload of human focus. This would occur when the exponential growth of digital distractions, information noise, and algorithm-driven content fragmentation creates a runaway cycle that diminishes meaningful engagement, deep thinking, and societal cohesion.[7] Similarly, if a disproportionately large stimulus should be present, the appearance of a diminished attention span could well reflect the inability of the brain to process that stimulus leading to the exclusion of other stimuli, a form of neuroanæsthesia. When combined with the dissociation created in the society, it is clear that this "information overload" creates a general level of "background noise" that fosters a thought "echo chamber" in individuals. The result is the diminution of the "pack animal" characteristic of human society that has fostered its positive evolution up to the present day.

Studies have shown that attention span can vary with age, race, gender and activity levels of individuals.[8] As a general proposition, however, it may not be so much that the human attention span has gotten shorter. What may well be in issue is the ability of the human mind to engage the plethora of new information that technology throws at us on a daily basis.[9] At its most basic, the human mind can engage in selective attention, i.e. focusing on a specific stimulus while ignoring other, with little difficulty. The problem arises when there is a

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variety of stimuli arriving at the same time, manifesting itself in such conditions as ADHD.

Put another way, it may not be so much a matter of the attention span is getting shorter. It may well be that the amount of information "out there" makes it difficult for the human sensory apparatus to distinguish between factually-based data and "noise" that may or may not be factual. Such a situation is time sensitive in that the human brain gets tired, so it is important that key, factual data is introduced early in the attention span period. These issues arise in the "real" world of the law and academics, particularly pedagogical theory.

For example, research on sustained attention indicates that while young adults (around 25) maintain optimal attention for slightly longer periods than older adults (around 80), the underlying mechanisms can be different.[10] Younger adults often benefit from faster processing and a greater sensitivity to novelty and rapid changes (bottom-up processing), whereas older adults may lean more on top-down control strategies, focusing on familiar or task-relevant information even if their overall processing speed is reduced. Additionally, age-related sensory changes (such as diminished vision or hearing) can influence which aspects of a complex stimulus are most salient to an older person. What is important is that both age groups can attend to the same types of environmental stimuli, but the way they engage with—and process—those stimuli tends to differ. While a 25-year-old and an 80-year-old might both be exposed to the same stimuli within a given time span, they might “pay attention” in different ways—selecting different details, processing them at different speeds, or prioritizing aspects that are most relevant based on their accumulated experience and cognitive control strategies.

In those activities that inherently involve decision-making, the quality of the decision can be affected by a variety of factors. For example, the "hungry judge effect" describes the gradual diminution of the quality of decisions over a given period of time.[11] A dose of "legal realism", however, challenges the traditional view that legal judgments can be mechanically or logically derived from official legal materials, such as statutes or cases.[12] Indeed, it has been pointed out that "The life of the law has not been logic; it has been experience. . . ."[13] Such extraneous factors as ideology or policy preferences of the judge, inherent biases, and even intuition can, and often do, impact this process.[14]

In today’s world, psychological and linguistic researchers who scramble to preserve a prior sense of reality find themselves in the center of a new universe defined by the screen. Like Kroker before them, contemporary criminologists call this *digital drift*, where highly-online youth and other second-generation digital natives increasingly blur material and virtual reality.[15] At that point, they can become criminalized, overcome by what Virilio might call an emerging glaucoma reality. . .a "silently blinding disorder".[16]

It is axiomatic in the training of trial lawyers, for example, as to the importance of frequency and recency in the presentation of evidence, particularly to a jury. One of the first things that a law student learns is that the jury must be kept focused on the subject matter of the case. The problem with that concept is that it assumes that the average citizen (which is, after all, what composes jurors) is a constant value that ignores age, gender, and other factors that may randomly affect the decision. Obviously, it also would be important to pay attention to the composition of the jury so that the timing is aimed at the mid-point of age and gender factors to maximize impact without approaching the Kessler Effect of Human Attention.

What this means in practical application is that, in conventional litigation, the lawyer should present the strongest evidence earliest in his/her case in its simplest form and repeat it from various angles, even with various witnesses throughout throughout. In more complex litigation, such as in lawsuits involving scientific or space concepts and terminology, such an

approach is even more important. Since the jury is the decision-maker in a trial, it would seem that the most effective presentation would be to put the key evidence on at the very start of the case so as to grab the attention of the jury quickly. From that point forward, the repetition is less likely to be boring to the point of losing the attention of the jurors.

It should be noted that similar factors should be considered when preparing a course, regardless of the topic. In effect, the choice of content involves similar decision-making actions as would apply in the case of a judicial decision.

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[2]Simon Maybin, "Busting the Attention Span Myth", BBC News, March 10, 2017. https://www.bbc.com/news/health-38896790.
[3]Cited in Kevin McSpadden, "You Now have a Shorter Attention Span Than a Goldfish", *Time*, May 14, 2015.

[7]This is condensed from comments by Prof. Roger F. Malina, an astrophysicist.
[8]See Sedona Sky Academy, "Average Human Attention Span By Age:: 35 Statistics", 2024; https://www.sedonasky.org/bllog/average-human-attention-span https://www.sedonasky.org/bllog/average-human-attention-span
[9]Nick Morgan, "What's Happened to Our Attention Spans During the Pandemic?", *Psychology Today* (March 15,2021).
[10]See pmc.ncbi.nlm.nih.gov.
[11]Andreas Glöckner, "The Irrational Hungry Judge Effect Revisited: Simulations Reveal That The Magnitude of the Effect is Overestimated",*Judgement and Decision Making*, Volume 11, Issue 6, (Cambridge University Press, November 2016), 601-610. doi: https//:doi.org.10.1017/S1930297500004812.

The pedagogical validity of the presentation and references necessarily would be a function of the composition of the class to whom it was delivered. Put another way, in a modern university setting, it would not be uncommon to have a class composed of 20 year-old and 60 year-old students, with similar objectives, yet different mechanisms for the acquisition of information.

At the same time, we should not take a jury or a classroom of goldfish for granted. After all, in the first few minutes, it can receive enough information to make a good decision.

[4]See Maybin, *supra.*[
[5]Daniel J. Boorstin, *Cleopatra's Nose: Essays on the Unexpected*, (New York: Random House, 1994).
[6]A scenario proposed by NASA scientists Donald J. Kessler and Burton G. Cour-Palais in 1978 in relation to collisional cascading of "space junk" in low Earth orbit creates a dangerous environment.

[12]John McClellan Marshall, "Examining Judicial Decision-Making: An Axiological Analytical Tool," *29 Studia Iuridica Lublinensia 3,* 55-65 Summer 2020.
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[14]*G*löckner, *supra* at 602.
[15]Matthew J. Donovan, "Automating Reality and The Ambient Self", *Academia* (Zora Zine 2023), citing Arthur,Kroker and Marilouise Kroker. 2021. "Technologies of the New Real." University of Toronto Press. October 2021. 21 and Andrew Goldsmith and Russell Brewer, "Digital Drift and the Criminal Interaction Order." *Theoretical Criminology* 19 (1): 112–30.
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