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RESEARCH ARTICLE

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The Sport of Bridge for a Sustainable "*Digital Transition*"

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ABSTRACT

The process of digitalization that colonizes every aspect of human life and infiltrates every crevice of the social fabric by mean of devices, applications, algorithms, platforms, and artificial intelligence (AI), pushes us to reflect on the evolutionary destiny of the human brain in an increasingly dissolved and dehumanized society.

In particular, mass screen-addiction and other antisocial digital-related phenomena as cybercrime and cyber insecurity, probably the most paradoxical and counterproductive side adverse effects of digital, urgently require countermeasures to protect human brain, collective intelligence, and society as a whole, in order to make "*digital transition*" more sustainable.

The main purpose of this contribution is just to problematize the issue of the devastating consequences of digital and to raise the hypothesis that the systematic promotion of a team mind sport as Bridge in schools can result an useful "digital detox" intervention to someway combat screen-addiction and to promote sociability.

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"*We are in a race against time to impose safety protocols before new generative AI systems become too powerful to control*"

Dario Amodei, *"The adolescence of technology" (www.darioamodei.com; january 2026)*

Introduction

The colonization of every aspect of human life, the infiltration of every crevice of the social fabric by devices, applications, algorithms, and digital platforms, produces negative side effects such as mass screen addiction and the spread of cybercrime. The cultural, health, and social implications of these effects can no longer be underestimated, given that the evolutionary destiny of the human brain is at stake in an increasingly disintegrated, dehumanized, and depoliticized society.

The purpose of this paper is to draw attention to the pandemic phenomenon of screen addiction and to stimulate reflection on the urgency of having to protect our brain and human society at all costs from the irrational and destructive self-referential trajectories taken by technological progress.

The systematic promotion of Bridge sport in schools and university colleges could represent an interesting *digital detox* strategy to make *digital transition* more sustainable.

According to Butler digital (devices, contents, platforms, etc) would seem specifically designed to be addictive, and pathogenetic mechanisms of video addiction overlap with those of drugs and other toxic conditions: same biological substrate (dopaminergic pathways, limbic system, amygdala, prefrontal cortex, temporal areas, cytoarchitectural plasticity, cue reactivity, same reward circuitry, same tolerance and withdrawal symptoms.

In particular, people suffering from pathologic addictions show the same uncontrollable obsessive-compulsive behaviors; in the case swiping, clicking, scrolling, tapping, addiction to alerts and likes, etc etc.

In parallel serious behavior and relational problems arise due to the morbid attachment to the internet, search engines (Google, Bing, Yahoo, etc.), social media (TikTok and Instagram first and foremost, among young people), video games, e-commerce portals, and videoconferencing platforms. Children, adolescents and young adults, for whom the condition of morbid attachment to digital devices and social media platforms seems a completely normal condition, represent the subjects most at risk of developing psychiatric and social disorders someway related to screen addiction, for biological and cognitive reasons.

The synergistic effects between massive overexposure to the electromagnetic field emitted by devices and antisocial messages and contents by web and social media have long been reported as a possible source of health and sociopathic risk for children and young people, and some researchers believe that video addiction can be a risk factor for dementia.

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It's no coincidence that the World Health Organization (WHO) and the American Academy of Pediatrics (AAP) have long been sounding the alarm, also considering that in addition to psychiatric problems, we must also consider the indirect effects of screen addiction (sedentary lifestyle, disaffection from sports activities, isolation, linguistic decline, etc.), and a whole series of pathologies, from ophthalmological (asthenopia, dry eye), to orthopedic (scoliosis, tendinopathy), oncological, reproductive (infertility), not to mention work and car accidents and professional errors due to distraction, inattention, and multitasking.

Already in 2002, in the "3G era", in the book "*Liquid Modernity*" Zygmut Bauman denounced how the process of digitalization was producing a society of video-addicts, alienated, stupid, incapable of maintaining stable, lasting, meaningful relationships with their peers, conformists, docile.

After more than twenty years, and having observed two more generations of mobile telephony, he entrusts a posthumous book, "*Retrotopia*" (2017) inviting humanity with still lucid and critical brains to do everything possible to keep the flame of utopia live, and dream of a return to an analogic re-humanized world.

In fact an unchallengeable tsunami of AI-powered algorithms, social anthropomorphic robots, self-learning and autonomous machines, sensors, metaverses, avatars, digital twins, injectable nanodevices, biocomputers, all connected in an increasingly dense technosphere by Internet of Everything (IoT), imposes new and changing conditions of adaptation on humans, subverts the way we relate to each other, to form identities and literally splits life itself between *online* and *offline* dimensions.

Far from belonging to the category of acritical "*apocalyptics*" and technophobes, given that my field of work (Diagnostic Imaging) is highly technological, and that many advantages of digital are indisputable, I point the torch of this polemical reflection straight on the hidden face of digitalization, the apotheosis of the instrumental rationality of capitalism driven by acceleration, in order to illuminate some of the most "inconvenient" aspects, that is unforeseen, unwanted, and perverse side effects that, causing widespread moral and existential discomfort, alienation, collective stupidity, and dissolution of interpersonal bonds, they risk "vaporizing" the current "*5.0 liquid society*". Rather, on the contrary, by thinking in a constructive way, we need to propose and implement strategies to combat trends that could prove destructive and catapulting us toward somewhat dystopian scenarios.

The sport of Bridge could theoretically be included among these "social therapeutic" options due to its ability to stimulate the entire brain and promote collective intelligence and sociability, as a pair and team game that requires cognitive effort combined with coordination and strategic interaction.

This paper is just an attempt to scientifically support the idea that promoting Bridge in schools and university colleges, possibly combined with "*detox interventions*" and "*digital literacy*" educational workshops, can contributes somehow to make more sustainable the digitalization process and, particularly, to mitigate the phenomenon of mass video addiction.

The following discourse, in which I try to synthesize the most recent data extracted from a fast selective bibliographic sample (including 23 qualitative sociologic surveys and 24 papers between solid systematic reviews and meta-analyses, what in my opinion is ultimately a representative sample of the state-of-the art regarding the topics covered) obtained by searching on Google Scholar and PubMed full-text articles in English, freely available online, published between 2020 and 2025, using the following keywords: *Bridge card game, mind sports, digital dementia, digital alienation, scree- addiction, video-addiction, internet-addiction, social media-addiction, digital detox interventions.*

These data essentially update a vast and varied body of literature, spanning multiple disciplines, which leads us to believe that now the risks far outweight the benefits and that transition toward the imminent 5.0 society driven by 6G, AI powered alghorithms and IoE must be strictly controlled.

1. Acceleration, Alienation, Digital Dementia

Although the topics of the ambiguous, contrasting, and ephemeral effects of technology and, more in general, of the relationship between *psyche* and *techne* have always been discussed, and "*integrated*" and "*apocalyptics*", technocrats and technophobes have always accused each other of preventing the progress of human civilization, the level of acceleration reached today by technological trends no longer seems to be socially sustainable.

The dizzying digitalization of life and work makes man increasingly alienated because for sometime technique has no longer been a means to optimize resources but an end in itself, that is, self-referential, tends simply to self-empower.

The post-Marxian "*frankfurtists*" focused on the discourse of alienation related to the technological acceleration. In particular, following Erbert Marcuse (*Essay on Liberation*", 1969), now the *reification* of man today seems to reach its highest level by exploiting the masses of video addicts as an inexhaustible producer of immense quantities of big data and digital traces, most of which just supplied by *e*-Health, *i*-Health and *m*-Health.

In parallel the school undertakes to adapt to Industry new models centered on generative artificial intelligence (*GenAI*), by focusing on *digital skills* but discouraging handwriting, book reading, critical thinking, and teamwork; the *Med-Tech* faculties are responsible for training video addicted doctors increasingly unaccustomed to clinical practice, required to increase the productivity of the equipment; the *mcdonaldized* public administration promotes *functional* ignorance and stupidity in order to avoid jamming bureaucratic procedures; the world of sports is made largely addicted to *wearable* biosensors and genomic drugs to bring performance to an increasingly extreme limit.

In the face of this undeniable massive artificialization it's difficult to keep obtimism about the destiny of an alienated,

idiotized society, which also ages quickly, made unable to change the status quo.

According the "*dromological*" perspective of Rosa, digital acceleration, while making human life increasingly easier, more convenient, and (above all) more fun, produces growing frustration and alienation because competition and competitiveness force us to incessantly chase innovations, dramatically widening the spectrum of opportunities that will remain largely unexplored and unattainable, fueling what Bauman says "*the struggle of all against all, but against no one in particular*".

People, artfully manipulated by the media bombardment, take for granted that they must perform at all costs, have to hurry, run to save as much time as possible, to avoid being left behind, out, excluded, to keep up with the times. But we rush to buy the latest innovation when what we own has not yet been fully understood and has remained largely underused, not exploited at all.

Therefore, the current forms of alienation push psychiatry to update the DSM-5-TR (2023) in order to include new diagnostic criteria and interventions to cope "*digital risks*", "*digital disorders*" "*technostress*", all conditions potentially able to evolve towards paralyzing and disabling "*burnout*" syndromes.

The link between alienation and addiction is circular, and the mutual reinforcement of the two conditions causes non-specific clinical pictures including amnesia, memory difficulties, intellectual disability, attention and concentration deficits, dissociative, depersonalization and derealization disorders, cognitive fragmentation, difficulty empathizing, pathological narcissism.

The role of the sleep is crucial, because addiction also causes insomnia and difficulty falling asleep. The qualitative and quantitative decline of sleep in turn produces confusion, daytime sleepiness, irritability, difficulty concentrating, listlessness, chronic fatigue, which in turn aggravate stress and mind functions, and, again, addiction.

In general video addicts show uncontrollable behaviors ranging from the "*Google effect*" (people instinctively asks the most trivial question on his cell phone), to "*nomophobia*" (= no-mobile phobia), a painful syndrome that manifests itself with panic attacks triggered by a sudden disconnection, lack of signal, loss or malfunction of the cell phone, to "*FoMo*" (= "*fear of missing-out*": the obsessive fear of being "*cut off*" if one losses the internet connection).

As regards "*digital dementia*", a clinical concept introduced by Spitzer in 2014, the most recent studies using fMRI and PET have demonstrated in samples of video addicts similar dysfunctions and structural brain alterations detectable in patients suffering from Alzheimer's dementia.

Just like these elderly patients the video addicts show childish behavior, memory loss, amnesia, stupidity.

In addiction has been hypothesized that intelligence regresses from the "*analytical-sequential*" mode, suited to understanding an analogic world nourished by multisensory awareness and practical experience, to the "*holistic-simultaneous*" mode, stimulated simply by visual culture and screen-mediated experience.

This cognitive process just dominated the mind of the cave hominid who, 250,000 years ago, communicated and socialized through pictograms and onomatopoeic sounds.

Finally, we mention the registration of the "*reverse Flynn effect*", indicating a progressive decline in the collective intelligence quotient.

Remeasuring the "*Engelbart Index*" in a few years, when the figure of 9.7 billion phone subscriptions will be reached and 6G will become the operating standard, could therefore help us understand whether the increase in rates of school failure, illiteracy, mental distress, depression, social unease, and suicidal tendencies is somehow related to the digital among the Z Gen digital natives.

According to Walter Sani ("*La fuga immobile*", 2025) our adolescents seem to suffer from an alienating "*sense of profound bewilderment due to the conflict between the desire to escape from the real world and the inability to move*", and we cannot rule out at all that video-addiction and mind disorders riggered by cybersecurity flaws, hacking, cybercrimes, could be further exacerbated by the next AI applications.

2. The Collectivistic Core of Bridge: Sociological Features

Bridge is intrinsically a pro-social game because both partners need to communicate and coordinate strategically each other, to open theirselves to the other, to replace egocentrism with altruism, the "I" with the "We".

This interaction inevitably produces collective intelligence, a shared mind that is something far superior to the simple sum of two single minds, it allowing the pair, the group, the team to succeed in a competitive situation.

Bridge stimulates deeply the mind and requires both continuous training of higher mental functions and of couple and team harmony to improve sports performance.

The main cognitive functions involved in the dynamics of the game are the following:

- **numerical and visuospatial memory:** in the initial process of "*hand typing*"
- **probabilistic logic:** in evaluating the "*distribution of remainders*" in the second stage ("*playing cards*") of the game
- **decision-making processes**: since each "*deal*" is essentially unrepeatable, one must constantly face, resolve new problems, make moves under time-pressure

- **thinking activities:** *critical* (deductive reasoning based on what one observes at the table); strategic (planning the sequence of moves, predicting the opponent's possible countermoves: "*declaring's* plan" *vs "defender's* plan"); *lateral* (which, compared to rigid vertical, logical-rational thinking, allows one to flexibly find new, creative, and non-schematic solutions, approaching the problems posed by the deal from different perspectives)

- **Attention and concentration (*focus*):** one must remain focused at the table without being distracted by the outside world or by negative thoughts and emotions

- **Emotional intelligence:** self-awareness; management of unpleasant emotions; empathy (*sympathetic interactions*); communication skills

Essentially in this mind sport the players are required to train in exercising together with the partner logic, emotional and relational skills in order to be able to manage one's impulsiveness, emotionality, involuntary expressiveness, to make decisions and to exchange clear messages.

In addiction in this social game the dialogue between partners shows at least two fundamental characteristics. The first one concerns a particular form of symbolic coded communication, in the case mediated by the sports tools (*bidding cards*), whose linguistic rules are organized in a chinese box-like system (*bidding system*), and the messages (*declarations*) are exchanged in a transparent way, assessable by anyone, even an external observer. Therefore, unlike other games, for example poker, Bridge does not allow for bluffing or "masking moves" at all, but information have to be evaluated by everyone, so also eventual "*partner agreements*" have to be previously announced (*alerted*) and explained to the opponents.

The second feature of this form of strategic communication is that paradoxically the dialogue is mute, that is exclusively based on "*communicated information*" mediated by the bidding cards posed on the table: both verbal and expressive component provided by paralinguistic signs (mimicry, gestures, postures, agreed-upon actions) are banned (in certain tournaments even a "*curtain*" is used to prevent the two partners from looking at each other). A symbolic mute communication is also adopted by the pair of *defenders* when playing *tricks*, in an attempt to put "down" the declarer, by assigning a certain meaning to the cards (for example "*like*", "*rejection*", "*preference*").

Not surprisingly due to this conceptual complexity Bridge is suitable for both educational and even clinical purposes. In the training field Bridge would integrate well with pragmatic approaches such as "*learning by doing*", where mistakes represent a valuable source of knowledge, and "*gamification*", making the learning experience more motivating and rewarding. In medicine, we expect positive results from some trials conducted in various countries where Bridge is experienced in the attempt both to slow down the progression of early dementia and to promote socialization among elderly.

At the Stirling University Professor Samantha Punch uses Bridge as an ideal model to explain the mechanisms of strategic interaction that occur in the ordinary life. Just as it normally happens when people meet, especially for the first time, the players=social actors in addition to making a good impression, they must try to collaborate for mutual interests. In these situations, just as in a Bridge match, people act strategic interactions by evaluating the cost/benefit ratio of every decision and every play. At the same time, they must cope impulsiveness and negative feelings, keep focused on the context, avoid making mistakes that can compromise communication. As a perfect metaphor for life, Bridge teaches us that we must trust in others if the goal is shared and empathize with the partner in order to cooperate synergistically.

Even Goffman, in the book "*Strategic interaction*" (1969) cites Bridge as an example of a "*zero-sum*" tetrad situation - a context that can be assimilated to a game in which two pairs of opponents compete for the same goal - where cooperation and coordination is mandatory to obtain the maximum benefit from a mutual exchange in order to win a prize ("*pay-off*"). In particular, from this "*dramaturgical*" or "*choreographic*" perspective, we can imagine a match of Bridge as a theatrical performance ("*on-stage*") in which the players=social actors play roles, as per the script, trying not betray the audience's expectations (although improvisations=transgression of norms are tolerated by the "*system*"). But in this special case the players/actors are mute and have to "*wear a mask*" making them serious and inexpressive, leaving the task of exchanging information to the symbolic communication mediated by the *bidding cards*. Only after the *curtain falls*, in the post-match ("*on-backstage*"), players finally remove the masks, take a breather, relax, regain their own identity, discuss about errors, perfect agreements and playing styles.

Other clues to the socializing nature of Bridge come from Social Physics. By mean of statistical models using the myriad of *digital traces* and *big data* that we "*scatter everywhere like bread crumbs*", according Alex Pentland, it's possible to predict the trend of complex social systems, result of non-intended interactions between social atoms=social actors, by considering them as material structures subjected to the laws of physics. In "*The Social Atom: Human Behavior and the Laws of Physics*" (2008) Mark Buchanan explains as the ontologic tendency of humans to socialize, this innate altruism of the "*social atom*", leads to the formation of "*structures*" that can be analyzed mathematically, just as Auguste Comte, the founder of Sociology, had imagined in 1826.

Finally, Bridge can be adopted as psycho-technique, involving someway both the management of "*slow*" and "*fast*" forms of rationality, the organization of thought, and the putting under control instincts and emotions. And when we face with an unusual problematic "*hand*", we can even try to rely on faster forms of decision-making, based on intuitive, creative, non-stereotyped mental approaches: we can basically reinforce the altruistic mind that allowed our hunter-gatherer ancestors to form societies.

Punch also underlines that despite being an intellectual sport, Bridge requires a certain amount of physical activity (*physicality*), just like in motor sports the mental coaches take care of the athletes' mind. But the physical tiredness, the stress that players usually express after a tournament three/four hours long, is well repaid by a strong sense of satisfaction and gratification, and this positive mind status is the main factors both motivating to continuously improve sports performance, producing a healthy feeling of well-being, and reinforcing a sense of belonging to a community.

And, finally, let's also mention the manual aspect, requiring an high level of "*hand-eye coordination*", given the large number of practical operations to be performed correctly by managing boards, playing cards, bidding box, bidding cards; score forms.

3. Limitations and Final Considerations

The complex of the more recent scientific evidence and theoretic reflections that I have tried to summarized in an eclectic discourse push us to believe that the sport of Bridge seems to have enormous potential for in some way and to some extent counteracting a whole series of anti-social and idiotizing converging dynamics and trends, directly and indirectly related to digitalization, despite we still lack the support of rigorous clinical trials and follow-up/ longitudinal long-term studies concerning both "digital detox interventions" in groups of video-addicted students and "*Bridge experiences*" in groups of elderly people suffering from dementia.

Other relevant problems, therefore the empirical demonstration of the health and social benefits of the Bridge sport still remains actually limited, come from a very narrow bibliographic online search, having used only two among the most popular search engines, and then excluded an amount of abstracts and paid full-length papers.

Anyway, not being able to swear on the "*sociotherapeutic*" effectiveness of the Bridge sport and without the slightest pretense of carrying out a "*systematic review*" on the issue of the adverse effects of digital, the present critical reflection essentially aims to draw attention to a complex socio-technical phenomenon, the digitalization process, that risks to be irrational and uncontrollable, worsening the continuous emergencies that more and more alienated humans are no longer able to face without turning to alien and artificial intelligences.

It is no coincidence that the *Mind Health Report* 2025 shows that at least a quarter of the population suffers from some form of mental disorder, and that a full half of young adults show serious signs of alienation. Italian ISS informs that the incidence of mental distress among young people exceeds the continental average, emergency room visits for acute mental disorders related to alienation and technostress are increasing exponentially, and serious criticalities exist in the field of psychiatric care, with funding well below the world average, equal to 14% of global healthcare spending.

To avoid relapsing into a baumanian "*retrotopic nostalgia*," to flow solipsistically back into memories of the great beauty of the old analog days, all we have to do is act actively to make the transition toward the "5.0 Society" more sustainable. In my opinion, the proposal to promote the sport of Bridge among young people both as a strategy of digital detox and a contribution to mitigate mass video-addiction cannot be underestimated.

References

[1] Adorno T W. Dialettica negativa, Einaudi. 1970.

[2] Akhtar S. Technology the genesis of addiction, Plat Atarva Publ. 2023; 14.

[3] Ali Z, Ianarthanan I, Mohan P. Understanding digital dementia and cognitive impact in the current era of the internet a review, Cureus. 2024; 16: e70029.

[4] Alimour S A, Alrabeei M. Redefining psychopathology in the context of digital overload emerging disorders in the age of information saturation, Front Digit Health. 2026; 7: 1693287.

[5] Allen R M, McLaren P. Protecting the university as a physical place in the age of post digitization, Postdigit Sci Educ. 2022; 4: 373–393.

[6] AlMuraikhi M, AlMamari M, Nazeer A. Terminology in transition a systematic overview of terms used to describe gaming related addictive behaviors, Pediatr Child Health Issues. 2025; 5: 1–12.

[7] Alvesson M, Spicer A. The stupidity paradox, Profile Books. 2016.

[8] Amodei D. The adolescence of technology, Website. 2026.

[9] Amos J G, Zheng L, Ermudugolla R, Andrews S C, Anstey K J. A scoping survey to inform design of digital dementia risk reduction interventions for adults concerned about their cognitive health, J Alzheimers Dis Rep. 2024; 8: 697–708.

[10] Anandpara G, Kharadi A, Vidjia P, Chaudhan Y, Mahajan S. A comprehensive review on digital detox a newer health and wellness trend in the current era, Cureus. 2024; 16: e58719.

[11] Andreoli V. La vita digitale, Rizzoli. 2007.

[12] Andreoli V. La famiglia digitale come la tecnologia ci sta cambiando, Solferino. 2021.

[13] Asimov I. Sogni di robot, Il Saggiatore. 2014.

[14] Balcioglu Y S, Biyiklar M A. Analyzing nomophobia among TikTok users a data mining and text analysis approach, Curr Psychol. 2025; 44: 18220–18242.

[15] Bhattacharya K, Kaski K. Social physics uncovering human behaviour from communication, Adv Phys. 2019; 4.

[16] Bay H, Gao K. The study of social media alienation in the digitized world, Adv Soc Sci Educ Humanit Res. 2021; 571.

[17] Berezin G. A bridge to better health, Psychol Today. 2001.

[18] Berthoud E, Elderkin S. Curarsi con i libri rimedi letterari per ogni malanno, Sellerio. 2021.

[19] Blajet P, Przyborowska B, Kedziora Kornatowska K, Rubacha et al. How learning to play the game of bridge affects well being and cognitive skills of the elderly pilot study, Nicolaus Copernicus Univ. 202.

[20] Brautsch L A S, Lund L, Andersen M M, Jennum P J et al. Digital media use and sleep in late adolescence and young adulthood a systematic review, Sleep Med Rev. 2023; 68: 101742.

[21] Butler M. Fracturing the affordance space an account of digitalized alienation, Front Psychiatry. 2024; 15: 1407586.

[22] Carr N. Internet ci rende stupidi, Cortina. 2011.

[23] Christakis D A, Hale L. Handbook of children and screens, Springer. 2025.

[24] Clarkson Smith L, Hartley AA. The game of Bridge as an exercise in working memory and reasoning. J Gerontology 1990; 45: 233-238.

[25] Coronel-Oliverso C, Medel V, Orellana S, Rodino J et al. Gaming expertise induces meso-scale brain plasticity and efficiency mechanisms as revealed by whole-brain modeling. Neuroimage 2024; 293: 120633.

[26] Crespi F, Cerulo M. Il pensiero sociologico, Il Mulino. 2022.

[27] Cross E S, Hortensius R, Wykowska A. From social brains to social robots applying neurocognitive insights to human robot interaction, Phil Trans R Soc B. 2019; 374: 20180024.

[28] Diamond M C. Bridge and its effects on the immune system, Cogn Brain Res. 2001; 12: 329-331.

[29] Dimonte M. Elettrosmog progresso salute, Levante Ed. 2005.

[30] Dimonte M. Social and health sustainability of 5G technology the side unpredictable effects of the unchallenged digitisation of society, AJ Prev Med Public Health. 2020; 6: 134-137.

[31] Dimonte M. The counterproductive side effect of 5G considerations in the time of pandemic, J Prev Med. 2020; 5: 9.

[32] Dimonte M, Ricchiuto G. Mobile phone and young people a survey pilot study to explore the controversial aspects of a new social phenomenon, Minerva Pediatr. 2006; 58: 357-363.

[33] Dimonte M. Il romanzo rubato lamore da un polo allaltro dellanima, Di Marsico Libri. 2016.

[34] Foucault M. Nascita della biopolitica, Feltrinelli. 2015.

[35] Gobert F, Simon H. Expert chess memory revisiting the chunking hypotheses, Memory. 1998; 6: 225-255.

[36] Goffman E. La vita quotidiana come rappresentazione, Il Mulino. 1969.

[37] Goffman E. Linterazione strategica, Il Mulino. 1969.

[38] Guelfo M. Gaia e lhomo sapiens, Franco Angeli. 2005.

[39] Gwinn J. Overuse of technology can lead to digital dementia, Alzheimers net. 2013.

[40] Hafdi M, Hoevenaar Blom M P, Richard E. Multi domain interventions for the prevention of dementia and cognitive decline, Cochrane Collab. 2021.

[41] Hamzaa H G, Ramadan Atta M H, Elmetwally Omar M E H, Majeed Machaly E R F A et al. Examining nursing students prevalence of nomophobia and psychological alienation and their correlates with fear of missing out a multisites survey, SAGE Open Nurs. 2024; 10: 1-17.

[42] Hasan M J, Shifat S H, Matubber J, Hossain R et al. An in-depth exploration of machine learning methods for mental health state detection a systematic review and analysis, Front Digit Health. 2026; 7: 1724348.

[43] Henschel A, Hortensius R, Cross E S. Social cognition in the age of human robot interaction, Trends Neurosci. 2020; 43.

[44] Hen Herbst L, Lamash L, Fogel Y, Meyer S. Mind sports exploring motivation and use of cognitive strategies in bridge, Int J Environ Res Public Health. 2023; 20: 4968.

[45] Huang M H, Lang J, Li J, Qin Z, Cao Y P. Characteristics of brain activation in high level football players at different stages of decision-making tasks off the ball an fMRI study, Front Hum Neurosci. 2023; 17: 1189841.

[46] Ibtissem T. Alienation issues and artificial intelligence in the era of society 5 0, Arab Media Soc. n.d.

[47] Istituto Superiore di Sanità. Salute mentale in Italia la rete dei servizi è articolata ma criticità su finanziamenti e personale soprattutto al sud, ISS. 2026.

[48] Lepore A. Levoluzione del capitalismo la sua capacità di cambiamento e la definizione di nuovi paradigmi economici, Etica Politica. 2024; 26: 361-373.

[49] Leutwyler K. Playing bridge may boost immunity, Sci Am. 2000.

[50] Lewis S L, Maslin M A. Il pianeta umano, Einaudi. 2019.

[51] Liu Y, Liu Y, Zhao B, Zhang Q. Cognitive mechanisms underlying memory advantages in bridge experts based on suit categorization and honor card rules, Behav Sci. 2025; 15: 125.

[52] Li D. The cognitive benefits of playing contract bridge in elderly patients with dementia, Int J Psychiatry. 2024; 9: 01-08.

[53] Li R, Ye X, Zhang Y, Liu A L. A review on serious games for dementia care in ageing societies, IEEE J Transl Eng Health Med. 2020; 8: 1400411.

[54] Lissak G. Adverse physiological and psychological effects of screen time on children and adolescents literature review and case study, Environ Res. 2018.

[55] Lv S, Hong Y, Huang Y. Study on the influence mechanism of internet risks on the development risks of Chinese adolescents the mediating role of digital dependence and the moderating role of digital skills, Front Psychol. 2025; 16: 1699803.

[56] Loh K K, Kanai R. Higher media multitasking activity is associated with smaller gray matter density in the anterior cingulate cortex, PLoS One. 2014; 9: e106698.

[57] Kanbay Y, Yalcinturk A A, Babaoglu E, Akcam A. Digital dementia the mental destruction of technology addiction, J Psychiatr Nurs. 2025; 16: 67-72.

[58] Kang M. Toward humanistic healthcare through dystopian visions Sally Wiener Grottas one widows healing, Philos Ethics Humanit Med. 2025; 20: 2.

[59] Karayaman S. The alienating effects of technology does technological innovation cause work alienation, J Manag Econ Stud. 2024; 6: 204-218.

[60] Kenney E L, Gortmaker S L. US adolescents television computer videogame smartphone and tablet use associations with sugar drinks sleep physical activity and obesity, J Pediatr. 2017.

[61] Khan G, Jamshais A, Hussain Y, Zaheer H, Mukhtar A. Technology overuse influencing emerging psychological acquaintance among youth, J Soc Sci Manag Stud. 2024.

[62] Kletzel S L, Sood P, Negm A, Heyn P C et al. Effectiveness of brain gaming in older adults with cognitive impairments a systematic review and meta-analysis, J Am Med Dir Assoc. 2021; 22: 2281-2288.

[63] Makri M, Iakovou K V, Dasygenis M, Baras N et al. The bridge project a European innovative intergenerational approach using serious games for people with dementia, Psychology. 2021; 12: 1434-1456.

[64] Malysa M. Playing bridge dementia prevention or therapy as well, Int J Psychiatry. 2022; 7: 186-190.

[65] Malysa M. Scientific research to help to promote the game of bridge, Website. n.d.

[66] Mangen A, Walgermo B R, Bronnick K. Reading linear text on paper versus computer screen effects on comprehension, Int J Educ Res. 2013; 58: 61-68.

[67] Manwell L A, Tadros M, Ciccarelli T M, Eikelboom R. Digital dementia in the internet generation excessive screen time during brain development will increase the risk of Alzheimers disease and related dementias in adulthood, J Integr Neurosci. 2022; 21: 1-15.

[68] Mariano M S, Battiston F, Horvat E A, Livan G et al. Collective dynamics behind success, Nat Commun. 2024; 15: 10701.

[69] Masri Zada T, Martirosyan S, Abdou A, Barbar R et al. The impact of social media and technology on child and adolescent mental health, J Psychiatry Psychiatr Disord. 2025; 9: 111-130.

[70] McDonnel D, Punch S, Small C. Individual wellbeing and bridge an empirical analysis, Website. 2017.

[71] McCutcheon A, Punch S. A sociological study on promoting the mindsport bridge, Eurobridge. 2024.

[72] Mercier L S. Lanno 2440, Dedalo. 1993.

[73] Mirbabaie M, Stieglitz M, Marx J. Digital detox, Bus Inf Syst Eng. 2022; 64: 239-246.

[74] Mohamed S M, Abdallah L S, Kotb Ali F N. Effect of digital detox program on electronic screen syndrome among preparatory school students, Nurs Open. 2023; 10: 2222-2228.

[75] Moledina S, Khoja A. Digital dementia is smart technology making us dumb, Ochsner J. 2018; 18: 12.

[76] Kanbay Y, Yalcinturk A A, Babaoglu E, Akcam A. Digital dementia the mental destruction of technology addiction, J Psychiatr Nurs. 2025; 16: 67-72.

[77] Kletzel S L, Sood P, Negm A, Heyn P C, Krishnan S, Machtinger J, Hu X, Devos H. Effectiveness of brain gaming in older adults with cognitive impairments a systematic review and meta analysis, J Am Med Dir Assoc. 2021; 22: 2281-2288.

[78] Nakshine V S, Thute P, Khatib M N, Sarkar B. Increased screen time as a cause of declining physical psychological health and sleep patterns a literature review, Cureus. 2022.

[79] OGorman M. Taking care of digital dementia, Theorizing 21C. 2015.

[80] Patel D G, Kshatri A H S, Kommuru S, Javvaji C K. A narrative review of digital addiction and health a new challenge for

modern medicine, Cureus. 2025; 17: e100491.

[81] Oliveira Ferreira R, Oliveira Karnikowski I G, Costa E N, Oliveira A G et al. Ability to detect digital risks effects of an educational intervention and dementia risk level, Int J Environ Public Health. 2025; 23: 58.

[82] Pentland A. Social physics how good ideas spread the lessons from a new science, Scribe Publ. 2014.

[83] Petrillo M. Potenziare le funzioni esecutive attraverso il gioco, State Mind. 2020.

[84] Punch S, Snellgrove M. Playing your life developing strategies and managing impressions in the game of bridge, Sociol Res Online. 2020; 26: 601-619.

[85] Punch S, Snellgrove M. Bridging time negotiating serious leisure in intimate couple relationships, Ann Leis Res. 2024; 27: 624-644.

[86] Punch S, Russel Z, Cairns B. Performing identity in the mind sport bridge self partnership and community, Int Rev Sociol Sport. 2020.

[87] Punch S, Russel Z. Playing with emotions emotional complexity in the social world of elite tournament bridge, Emot Soc. 2022; 4: 238-256.

[88] Radcliffe K, Lyson H C, Barr Walker J, Sarkar U. Collective intelligence in medical decision making a systematic scoping review, BMC Med Inform Decis Mak. 2019; 19: 158.

[89] Radtke T, Apel T, Schenkel K, Keller J, von Lindern E. Digital detox an effective solution in the smartphone era a systematic literature review, Mob Media Commun. 2022; 10: 190-215.

[90] Ramadhan R N, Rampengan D D, Yumnanisha D A, Setiono S B V et al. Impact of digital social media detox for mental health a systematic review and meta-analysis, Narra J. 2024; 4: e786.

[91] Riva G, Wiederhold B K. Human robot confluence toward a human robotics, Cyberpsychology. 2021; 24.

[92] Rosa H. Accelerazione e alienazione per una teoria critica del tempo nella tarda modernità, Einaudi. 2015.

[93] Russel Z, Punch S, McIntosh I. Blurring the boundaries between leisure and work professionals as devotees in the mind sport bridge, Int J Sociol Leis. 2022; 5: 13-32.

[94] Sartori G. Homo videns, Laterza. 2000.

[95] Sciutti A, Mara M, Tagliasco V et al. Humanizing human robot interaction on the importance of mutual understanding, IEEE Technol Soc Mag. 2028; 37: 22-29.

[96] Scott D S, Punch S. The physicality of mindsports through elite bridge players sensorial experience presence confidence and bodies, Sociol Rev. 2024; 72: 194-212.

[97] Shim T, Go E. The impact of school burnout on life satisfaction among university students the mediating effects of loneliness and fear of alienation, Behav Sci. 2025; 15: 1083.

[98] Shukri M, Shahim M R A, Yusuf S N M. Internet and game addiction in relation to sleep disturbances findings from a university student sample, Malays J Med Health Sci. 2025; 21: 1-8.

[99] Spitzer M. Demenza digitale come la nuova tecnologia ci rende stupidi, Corbaccio. 2019.

[100] Steinmann M. Alienation in a world of data toward a materialist interpretation of digital information technologies, Philos Technol. 2022; 35.

[101] Stuart A. Brain exercises and dementia. WebMD 2024; www.webmd.com/alzheimers/preventing-dementia-brain-exe

[102] Vittal BK. A study of impact of excessive usage of new media (smartphone) on health factors of youths. Platinum Atharva publications, 2023; 14.

[103] Yuan S, Li W, Ling Y, Huang X, Feng A, Tan S, He N, Li L, Li S, Xu A, Lyu J. Association of screen-based sedentary activities with all cause dementia: a longitudinal study based on 462.524 participants from the UK Biobank. BMC Public Health 2023;23:2141.

[104] Yue Y. Digital alienation: how data elements exacerbate the green innovatin bubblebased on dual mechanisms of information manipulation and technological lock-in. Advances in Economics, Management and Political Sciences 2025; 201: 64-73.

[105] Xia Q, Qin G, Yang F, Li Z. The effect of majong/Bridge intellectual sports on the subjective wellbeing of middle-aged and older adults: an empirical analysis from the mixed cross-section data of CHARLS in China. Frontiers in Public Health 2025;13: 1552180.

[106] Xu Y, Zeng K, Dong L, Zheng X, Si Y. Understanding older adults smarthphone addiciton in the digital age: empirical evidence from China. Frontiers in Public Health 2023; 11: 1136494.

[107] World Health Organization (WHO). Child and youth mental health in the WHO European Region, 2025; who/euro:2025-12824-52598-81473.

[108] Zhao B, Liu Y, Wang Z, Zhamg Q, Bai X. Long-term Bridge training induces functional plasticity changes in the brain of early-adult individuals. Behavioral Sciences 2024; 14: 469.

[109] Zhang X, Liu W, Lou L, Yang F. AI enabled bridge bidding supporting interactive visualization. Sensors 2022; 22: 1877.