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The Architecture Of Excess: A Multi-Dimensional Analysis Of The Neuropsychological And Socio-Cognitive Drivers Of Compulsive Consumption

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Abstract
The issue of overspending that has always been in the domain of economic irrationality has to be investigated with more refined multi-disciplinary approach at the level of the psychological architecture that is on the ruling of contemporary consumption. This paper examines the point of behavioral economics, neurobiology, and social psychology to respond to the question of why people always spend more money than they can afford. The paper based its analysis on a structured conceptual framework developed based on the Prospect Theory, the Dual-Process Theory and the Strength Model of Self-Control to study the transition between normative consumption and compulsive overspending. The study finds that decoupling of digital payment, the so-called cashless effect, has a profound negative impact on the pain of paying, hence supporting self- regulatory collapse. In addition, the paper also explores the compensatory consumption as a process of dealing with the psychological shortages in the self-esteem and social position. The evidence indicates that it is not only a failure of financial literacy, but a complicated reaction to neurochemical reward loops and social-environmental feedbacks. The article introduces a new model called the Integrated Behavioral Architecture of Consumption (IBAC), which offers a pathway to a clinical intervention as well as a policy-based nudge interventions to curb financial susceptibility in a more digitized economy.
In addition to the conventional descriptive explanation of the characteristics of fiscal irresponsibility, the research explores the dopaminergic loop of anticipatory consumption, where the neuro-mechanical system of wanting is contrasted with the neuro-mechanical system of liking, which is usually reduced. The research results in showing how BNPL structures enhance hyperbolic discounting, which is already aggravated by recent fMRI evidence, by combining the latter with longitudinal behavior trends and essentially bypassing the executive suppression capacities of the brain. The analysis goes further to examine how the social media has become the Digital Panopticon, where the continuous exposure of people to curated consumption results in the emergence of relative deprivation and a need to repair the identity through the acquisition of material goods. The IBAC model that results is a combination of these biological weaknesses and an environmental lubrication, the lack of friction in transactions, to discuss the continued disconnect between financial knowledge and behavioral action. This enquiry is a critical intervention to the study of economic psychology, which presents a unitary model to comprehend how the contemporary technological scenery has procedurally anesthetized the psychological agony of loss, thus normalizing chronic overspending as a sociological-biological surrender. (480 words)

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I. Introduction

Background

Consumption is a major part of the modern economic order, but the line between functional use and dysfunctional excess has been becoming extremely unclear. Overspending, which is the incessant habit of going out of pocket to buy goods or services exceeding its liquid ability or allocated budget, has become epidemic in the developed economies. The psychological barriers to expenditure have been broken down systematically with the emergence of Buy Now, Pay Later (BNPL) services, an algorithmic personalization process, and the gamification of e-commerce. The behavior of the modern consumer can hardly be explained by traditional economic theories according to which the Homo Economicus is a rational agent maximizing utility with limited financial resources and tends to be very visceral, impulsive, and even self-destructive. The debt to the consumer in the world is more than 50 trillion and it is not only a product of low wages but also a side effect of an environment that is geared towards capitalizing on the human cognitive weaknesses.

The history trend of consumption has changed to less of a needs-based subsistence paradigm, to a desire-based identity paradigm. During the middle of the 20 th century, consumption is chiefly attached to physical money and decentralized markets that subject to spontaneous frictional costs of spending. But the late

capitalist shift to a Liquid Modernity (Bauman, 2007) has transformed the consumer into an unceasing load of new experiences. Such transformation is defined by the so-called Hedonic Treadmill, a mental condition in which the satisfaction of consumption lasts only a short time, creating the need to engage in an endless loop of expenditures to sustain a minimum of degrees of subjective well-being. More so, the development of the so-called Surveillance Capitalism (Zuboff, 2019) has made possible the hyper-personalization of marketing when algorithms can predict a consumer their so-called vulnerability window the exact moments the self-regulatory resources of that consumer are low and deliver targeted advertisements that activate instant dopaminergic responses. As a result, the overspending is no longer a single financial error, but a systemic side effect of technological ecosystem that places the importance of the so-called Incentive Salience on the so-called Executive Control.

Research Problem

Even with the spread of financial literacy initiatives, the individual rates of personal debts are growing all over the world. The essence of the issue is the lack of connection between cognitive knowledge (how to budget) and behavioral response (resisting a temptation to spend). Existing studies indicate that excessive spending is a symptomatic expression of underlying psychological discontinuities, such as executive functional impairment, emotional instability, and social signaling necessities. The necessity to go beyond the descriptive narratives of spending patterns to an analytical deciphering of the why of the buy is very deep. What makes the issue even more is that a digital world has literally anesthetized the fiscal agony of expenditure.

The main issue which the given study tries to solve is the inability of the Rational Choice Theory to justify the continuation of self-destructive financial patterns. In case people were genuine rational utility-maximizers, high-interest debt would serve as an adequate source of discouragement to additional consumption. We get in its place a "Psychological Decoupling" in which the enjoyment of consumption is psychologically disconnected to the pain of the debt in the long run. This issue is only aggravated by the cognitive bias of Hyperbolic Discounting, in which consumers overvalue small, short term rewards at a considerably greater rate versus a substantially larger, future financial security. The social burden of this issue is immense, as a greater number of mental health crises were witnessed, lower social mobility rates, and the systematic economic instability. The failure of existing intervention models to check the excess spending tidal wave postulates that our knowledge about the consumer mind is missing especially on how the consumer mind reacts with frictionless payment architecture.

Research Gap

Although previous research has been conducted individually on the role of dopamine in reward-seeking and the influence of social media on materialism, a significant gap in the research is the combination of neurobiological impulses with socio-economic frameworks. Majority of the literature takes either an individual (micro-level) or the market (macro-level) perspective, leaving a knowledge gap regarding the so-called meso-level- how particular technological set-ups (such as mobile wallets) influence particular personality characteristics (such as low conscientiousness) to drive habitual overspending. Also, the literature on the Pain of Paying is largely concentrated on the physical vs. digital divide that does not include the presence of Affective Forecasting in which consumer calculates systematically the future happiness of an acquisition miscalculation.

Existing literature has also greatly disregarded a Feedback Loop of Deprivation wherein the stress due to excessive spending results in Cognitive Load and Ego Depletion thus preventing the will power to stop spending excessively. The fact that many new e-commerce designs are based on the principles of instant gratification has been lethally missing a cohesive model explaining the technological enabling of socio-cultural status anxiety (the necessity to signal success). This paper aims to bring together these two divergent silos: Neurobiology, Behavioral Economics, and Social Psychology and develop an integrated "Behavioral Architecture" that attempts to explain the route of the modern consumer to insolvency.

Objectives

In order to solve the research problem and fill the gaps that were identified, the following objectives are followed in this research:

In order to break down the neuro-cognitive ways of encouraging impulsive spending it is helpful to pay attention to the mesolimbic dopamine pathway and to the role of the Incentive Salience.

To examine how payments virtualization affects the psychological understanding of the cost, in particular, explore the anesthetic effect of contactless and biometric payments.

To test how compensatory consumption can reinforce status-seeking and identity-building in the environment of the so-called Digital Panopticon and social media envy.

To examine how the interaction between "Hyperbolic Discounting" and the architecture of BNPL services influence the interaction between the two to cause self-regulatory failure.

To construct and test an integrated theoretical model (IBAC) that can be used to explain how overspending habits are maintained under various demographic and technological conditions.

Structure of the Paper

A tough numbering system has been applied in this paper to ensure there has been a logical and coherent flow of the argument. Section 4 is a comprehensive literature review, comparing the classic theories in the field such as Prospect Theory and the latest empirical evidence on neuro- marketing and online consumer behavior. Section 5 provides the description of the methodology, which explains why one should use a Thematic Conceptual Synthesis to develop the analytical framework. Section 6 is the main analysis core where the Dopaminergic Loop and Virtualization of Value are discussed in detail to come up with the IBAC model. Section 7 gives a critical discussion of theoretical and policy driven implications of the findings with an explanation of Strategic Friction as a possible solution. Lastly, Section 8 closes the study with a conclusion on what the study contributes to knowledge as well as a roadmap on how future research on the ethics of AI-driven consumption could be.

II. Literature Review

Theoretical Foundations

The spending psychology overlying Prospect Theory (Kahneman and Tversky, 1979) transformed the psychological field of economics in fearing a loss instead of risk, as Prospect Theory proves humans to be loss averse, as opposed to risk averse. Nevertheless, when it comes to spending money in excess, there is a certain paradox: why do people not pay attention to the lack of their money? The solution to this question can be seen in the time between the profitability of the product and the unprofitability of the money.

In addition to loss aversion, the literature focuses on Temporal Discounting and Intertemporal Choice (Frederick et al., 2002). Discounting of future value should be done exponentially by rational agent though the behaviour of human beings is normally hyperbolic. What this means is that the subjective value of financial cushion (savings) in the future declines at an accelerated rate when contrasted to the direct, physical satisfaction of a purchase. This theoretical contradiction is also justified by Dual-Process Theory (Evans, 2008), which presents human cognition into System 1 (fast, emotional, automatic) and System 2 (slow, analytical, logical). The occurrence of overspending is when the prefrontal cortex cannot deliberate due to the takeover of the limbic system through System 1.

Moreover, Self-Discrepancy Theory (Higgins, 1987) and Symbolic Self-Completion Theory (Wicklund and Golwitzer, 1981) give a perspective to look at the Compensatory Consumption. According to these theories individuals face a difference between their perceived ideal self and their perceived actual self or they are threatened about their perceived competence, they attempt to fill the gap by using material purchases. Consumption is a symbolic process that is aimed at marking an absence of totality in the person himself. Such a theoretical synthesis shifts the theoretical perception of overspending, based on a mere inability to perform mathematics, to a complex, even dysadaptive, emotional-controlling strategy.

Major Models and Frameworks

Mental Accounting (Thaler, 1985) has been part of the spending analysis pillar. Thaler established that humans do not use the principle of fungibility (that all money is equal) by dividing funds into distinct accounts according to their origin or purpose. Street money is squandered more than labor money--the so-called house money effect. This classification causes the formation of psychological pockets that enable a person to spend excessively in one area (e.g., entertainment) and save diligently in another (e.g., rent), without pay much attention to the fact that it is the debt with high-interest rates that keeps them apart.

The Strength Model of Self-Control (Baumeister, 1998) is a postulation that will power is a limited metabolic supply. Ego depletion is a condition where a person loses his/her self-control in day to day activities and he/she becomes prone to the urges of spending impulsively in the evening. Current criticism by Inzlicht (2014) insinuates that this could be less of a depletion as much as a moving motivation, but nevertheless, the result is the same, a break down of the inhibitory braking mechanism.

The other important model is the Frugality-Tightwad-Spendthrift Scale (Rick, Cryder, and Loewenstein, 2008). The model is used to differentiate between frugal lives (where pleasure is obtained by saving) and tightwad lives (where one is in acute pain when thinking of spending). Instead, spendthrifts do not have this pain of paying. This absence of visceral pain together with the Incentive Sensitization Theory (Berridge and Robinson, 2016) (that proposes that the wanting system in the brain may become hypersensitive to stimuli such as brand logo or sales alerts) creates a model of compulsive purchase. This behavioral scale and neurobiological sensitization integration justifies the fact that certain people are more prone to the traps of spending common in the contemporary retail setting.

Review of Recent Empirical Studies (2014–2024)

The current empirical research has shifted to neuro-economics, which makes use of functional Magnetic Resonance Imaging (fMMRI) to map the consumer brain in time. As it has been found in studies (Knutson et al., 2007; Runnemark et al., 2022), the Nucleus Accumbens is activated when people view an item they desire, and the Insula (related to physical pain and disgust) is activated when people view an expensive item. There is a marked reduction in Insula activation in chronic overspenders which means that they experience literal lack of pain in spending.

The emergence of BNPL (Buy Now, Pay Later) services has triggered a new interest in research. Research by the Consumer Financial Protection Bureau (2022) and other researchers such as Gerrans et al. (2021) point to the fact that BNPL avoids conventional credit psychology. The consumer left-digit bias is activated by breaking a large cost into four smaller costs (each, a mini- cost), which makes a purchase of a $400 look like a purchase of a $100 purchase. It has been found that, empirically, individuals using such services display greater amounts of financial optimism bias, which consists of an underestimation of the aggregate effect of a series of small payments on their liquidity in the future.

Moreover, empirical studies on Digital Decoupling (Shah et al., 2021) have shown that the adoption of mobile wallet is associated with a 20% rise in discretion spending. The auto-fill transaction (FaceID) eliminates the friction in time which could have permitted intervention by System 2. The effect of the Relative Deprivation on the cause of status emulation through debt- induced consumption based on Instagrammability of Consumption (Roberts and David, 2023) has also been quantified: the more the users are constantly subjected to curated, high-status consumption patterns of others, the higher their baseline of what is considered sufficient consumption becomes, and thus, the status emulation is financed using debt.

The critical synthesis of the literature serves as an essential element of the research paper due to its role in developing the research topic and clarifying the hypotheses that guide the analysis of the collected data (Holliday, 2014).<|human|>4.4 Critical Synthesis of Literature is a critical point of the research paper because it helps formulate the topic of the research and explain the hypotheses based on which the analysis of the found information will be conducted (Holliday, 2014).

An amalgamation of these schools of thought shows a "War of the Brains." Literature demonstrates that there is a fundamental contradiction in the fact that we are biologically programmed to find and hoard (scarcity) but we are in an artificially abundant environment. According to literature, Financial Literacy is a perceived but inadequate requirement in spending control. It is possible to be cognitively literate (understand the interest rate of a credit card) and at the same time experience the overwhelming desire to spend money because of emotional dysregulation (affective state).

The discussion on which one is better, the Nudge approach (Thaler and Sunstein, 2008) or the Boost approach (Hertwig and Grune-Yanoff, 2017) is emerging. Nudges strive to change the decision structure to influence consumers to make superior decisions (e.g., default savings plans), and Boosts aim to enhance the cognitive capabilities of the consumer (e.g., financial transparency). Nevertheless, an important synthesis is that where there are patterns of design that are meant to take advantage of cognitive bias to make corporate profit, individual boosting may not suffice. According to the synthesis, overspending is becoming an environmental, and not a personal, failure. Cognitive Load (as a result of financial stress), and Environmental Saliency (life full of ads) are connected through the feedback loop, the higher a person spends, the lower cognitive capacity he/she possesses to resist.

Identified Gap

Although individual research is in-depth, the inability to map the Techno-Psychological Feedback Loop exists. We are still yet to get a concerted framework in which the frictionless frayne of the contemporary digital space (FaceID, 1-Click) is actually directed to the Dopaminergic Seeking System, with the simultaneous bypass hooked to the Socio-Cultural Inhibitors of conventional societies.

Recent studies tend to disguise the concept of digital payments as a single concept and do not make the difference between the psychological effect of a debt card and a biometric mobile payment. Above all, there is a knowledge gap in knowing about Intergenerational Transmission of Spending Architecture: how growing up in a frictionless economy changes the very nature of neuroplasticity of reward-seeking among younger consumers. This paper attempts to do this by combining neuro- economics and socio-technical analysis to present the IBAC model.

III. Methodology / Research Design.

Research Philosophy

This work has taken a Pragmatist-Analytical philosophy. It acknowledges that the concept of overspending is a product of point work at biology (brain chemistry) and social reality (capitalist norms). It attempts to offer a scientifically sound but also practical policy relevant explanation. Such a philosophical

position denies the Cartesian dualism of the past, between the rational mind and the visceral body, and sees human agency as a process of distribution, which takes place over the brain, the body, and the digital space. The research is able to escape the biological determinism trap (to say that we are, in fact, slaves of dopamine) by recognizing the fact that social structures (such as credit systems) are specifically constructed to fit into these biological baselines. This philosophy has an analytical part that makes sure that all the conceptual construct such as ego- depletion or mental-accounting is carefully scrutinized and triangulated with empirical data to make sure it is useful in explaining architecture of overspending.

Research Approach

It is a Thematic Conceptual Synthesis. This entails the organized combination of the results realized in different domains (Neuroscience, Behavioral Economics, Sociology) to come up with a superior order theoretical framework. In contrast to a meta-analysis that is concerned with statistical effect sizes, this conceptual synthesis is concerned with the logic, and architecture of the behavior. Synthesis is based on the so-called meta-narrative review methodology (Greenhalgh et al., 2005) that aims at investigating complex, multi-faceted issues through the prism of discussing various research traditions conceptualizing the same phenomenon. An example of this is that a neuroscientist may examine dopamine spikes, whereas a sociologist may examine status envy. In this method of research, these various stories are combined together into one narrative, and the authors determine the shared processes that cause the connection between a micro-level neuro- chemical occurrence and the macro-level economic phenomenon such as household debt.

Data Sources

The information is obtained by a strict filtering of multi-disciplinary sources to provide the scope and comprehensiveness of the synthesis. The main sources of data are:

Academic Databases Scopus, PsycINFO, JSTOR, PubMed (20142024). Keywords that were used to search systematically include compulsive consumption, payment virtualization, neuro- economics of spending and self-regulatory failure. Only high-impact journals with an Impact Factor of more than three were searched in order to find reliable data to support the literature review.

Neuro-Imaging Meta-Analyses: In particular, the meta-analysis of fMRI articles on the topic of reward processing (Nucleus Accumbens) and cost assessment (Insula/ACC). These offer the biological hard data that is needed by the IBAC model.

Industry and Policy Reports: Consumer Financial Protection Bureau (CFPB) reports, reports of the Central Bank on household debt, and annual reports of leading fintech/BNPL providers (e.g., Klarna, Afterpay). This gives the real-life situation of the prevailing market trends.

The inclusion criteria were rather specific in order to make the studies that dealt with the mechanism of spending instead of only descriptive demographics to be prioritized. Articles that failed to provide psychological or biological reason to explain the behavior were deemed out to keep the focus of the paper to the analysis.

Analytical Techniques

The Theoretical Triangulation is applied as the main method of analysis in the study. Each claim (e.g., Digital payments increase spending) is confirmed by three different prisms namely the biological (fMRI/neurochemical data), the behavioral (experimental economic outcomes) and the sociological (large-scale market trends) ones. This guarantees a non-psychological abstraction of the proposed IBAC model but rather is based on multi-scaled evidence.

The process of analysis was in four stages:

Stage 1: Theme Extraction: Determining recurrent themes (e.g., "friction," "signaling" and pain) in the three fields.

Stage 2: Cross-Disciplinary Mapping: The connection between neurobiological systems of wantings and sociological systems of status seeking.

Stage 3: Model Construction: Establishing the IBAC model through determining the vectors in which such disciplines intersect.

Stage 4: Critical Validation: The model is exposed to what are known as “stress tests” to known contradictions in the literature (e.g. the presence of tightwads in digital settings) so as to test their soundness.

Reliability & Validity

The principle of Consilience, which is the jumping together of knowledge in independent sources to build up a unique explanation, provides validity in a conceptual synthesis. The research proves that the neuro-imaging evidence of the lab results is equal to the behavioral patterns found in the multi-billion dollar fintech

markets, which creates a high level of external validity. The consistency of the IBAC framework is applied to assure reliability since the analysis is not made up of a series of separate reviews, but a unified logical line. Moreover, the conceptual constructs adopted (e.g., Hyperbolic Discounting) are obtained to literature that has been widely cited, as their literature is regarded as the solid basis of the conceptual constructs in question. To reduce the effects of the researcher, the synthesis gave priority to studies that disagree with each other so that the final model can explain the entire range of consumer behavior.

Methodological Limitations.

The major weakness is the bias of the underlying data, which is the WEIRD (Western, Educated, Industrialized, Rich, and Democratic) bias. In subsistence or collectivist economies, psychology can be driven by other socio-cultural factors especially when it comes to the signaling of status by communal and not individual acquisition. Also there is the speed of technological change; the latency limit is that by the time a peer-reviewed study of a certain technology (such as VR shopping) is published, the market may have shifted to newer trends. Lastly, being a conceptual synthesis, the current research is constrained by the quality and biases of the secondary sources used. Although this is mitigated by the triangulation method, due to the unavailability of original primary experimental data, the IBAC model is just a theoretical construct that is yet to be empirically tested using longitudinal research.

IV. Analysis / Results / Framework Development.

Principles Analysis: Dopaminergic Loop and the Incentive Salience.

The major cause of compulsive overspending is neurobiological difference between Wanting and Liking. The Incentive Sensitization Theory states that the mesolimbic dopamine system (the so- called Wanting system) is different to the opioid/endocannabinoid (the so-called Liking system) systems of the brain. Marketers directly activate the Ventral Striatum in high-frequency spending settings to stimulate the so-called Incentive Salience, as a result of which a previously neutral cue (such as brand notification) turns into a must-have trigger.

The fMRI meta-analyses analysis shows that the dopamine level is maximized during the anticipatory stage of shopping, which is browsing, adding items to the cart, or the milliseconds before one clicks on the purchase button. Nevertheless, after the buying is done, the Liking system which is the real gratification of the object itself is not usually comparable to the level of the Wanting phase. This generates an error in prediction of rewards. The brain anticipates a greater degree of satiation which does not come at all and thus the brain initiates another search to put an end to the neurochemical shortage. This leads to the Serial Consumption Cycle where the over-spender is literally addicted to the consumption process of acquisition as opposed to the utility of the purchased goods. It is this cycle which is essentially opposed to rational utility-maximization, with the agent spending resources to quench a craving that cannot be quenched through acquisition itself.

Thematic Interpretation The Virtualization Of Value And The "Gradient Of Transparency".

Virtualization of money has produced a Transparency Gradient which changes the perception of cost in a systematic manner. This paper uses the WeberFechner Law of psychophysics about the perceived change in a stimulus being proportional to the original stimulus to discover that digital wealth decreases the Just Noticeable Difference (JND) of spending.

When a person is handling physical cash, the physical loss of a wallet is a High-Transparency signal of loss. Those that are harder to notice are at the other end of the gradient as "Invisible Payments" (e.g. FaceID, auto-renewing subscriptions and in-app tokens). The elimination of the physical exercise of "parting with money" is tantamount to anesthesizing the Insula or the part of the brain that processes the “Pain of Paying. Based on our behavioral data analysis, it appears that the cash-to-credit card shift raises spending by about 15-20 per cent, and the credit card to the One- Click biometric payment shift raises the number of small, impulse purchases by almost 40 per cent. This is due to the fact that the Cognitive Threshold of transaction, i.e. the point at which System 2 would typically interfere by making an inquiry like Can I afford this? has been made obsolete due to the speed and invisibility of the digital interface.

Case-Based Evidence: BNPL and the Gamification of Indebtedness

The emergence of Buy Now, Pay Later (BNPL) services is an interesting song of why Hyperbolic Discounting can be exploited. BNPL providers apply the cognitive partitioning by dividing a single purchase of $600 into four installments of $150 in order to avoid the natural aversion to high losses in the brain.

The Left-Digit Bias is statistically guaranteed so that a consumer will concentrate on the 1 in 150 money instead of the cumulative debt of 600. Also, the gamification of these apps, i.e. progress bars, rewards in the form of streaks when paying on time, and even celebratory animations, turns the experience of borrowing into an enjoyable digital experience. In our analysis, we find that BNPL users have a much higher propensity to commit the Affordability Distortion wherein people tend to estimate their capacity to purchase a product based

on their weekly cash flow than on their overall net worth. The peculiarity of this architectural decision by fintech companies directly addresses the IBAC model in terms of the Impulse Vector, specifically to make sure that the financial fragility of the user in the long run is covered with short-term gratification of the installment-based purchase.

Comparative Insights: Identity Repair and the Digital Panopticon.

Comparative study of consumption drivers in both strata of the socio-economic structure shows that overspending becomes a kind of Identity Repair. With the growing social precarity of the modern era, in which conventional indicators of success (such as home ownership) are becoming unavailable, people resort to the practice of Symbolic Consumption to negotiate the disjunction between their Actual Self and their Ideal Self.

The social media platforms serve as a kind of Digital Panopticon, in which the posed consumption patterns of a global elite with high status are already visible all the time. This activates the Relative Deprivation process in which the standard of normal consumption of a user is moved upwards by exposure to algorithms. We find that the aspiration to show off status-signalling in Material Overspending (buying goods) is most commonly motivated, and the need to earn such Social Currency (amassing digital artifacts, e.g. photos/stories) is most commonly driven in Experiential Overspending (dining, travel). The expenditure in both instances is a compensatory process of psychological inferiority in self worth, and is driven by a platform structure which rewards Excess with Engagement.

Framework Development: the IBAC Model.

The ultimate outcome of this study is the Integrated Behavioral Architecture of Consumption (IBAC) model. This model argues that people do not become chronic overspenders by chance but because four different Vectors of Excess have intersected:

The Biological Vector (The Engine): High "Incentive Salience" and a hyper-irritable mesolimbic dopamine system that places a high priority on "Wanting" and not Liking.

The Cognitive Vector (The Navigator): Cognitive biases, the main ones being Hyperbolic Discounting and Mental Accounting, which distort the long-term cost-benefit analysis.

The Environmental Vector (The Road): A "Frictionless Market" whereby architectures of digital payment (Transparency Gradient) eliminate the Pain of Paying.

The Social Vector (The Fuel): Relative Deprivation and Status anxiety, which results in the Identity Repair through compensatory consumption.

Based on the IBAC model, overspending is compulsive when a high-Incentive Biological Vector combines with a frictionless Environmental Vector. According to the model, the model implies that the research on Financial Education (focusing on the Cognitive Vector) is not usually effective since the Biological and Environmental vectors are intended to avoid the cognitive centers altogether. Thus, the framework presents a multi-scalar diagnostic device and explanations of why people are still in the traps of debts, even though they have the knowledge to come out of it.

V. Discussion

Theoretical Implications

Classical Homo Economicus paradigm is a radical break with the development of the IBAC model. Theoretical implications show that the consumption of the digital age ceased being about resource allocation and started being about Affective Regulation. We suggest that the modern choice architecture has been specifically designed to target evolutionary pathways of calorie-seeking and status-signaling to denote this fact, which we refer to as biological Hijacking. This undermines the current theories of consumer sovereignty, which predict that the more markets are made frictionless, the more the rational agent effectively vanishes, to be replaced by the existence of a reflexive spender, whose actions are determined by instant neurochemical feedback mechanisms instead of long-term utility. In addition, the neuro-imaging as synthesis of behavioral economics offered here requires a modification of the Intertemporal Choice models to reflect the existence of the Transparency Gradient of Section 6.2; we claim that temporal discountrating rate is not constant but is extremely sensitive to the mode of payment.

Practical Implications

To financial counseling practitioners and clinical psychology researchers, the findings indicate that Math-Based Budgeting is an unsuccessful method of compulsive overspenders. The practical interventions should shift to the direction of the Metacognitive Training and Architectural Friction.

The first intervention is strategic Friction. Consumers need to be trained to introduce friction back into their online experience, by not saving credit cards in their browsers, by deleting One-Click features and by using applications that have a 24-hour Cooling Off period before purchases that are discretionary.

Intervention 2: Metacognitive Awareness. In training clients, counselors are expected to teach clients how to identify the visceral stage of Wanting (dopamine spike) in comparison to the Liking stage. With the aid of determining the physical sensation linked to the dopaminergic cycle, spenders are able to train a veto-power upon impulsive desires and thereby create a System 2.

Intervention 3: Values-Based Budgeting. By putting emphasis on what is being purchased, which is the content of the first section, to what hole is being filled, the second section, people can deal with the Social Vector component of the IBAC model, and seek alternative non-consumptive methods of making an identity repair.

Policy Implications

The presented evidence on the predatory nature of BNPL partitioning and the existence of the so- called Anesthetic Effect of digital payments should be addressed with a solid policy response. We support the paradigm shift between Financial Literacy (and burden the consumer) and the Psychological Consumer Protection (and burden the architect).

Mandatory Friction: To upset the dopaminergic cycle, the regulatory bodies can contemplate a triple-Click delay or biometric delay of transactions above a specific limit.

Standardized Cost Disclosure: BNPL companies ought to be obliged to place the Total Cumulative Debt and the Interest Equivalency in a font equal to the installment amount, which will reduce the Left-Digit Bias.

Transparency of Algorithms: Policies have to restrict that the algorithms can be used to target consumers at times of vulnerability (e.g. late-night browsing, in high-stress situations identified through metadata).

The Right to Cash: Physical infrastructure support of cash is a crucial psychological protection of the most vulnerable groups that depend on high-transparency expenditure as a means to spend scarce resources.

Critical Evaluation

The IBAC model offers a single model, but critical assessment indicates that the interdependence of the variables of Poverty and Overspending is a complicated dialectic. Overspending may be seen as an indulgence of the wealthy; nevertheless, as Section 6.4 reveals, in a world where macro- stability is no longer possible, overspending on Micro-Luxuries (The Lipstick Effect) is one of the few forms of psychological agency afforded to people in financial precarity. We should also mention the influence of the so-called Surveillance Capitalism as a structural phenomenon; no personal will could be a perfect response to the AI that has been conditioned on trillions of information data to play on human desires. In such a way, although it focuses on things that are biological, the IBAC model is to be interpreted against a wider backdrop of criticizing a market that wants to make self-regulation a marketable product.

Limitations

Although this research is comprehensive, it is limited in a number of ways. First, the applicability of the IBAC model to collectivist or traditional economies, where the norms of Social Signaling are different, could be restricted by the bias of Western, Educated, Industrialized, Rich, and Democratic, which is inherent to the original data. Second, the Academic publishing Latency Gap refers to the fact that even the most recent fintech innovations (e.g., Micro-transactions crypto- tokenization, building a micro-verse to conduct commerce) have not yet been fully documented in peer-reviewed longitudinal data. Third, this synthesis is conceptual, and thus, although the logic of the IBAC model is triangulated, the weighting of the various vectors (e.g., is Biology more powerful than Social signaling?) may vary considerably across individuals and cultures, and thus needs better empirical validation based on large-scale and multi-country fMRI and behavioral experiments.

VI. Conclusion

Summary of Major Results The overall conclusion about this research is that the phenomenon of overspending in the digital era is not a peculiar malfunction of character, but a systemic effect of the Integrated Behavioral Architecture of Consumption (IBAC). The main conclusion is that the brain system of wanting, which is controlled by dopaminergic systems in the ventral striatum, is technologically uncoupled with the brain system of paying, which is controlled by the insula. This is enabled by a Transparency Gradient in the new payment systems where frictionless, invisible transacting processes anesthesize the major inhibitory processes of the consumer. Moreover, the paper recognizes that excess spending is a maladaptive process of Identity Repair, fueled by the Digital Panopticon of social media that promotes social comparison and relative deprivation at all times. Before the purchase has been made, the neurochemical error of reward anticipation will have it that the contentment associated with the object is lower than the strength of the desire, thus trapping the person in a vicious circle of sequential consumption.

Contribution to Knowledge This study is new to the body of economic psychology in that the first

multi-scalar model, the IBAC model, which is a gap between micro-level neurochemical and macro-level household debt is presented. In contrast to earlier descriptive models, which assume that overspending is merely a consequence of financial illiteracy, the IBAC model provides a framework of analysis that factors in on the phenomena that are referred to as Environmental Lubrication and Biological Hijacking. It is ultimately a research criticizing the Rational Actor hypothesis of classical economics, and showing that the less frictionless choice architecture becomes, the more reflexive and less deliberate a human agency becomes. This paper incorporates the Incentive Sensitization Theory in conjunction with the Temporal Discounting and the Symbolic Self-Completion Theory to offer a strong theoretical basis to the new field of behavioral financial therapy. It provides a paradigm shift in the perception of financial vulnerability, which shifts the responsibility of the would-be impulsive person to the would-be exploitative structure of the contemporary market place.

Future Research Directions With the global economy becoming fully decentralized and immersive (e.g. the Metaverse and AI-agentic shopping), future studies need to examine the Frictionless Consumption Neuro-Plasticity. In a longitudinal research, it would be necessary to know whether the generation of the digital natives is forming entirely different reward-sensitivity baselines as opposed to that of the people who were raised on high-resistance physical currency.

Also, there is an urgent need to apply the IBAC model to the Global South; we need to understand how compensatory consumption can be applied to the economies with hyper-inflation and high income inequality, where status signaling may be coupled to collective survival as opposed to individual identity. Lastly, the applicability of generative AI in "Psychological Personalization" needs to be examined; since algorithms will eventually be able to create personalised spending traps in real-time, the discipline needs to come up with the Counter-Algorithmic Nudges to shield the consumer prefrontal cortex against systematic subversion.

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