NjP *Journal of Business Ethics Education 23.*

Promo 1st Version

Teaching Business Ethics Through the Lens of Chronotype: An Experiential Approach Integrating Ultimatum Games

Wm. Marty Martin, Charles Naquin, and Yvette P. Lopez
Department of Management & Entrepreneurship, DePaul University, USA

Abstract. Business ethics courses struggle to cultivate actionable ethical competence. We present an experiential pedagogy that integrates chronotype research with the ultimatum game to surface moral decision-making's biological, cognitive, and social drivers. Students complete the Morningness–Eveningness Questionnaire (MEQ) and make allocator offers at randomized morning or evening times, enabling a 2 x 2 test of synchrony effects. Structured debriefing links observed deception, fairness reasoning, and dual-process mechanisms to ethical frameworks and real-world practice. Classroom evidence suggests ethical behavior varies with chronotype-time of day alignment, not time of day alone. We outline implementation guidance and leadership implications, advancing engaging, scalable, and relevant evidence-based ethics education.

Keywords: experiential, moral decision-making, chronotype, synchrony effect, deception, System 1 and 2 thinking, negotiation**.**

1. Introduction

Teaching business ethics presents significant challenges for educators seeking to develop genuine ethical competence among their students. Business ethics education's efficacy remains mixed, with sparse research supporting traditional pedagogical approaches (Malavé et al., 2021). In response to calls for change in business ethics education (Jaganjac et al., 2024), we have developed an innovative approach that integrates experiential learning with emerging research on ethical decision-making's biological foundations. Our pedagogical approach centers on the ultimatum game that has been used in classroom settings focusing on social responsibility (Hernández et al., 2013), economics of altruism (Paxton, 2021), international business education (Wittmer & Al-Kazemi, 2012), microeconomics (Tetik & Tetik, 2022) and in one university across 59 different majors (Oliphant, Jaynes, & Moule, 2020). Researchers have made calls for future research (Tetik & Tetik, 2022). Zooming out from teaching business ethics, Melé (2024) argued that business ethics ought to take a more holistic view of individuals. We agree, which is why we not only focus upon the individual and the group but also on

decision-making's cognitive, emotional, and biological aspects and how ethics comes into play.

The setting for our pedagogical innovation is the Driehaus College of Business at DePaul University, a private Catholic institution of just over 21,000 students, located in Chicago, Illinois. The Driehaus College of Business was established in 1912 as the College of Commerce and serves over 3,600 undergraduate students and over 1,700 graduate students within the Kellstadt Graduate School of Business, which is a part of the Driehaus College of Business. The Driehaus College of Business utilizes a mix of modalities including traditional in-person, flex, hybrid, and asynchronous courses. At our university, we strive to enhance our students' ethical competence, which we define as "an individual's capacity to make ethical decisions and implement them, resulting from the integration of knowledge, skills, and attitudes in managing ethical dilemmas" (Yilmaz & Güven, 2025, p. 1). To this end, the Ethics Across the Curriculum Committee (IBPE, 2007) published *Ethics 101: A Common Ethics Language for Dialogue* to inform how ethics is taught. Our pedagogical approach aligns with proactive methodologies that focus on facilitating the development of moral reasoning among students (Cornelius et al., 2007). At the Driehaus College of Business, where we serve on the faculty, we try to align what we teach in the classroom with our mission at the College of Business, much of which highlights ". . . to develop socially responsible leaders and managers . . ." (Driehaus College of Business, 2024, p. 3). To this end, we see our roles as moving closer to sensitizing business students to understand and appreciate their future responsibilities including ethics (Patel, 2024). The primary tools we employ include experiential learning and games and simulations, which Jaganjac et al. (2024) described as "learning by doing rather than traditional 'chalk-and-talk' format" (p. 13).

This experiential approach to learning has become increasingly important in business education (Obi et al., 2022). Following Kolb's (1984) framework, experiential learning involves reflecting upon and evaluating what was learned and then considering how that learning may be useful in future contexts. It is well established that "cognitive and behavioral susceptibilities . . . might lead to (often unwitting) unethical decision making" (Prentice, 2004, p. 56). These susceptibilities, also known as heuristics, biases, and other psychological tendencies, can be effectively addressed through student participation in classic experiments (Prentice, 2004).

2. Theoretical Foundation and Literature Review

Evolution of Ethics Education Challenges

Designing effective business ethics courses presents multiple challenges. Traditional approaches often fail to address the real-world barriers to ethical

reasoning, including cognitive biases and student resistance (Tormo-Carbó et al., 2019). Novel scientific ideas in business ethics and business ethics curricula are adopted although slowly (Messick, 2004). Based on meta-analytic research of business ethics instruction, effective pedagogical approaches should include field-specific applications, a small number of focused learning objectives, attention to future student career needs, emphasis on motives and decision strategies, active participation, and face-to-face instruction (Medeiros et al., 2017). Notably, short and focused training programs have been deemed most effective in this meta-analysis.

Contemporary students, particularly millennials and Generation Z, prefer interactive learning over traditional lecturing approaches (Sholihin et al., 2020). According to Gabrielova and Buchko (2021), the earliest members of the millennial generation had reached 39 years of age, while those born at the tail of this generational cohort in 1996, often termed "late millennials," are currently navigating their mid-20s. Simultaneously, Generation Z encompasses individuals born from 1995 through 2012 and alternatively referred to as digital natives (Gabrielova & Buchko, 2021).

A persistent challenge in business ethics education involves narrowing the gap between ethical theories and real-world application (Sholin et al., 2020). Educators also face ethical tensions when facilitating ethics discussions (Patel et al., 2024) because student openness to learning ethics concepts varies considerably. Recognizing that current students are fundamentally different from those over 20 or even 10 years ago, educators must acknowledge that continuing to employ the same pedagogical methods from two decades past is insufficient (Montiel et al., 2020). The imperative now lies in adapting teaching methods and resources to align with contemporary student characteristics, effectively engaging them in the educational experience through innovative approaches that leverage technology and mobile applications to address societal grand challenges (Montiel et al., 2020). Beyond these generational and pedagogical considerations, emerging research (Jiang et al., 2023; May et al., 2023; Trémolière & Gosling, 2025; Zickfeld et al., 2025) indicates that ethics instruction's timing and biological context may be equally important factors to consider.

Biological Foundations of Ethical Decision-Making

Circadian biology, a branch of biology, is the focus here. The body's internal biological clock, known as the circadian rhythm, regulates numerous processes including sleep patterns, body temperature, and eating as well as cognitive and physical capabilities (Montaruli et al., 2021). Cognitive function encompasses moral decision-making abilities, incorporating judgments, evaluations, and behavioral response choices (Garrigan et al., 2018).

Individual differences in circadian timing are common, with these biological rhythms exhibiting considerable variation across different people. Horne and Östberg (1976) described chronotype as differences among individuals related to

morningness–eveningness preferences. Previous investigations have established that chronotype can impact behaviors and experiences at work (Schilbach et al., 2025). Moreover, research findings demonstrate that mental performance reaches peak levels when cognitive tasks align with a person's natural chronobiological patterns, a phenomenon known as the synchrony effect (May & Hasher, 1998).

The synchrony effect describes how individuals tend to perform better when their activities align with their natural daily rhythm, that is, chronotype. Morning types typically do their best work in the morning, while evening types function optimally later in the day (May et al., 2023). Additionally, an individual's chronotype determines when their energy reaches optimal levels throughout the daily cycle, with peak periods varying considerably between individuals based on their chronotype (Ingram et al., 2016). Building on this foundation, Kouchaki and Smith (2014) discovered that time of day significantly impacts ethical decision-making, with self-regulatory depletion posited as the underlying mechanism.

The morning morality effect, defined as the tendency for people to act more ethically in the morning than in the evening, is attributed to homeostatic processes that regulate energy expenditure throughout the day. Individuals become depleted by day's end and lack the energy to self-regulate effectively (Kouchaki & Smith, 2014). The research on morning morality has attracted broad interest across psychology, economics, and sociology. While some studies have replicated the initial findings (Gunia et al., 2014; Ingram et al., 2016; Mozgai et al., 2017), others have failed to replicate the morning morality effect (Arechar et al., 2017; Brøchner et al, 2020; Roeser et al., 2016; Vranka et al., 2019; Zickfeld et al., 2025). In recent research, researchers have even found reverse effects, with participants in morning conditions being significantly more likely to overreport higher scores on knowledge tests compared to evening participants (Cornwell et al., 2021). These mixed results provide "evidence for a small and unstable morning morality effect" (Jiang et al., 2023, p. 6) that may exist with specific populations in specific situations (Zickfeld et al., 2025).

Despite these mixed findings, researchers have explored the association between chronotype and cognitive functioning, including decision-making (May, 1999). Gunia et al. (2014) concluded that the chronotype morality effect was a better predictor of ethical behavior than time of day alone was, suggesting that individual biological differences must be considered alongside temporal factors. Thus, morning type individuals are generally more ethical in the mornings (when their energy is higher), whereas evening type individuals are generally more ethical in the evening (when their energy is higher). Recent findings support the additive energetic costs of homeostatic and circadian drives, particularly for morning-type individuals: with depleted energy resources and low circadian drive in the evening, individuals' ability to self-regulate is diminished, leading to increased mistakes and risk-taking behaviors (Haggar et al., 2010; Ingram et al., 2016). Given these demonstrated effects of chronotype on decision-making and self-regulatory capacity, researchers have begun examining how these biological rhythms influence workplace dynamics and organizational outcomes.