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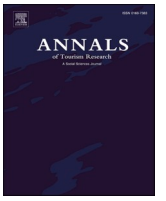

FULL LENGTH ARTICLE

Darwin in the classroom: Incorporating an evolutionary perspective into tourism and hospitality education

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ABSTRACT

Researchers are making increasing use of an evolutionary perspective to understand the behaviors of tourists and residents, yet the implications of our evolved psychological mechanisms for classrooms and education remain underexplored. The purpose of this research is therefore to highlight and analyze the vast untapped potential of evolutionary psychology for tourism and hospitality education. The authors provide researchers and educators with a guide to evolutionary psychology as well as demonstrate the utility of an evolutionary perspective through three education cases. These three applications are complemented by a process model that illustrates how to use and test evolutionary theory in tourism and hospitality education empirically. We conclude by providing future research avenues with the aim to advance tourism and hospitality education.

Introduction

Why does discrimination exist in the classroom? Why do students procrastinate? How do they decide whether to collaborate or compete? Finding answers to these exemplary questions is important for educators and education researchers, and if they are any similar to Charles Darwin, they would start by asking the following question: What is the adaptive function that the observed behavior might serve? Or put even simpler: What is the ultimate motive for this behavior?

Unveiling the ultimate motive for a behavior is a key aspect of evolutionary psychology, a discipline that builds on modern evolutionary theory. Indeed, the foundational idea of evolutionary psychology is that humans have inherited psychological mechanisms from their ancestors that would have helped them to survive and reproduce. Similar to Charles Darwin who brought a new lens to the study of species, evolutionary psychology can provide novel answers to fundamental questions in tourism and hospitality education and can spark intriguing and creative studies and practices that can complement and enrich existing ones. Thus, the present paper sets out to join the two, until now, disconnected fields of tourism and hospitality education and evolutionary psychology with the purpose of advancing the former through the latter.

In recent years, scholars within tourism and hospitality have made increasing use of evolutionary psychology to investigate various attitudes and behaviors including tourism biases (Kock, Nørfelt, et al., 2020), tourists' risk-taking (Kim & Seo, 2019), and attitudes toward service robots (Kang et al., 2022). Further, research on learning and education has also taken an evolutionary psychology perspective to primarily look at how humans—particularly children—learn (e.g., Geary, 2002; Genovese, 2003; Howard-Jones, 2014;

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Sweller, 2022). However, scholars have yet to apply an evolutionary psychology perspective to examine higher education in tourism and hospitality. Such an application cannot be transferred directly from studies on consumers or tourists due to the differences in these contexts: Indeed, students are typically focused on learning, are exposed to unique social dynamics, diverse peer groups and social hierarchies, and are constantly requested to engage in learning performances that involve active interaction with other students and the teacher.

This missing perspective constitutes an attractive research opportunity because tourism and hospitality education is unique in more than one regard and faces particular challenges. Importantly, the demand and supply of tourism and hospitality education have decreased in many institutions since the pandemic (Airey, 2024; Xu et al., 2022). In addition, tourism and hospitality education is a particularly multidisciplinary and diverse educational field as reflected in tourism and hospitality studies being situated within different schools at different universities (e.g., schools of business or arts), as reflected by regional traditions of hospitality and tourism programs, and as reflected in student cohorts being increasingly international (Lugosi & Jameson, 2017). Consequently, tourism and hospitality programs attract a diverse group of students which, at times, can put a strain on the student experience. Furthermore, tourism and hospitality have been noted to attract a "long tail" of students who are lower in motivation and academically weaker than other disciplinary areas (Airey et al., 2015; Mei, 2019), creating an urgent need to better understand how to encourage desirable behaviors among students (e.g., cooperation) and to prevent negative ones (e.g., free riding)—tasks which evolutionary psychology, together with other disciplines, can help us accomplish through its focus on behaviors.

Based on the above observations, the present research aims to introduce the logic and epistemological approach of evolutionary psychology to tourism and hospitality education, and by doing so, explaining the potential which evolutionary psychology has for analyzing and advancing tourism and hospitality education.

Method

This paper follows a conceptual approach, because its purpose is to broaden existing thinking through connecting works from different disciplines (Gilson & Goldberg, 2015). Specifically, the paper's overarching focus is theory adaptation (Jaakkola, 2020) in which educational research in tourism and hospitality will be enhanced by examining it from the perspective of evolutionary psychology. Consequently, in the context of the present study, tourism and hospitality educational research functions as a domain theory, i.e., the study area which a given research effort contributes to (Kirillova & Yang, 2022), that will be enriched through evolutionary psychology as a method theory, i.e., "a meta-level conceptual system for studying the substantive issue(s) of the domain theory at hand" (Lukka & Vinnari, 2014, p. 1309). In this way, this approach aligns with the bridging strategy to develop courageous research ideas proposed by Kock, Assaf, and Tsionas (2020).

In order to take a systematic approach to conceptual research, a logical flow of arguments is needed (Jaakkola, 2020). The structure of the present paper has therefore been carefully chosen, so its components correspond to important constituent themes of conceptual research (Xin et al., 2013; Zhang et al., 2023). First, we introduce the reader to particularities of tourism and hospitality education followed by the fundamental principles of evolutionary psychology, as many (if not most) tourism and hospitality scholars are not familiar with this discipline. Second, we 'apply concepts to practice' (cf. Xin et al., 2013) by analyzing three cases that are of practical importance to tourism and hospitality education: competition and status in the classroom, collaboration and free-riding, and discrimination. In connection with these three cases, we also 'translate concepts to new contexts', because we connect theory from evolutionary psychology to the context of tourism and hospitality higher education. These three illustrative cases are complemented by a guide (Table 1) that outlines various evolution-informed research avenues for tourism and hospitality education, thus 'finding conceptual gaps' for further research to investigate. Lastly, we conclude by reflecting on the advantages of educators and education researchers taking an evolutionary psychology lens.

Particularities of tourism and hospitality education

As noted by Airey (2024, p. 3): "At Annals' 50th anniversary, tourism education finds itself in a challenging position." Although we assert that higher education is an inherently demanding endeavor, regardless of the subject matter, we contend that tourism and hospitality education possesses distinct characteristics that contribute to what David Airey describes as a particularly challenging position. In the following, we explicate these particularities and the challenges that can arise from them. Specifically, we focus our analysis on *what* is being taught, *how* tourism and hospitality are being taught, and *who* tourism and hospitality students are. The four particularities we identify can be referred to as multidisciplinarity, practice-orientation (vocationalism), characteristics of students, and students' performance. Explicating these particularities and consequent challenges paves the way for examining these challenges through the lens of evolutionary psychology later in this research. Given the persistence of these challenges, we suggest that applying a novel theoretical approach to their understanding is a promising and timely approach.

First, tourism and hospitality programs and subjects are not a monolith but differ significantly in terms of which aspects of tourism and hospitality they emphasize and which disciplinary perspective(s) they take. As noted by Petrova (2015, p. 385-386), "the range of tourism degrees provided by universities means that there is no common agreement about the nature of skills provided by tourism degrees." This variability might in part be attributed to the lack of consensus on what capabilities graduates should have as well as the multidisciplinarity of the fields of study themselves (Gross et al., 2017; Petrova, 2015). Indeed, tourism and hospitality education has been shaped by academics from various disciplines and involves teaching that draws on a range of disciplines, including economics, psychology, and anthropology (Airey, 2024; Gross et al., 2017). Consequently, tourism and hospitality programs are taught within different schools at different universities: from combined degrees involving multiple schools (Bird et al., 2015) to being taught within a

Table 1
A guide to advance tourism and hospitality education through evolutionary psychology.

Fundamental Motive	Underlying Theories	Theoretical Insight	Exemplary Applications to Tourism and Hospitality Education
Self-protection: Evade danger	Error management theory (Haselton & Buss, 2000)	People are biased toward loss aversion when the costs of a loss outweigh the benefits of a win	Procrastination as an expression of an evolved tendency to prioritize immediate threats over long-term planning. Relevance: Tourism and hospitality education experiences a long tail of underperforming students (Airey et al., 2015) who may be particularly prone to procrastination.
	Future discounting (Griskevicius et al., 2012)	People tend to value the present over the future	Students' openness to new ideas as inversely related to a bias toward familiarity when a self-protection motive is activated. Relevance: Tourism and hospitality education is multidisciplinary, requiring students to learn and apply many different types of knowledge (Xu et al., 2018).
Disease avoidance: Avoid getting sick	Intergroup bias theory (Brewer, 1999)	People distinguish between 'us' and 'them'	Student-student discrimination in environments where disease cues are present (e.g., in winter, in crowded classrooms, in dirty classrooms). Relevance: Students in tourism and hospitality degrees come from diverse ethnic backgrounds (Kim & Jeong, 2018; Lugosi & Jameson, 2017), making it crucial to address the potential of discriminatory behaviors (e.g., noncollaboration).
	Behavioral immune system (Murray & Schaller, 2016)	People behave in ways to avoid getting sick	Teacher-student discrimination in environments where disease cues are present (e.g., in winter, in crowded classrooms, in dirty classrooms). Relevance: Tourism and hospitality educators teach and assess students from different ethnic backgrounds than themselves, making it crucial to address the potential of discriminatory behaviors (e.g., biases in marking).
Affiliation: Form cooperative alliances	Reciprocal altruism (Axelrod & Hamilton, 1981)	People help others with the expectation of them to return the favor	How to foster collaboration through a sense of group membership. Relevance: Tourism and hospitality degrees are studied by a diverse set of students. Understanding how to avoid social differentiation in class is therefore important.
	Punitive sentiment (Price et al., 2002)	People have evolved mechanisms to combat free-riding	How to effectively combat free-riding in group work, including whether age differences among group members impact free-riding tendencies. Relevance: Limiting free-riding can give students better experiences of group work. In tourism and hospitality degrees, students often collaborate across age groups, making it relevant to understand if this impacts free-riding.
Status: Gain respect and stand out	Costly signaling theory (Zahavi, 1975)	People devote resources to costly signals as fitness evidence	Disruptive student behaviors as a way to gain status. Relevance: Tourism and hospitality education has problems with student engagement (Ramakrishnan & Macaveiu, 2019).
	Competitive altruism (Hardy & Van Vugt, 2006)	People compete to appear as the most prosocial individual	Cooperative behaviors as an expression of prestige-based status. Relevance: Fostering an environment conducive to cooperation is important in tourism and hospitality education which often involves group work (Deale et al., 2010).
	Prestige vs. dominance aspirations (Henrich & Gil-White, 2001)	People seek status through or prestige or dominance	
Mating: Acquire a desirable mate	Differential parental investment (Trivers, 1972)	Women and men differ in evolutionarily-relevant ways due to having faced different challenges in relation to mating	Differences between genders (e.g., learning, competitiveness, tendency to cheat, self-efficacy, hubris). Relevance: Understanding how demographic variables like gender influence classroom behaviors can be used to better understand classroom dynamics.
	Intra-sexual competition and sex ratio theory (Charnov, 1982).	People compete for mates by engaging in strategic behaviors such as risk-taking and impulsivity	Investigating the effects of sex ratio on classroom behaviors. Relevance: Tourism and hospitality degrees are characterized by having more female than male students (Schoffstall, 2015) which could impact student behaviors through sex-ratio effects.
Play: Learn and	Pretense play (Steen and Owens, 2000)	Pretense play helps humans practice and learn important skills in safe ways	The efficacy of various teaching tools and methods (e.g., gamification, role playing, serious play) and the conditions needed for them to be effective.

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Table 1 (*continued*)

Fundamental Motive	Underlying Theories	Theoretical Insight	Exemplary Applications to Tourism and Hospitality Education
practice new skills	Functions of play (Moraes et al., 2022)	Play has many functions including signaling desirability to mates, making friends, and competing for status	Relevance: Tourism and hospitality scholars have called for more research into such teaching tools (Nair, 2022) as well as for more applications of such teaching tools in practice (Aguiar-Castillo et al., 2020).

specific school such as the arts faculty or the business school. This multidisciplinarity also means that students are expected to be able to navigate in and apply knowledge from diverse fields (Xu et al., 2018) and that students might, themselves, represent diverse interests and perspectives in terms of their educational background. As an example, the Master of International Tourism and Hospitality Management at Griffith University recognizes bachelor's degrees in diverse areas such as real estate, technology, entertainment, and marketing as relevant for admission (Griffith University, 2024). This diversity in backgrounds can be a challenge to manage because, while having different educational backgrounds might lead to students engaging in more creative and rigorous group work, it might also make it harder for students to collaborate as well as lead to "varying degrees of subject bias in the learning process" (Gao, 2024, p. 1).

Second, tourism and, particularly, hospitality degrees and subjects tend to have a stronger vocational focus than many other degrees in the social sciences (e.g., Airey, 2024; Gross et al., 2017). For example, some hospitality degrees make use of training restaurants and hotels (e.g., the use of the ICON hotel at Hong Kong Polytechnic University; Tse, 2014), and internships are a core part of many tourism and hospitality degrees—and sometimes a prerequisite for graduating (Kim & Jeong, 2018). Relatedly, to provide a more engaging and practice-oriented teaching experience, there has been a call for increasing the use of gamified tools such as simulations and game-based learning activities (Gao, 2024; Mei, 2019; Nair, 2022). Aguiar-Castillo, Hernández-López, De Saá-Pérez, and Perez-Jimenez (2020, p. 12), for example, note that "[g]amified technology seems a promising pedagogical approach to engage students at a deeper level of cognition in the tourism industry." However, there is a significant variance in how and to what extent gamification is utilized across tourism and hospitality subjects, with most programs arguably lagging behind. Mei (2019), for instance, notes that simulations are still not widely used.

Third, another particularity of tourism and hospitality education pertains to *who* is studying them. In this regard, the gender composition of the classroom constitutes a particularly striking observation. Indeed, while sex ratios across universities now skew toward more female than male students (Hare, 2020), this skew seems particularly strong within tourism and hospitality degrees. In a survey of hospitality programs in the U.S., Schoffstall (2015), for example, found that 66.7 % of students were female—an observation mirrored by Pizam (2006) a decade earlier. In contrast, the sex ratio of teaching staff tends to be skewed toward males (Schoffstall, 2015). Skewed sex ratios in the classroom can potentially impact the choice to study a given degree by the minority gender (Pizam, 2006) as well as how students behave (Lavy & Schlosser, 2011; Salas-Rodríguez et al., 2022). The potential impact of sex ratio on classroom behaviors, however, warrants further study in higher educational contexts.

In addition to having become more female-dominated, tourism and hospitality degrees have also become more culturally and ethnically diverse (Hornsby & Scott-Halsell, 2015; Kim & Jeong, 2018), and a growing number of international students has been observed (Lugosi & Jameson, 2017). The benefits of this development are clear for hospitality and tourism students for whom cultural sensitivity and understanding are important skills to develop (Lugosi & Jameson, 2017). However, diversity can also create tensions and challenges, including students not being well-versed in the language of instruction, strains on the student experience, and difficulties adjusting to unfamiliar teaching and collaboration norms as well as to local or fellow students' culture (Lugosi & Jameson, 2017; Macionis et al., 2019). A result of a survey, for example, showed that prejudices among hospitality students were common with racial and ethnic prejudices being the second most prevalent type (Deale & Wilborn, 2006), and studies have found that, despite campuses becoming more culturally diverse, there is minimal interaction taking place between students from different cultures (Kimmel & Volet, 2012).

Fourth, a challenge of particular importance to tourism and hospitality education relates to the variance in academic performance of students. Indeed, while tourism and hospitality degrees also attract highly motivated and academically strong students—some of whom may have extensive industry experience—, scholars have also spoken of "a long tail" of tourism education marked by poorly performing students (Airey et al., 2015; Ramakrishnan & Macaveiu, 2019). In some cases, the latter type of students may have chosen their degree "for lack of choice" and may not always have a clear idea of (1) what a career in tourism entails, and (2) what they will be studying (Ramakrishnan & Macaveiu, 2019, p. 40). Some current challenges also relate to a weakening of independent learning (Lugosi & Jameson, 2017) as well as low classroom engagement and high drop-out rates (Ramakrishnan & Macaveiu, 2019). Low academic performance might impact students' future careers negatively, as it has been found that, although practical experience plays a stronger role for employability after graduation, grade point averages are also a predictor (particularly for female students; Boto-García & Escalonilla, 2024).

While the above discussion does not intend to provide a comprehensive analysis of the characteristics of tourism and hospitality education, it becomes evident that tourism and hospitality education possesses various particularities that can also constitute challenges for both students and teachers. Being aware of and discussing those particularities and challenges is an important prerequisite to later explain how evolutionary psychology can advance tourism and hospitality education.

Principles of evolutionary psychology

The epistemology of evolutionary psychology (i.e., the way the discipline generates knowledge) centers around a distinction between proximate (i.e., immediately obvious) and ultimate (i.e., fundamental) explanations of behavior. This principle can be traced back to the taxonomy of Nobel Prize-winning ethologist Niko Tinbergen's (1963) work. These two types of explanations are complementary and essential for achieving a comprehensive understanding of a given phenomenon. However, most studies in education, tourism, hospitality, and psychology have focused exclusively on proximate motives to explain behavior, thereby neglecting the ultimate motive, which is the only type of explanation that can identify the adaptive function that a behavior has served for our ancestors. Adding to this challenge, some tourism scholars have had difficulty distinguishing between proximate and ultimate motives, making it important to rectify such misconceptions (Nørfelt & Kock, 2024).

To illustrate the difference between the two types of explanations, consider the following example: Why is masculinity associated with leadership abilities for hotel managers (Xiong et al., 2022)? A proximate explanation is that people have been socialized to associate masculinity with leadership abilities. While this explanation may be correct, the ultimate explanation is that in our ancestral past, leadership involved physical activities such as fights with rivals, warfare, and hunting. Thus, favoring strong and masculine individuals in leadership positions was evolutionarily meaningful (Bastardoz & Van Vugt, 2019). Yet, in our contemporary lives such traits have become increasingly irrelevant for leadership positions, thereby creating a mismatch between evolved leader preferences and modern leadership requirements.

Evolutionary mismatch theory formalizes such mismatches. For most of human history (i.e., 99 %), our ancestors were nomadic hunter-gatherers with evolved brains shaped to solve adaptive problems in the ancestral environment (Li et al., 2018). However, our modern-day environment vastly differs from our ancestors', resulting in behavioral mismatches. Many of the phenomena analyzed in this research are mismatches which evolved from once adaptive functions in our ancestral past to being dysfunctional in our contemporary lives.

The fundamental motives framework

Our ancestors faced various challenges to overcome in order to ensure their survival and ability to reproduce. Evolutionary psychology posits that distinct fundamental motivational systems evolved to help our ancestors overcome these challenges (Griskevicius & Kenrick, 2013). The motives can be activated by internal or external cues and, when activated, affect how an individual is likely to behave. As such, each motive provides a unique ultimate explanation to many human behaviors and lends itself to education researchers and practitioners who want to understand the reasons (internal and external cues) why students and teachers behave the way they behave, with the potential goal of changing disadvantageous and stimulating advantageous behaviors. Building on previous research (Kock et al., 2018), we identify the following fundamental motives as being of particular relevance to tourism and hospitality education:

Self-protection

Studies that examine inter-racial encounters at universities may conclude that racism arises due to negative media portrayals of minority groups, socialization, or power structures in society. While such explanations are undoubtedly correct, they are proximate and create an incomplete picture at best. As a complement to such explanations, an evolutionary psychologist would ask for the ultimate explanation, that is, what is the underlying reason that people discriminate against others. Evolutionary psychology suggests that out-group members can activate the self-protection motive that predisposes humans to avoid physical harm (Griskevicius & Kenrick, 2013). This activation is a derivate from our ancestral past in which intruding foreigners often posed a threat (Schaller et al., 2003). The self-protection motive can also be triggered by other cues that signal danger, such as angry faces, reminders of one's own vulnerability, or phobia stimuli (Griskevicius & Kenrick, 2013). The activation of this motive is functional in the way that it predisposes people to engage in self-protective behaviors such as higher aversion to losses (Li et al., 2012) or collectivism and conformity (Griskevicius et al., 2006).

Disease avoidance

Our ancestors also had to protect themselves from catching potentially life-threatening diseases. A disease avoidance motive evolved as a survival mechanism, allowing our ancestors to instinctively react to cues signaling disease risk (e.g., a person coughing, a dirty room) by, for example, avoiding unfamiliar people and places (Griskevicius & Kenrick, 2013; Kock, Nørfelt, et al., 2020). As we will see later, a disease avoidance motive may have significant implications for tourism and hospitality higher education, particularly in understanding discriminatory behaviors among the diverse student cohorts typically enrolled in these programs. In addition, the disease avoidance motive may have implications for how the teaching environment should be designed. For example, when a disease avoidance motive is activated, people have adverse reactions to crowdedness (Kock, Nørfelt, et al., 2020). At times when disease cues are prevalent (e.g., in winter), it might therefore benefit student well-being to undertake classes in spacious environments rather than in crowded auditoriums where students sit side by side.

Affiliation

Humans have always lived in groups because group-living increased the probability of survival through resource sharing (e.g., food, knowledge and defense). This need to belong predisposes humans and animals to cooperate with others for mutual benefits (Baumeister & Leary, 1995). Today, having friends and collaborators is crucial too, and the university is a particularly rich context in

which to examine affiliation motives. For example, hospitality students frequently join hospitality-related clubs and events and affiliate with their (former) university as alumni (Cha et al., 2013). The affiliation motive can be activated by making, having or losing friends and makes people more altruistic and extroverted in turn (Griskevicius & Kenrick, 2013).

Status

Humans do not only have an inclination to affiliate but also to stand out from their peers. Achieving and maintaining dominance and prestige would have increased the probability of survival in ancient times: Alpha leaders benefited from prioritized access to resources, such as food and mating partners. Status is also crucial at the group level because it determines hierarchies which facilitate leader–follower coordination and the reduction of resource conflicts (Anderson & Brown, 2010). In contemporary times, travel behaviors such as posting pictures on social media (Boley et al., 2023) and luxury tourism (Kock et al., 2018) can be explained by people's motive to signal status to others. In education, understanding students' effort to learn as a means to acquire status can address various important questions, such as how to motivate students to learn or how to recognize their achievements appropriately. This becomes particularly crucial in a tourism and hospitality context where researchers have recognized current challenges related to decreasing classroom engagement (Ramakrishnan & Macaveiu, 2019). The status motive can be triggered by competition, low self-esteem and deprivation of power and leads to an increased need to show-off (Griskevicius & Kenrick, 2013).

Mating

Survival alone is evolutionarily useless if the individual does not reproduce its gene pool. Thus, attracting and retaining a mating partner is crucial to achieve reproductive fitness (Griskevicius & Kenrick, 2013). The motive of mating leads to two different yet related phenomena: Intra-sexual competition and intersexual selection. Intra-sexual competition refers to same-sex members competing for access to mates, while intersexual selection refers to the effect of opposite-sex mate-choice preferences. Both play an important role in understanding contemporary behaviors and may have interesting implications in university contexts. For example, the sex composition of the class is likely to have an effect on learning outcomes (Orlitzky & Benjamin, 2003) which could be explored further based on the insight that sex ratios influence behaviors due to intrasexual competition (Kock, 2021). In a secondary education context, Salas-Rodríguez et al. (2022), for example, found that classroom sex ratio affected risk-taking in male students. As more students in tourism and hospitality programs tend to be female than male (Pizam, 2006; Schoffstall, 2015), studying the effects of female-skewed sex ratios on in-class behaviors is particularly relevant.

Play

Our ancestors acquired and practiced new skills through playing (Pellegrini et al., 2007; Steen & Owens, 2001). The play motive could thus be of interest to educational researchers and practitioners. In fact, Gray (2011) suggested that by taking an evolutionary approach to playing, we may be able to better align schooling with human psychology. This suggestion is not only relevant for children, but potentially also for university students. While playing is associated heavily with children in everyday language, common behaviors in adults, such as different tourism activities, playing sports, and watching movies (Bloom, 2010; Nørfelt et al., 2023), also constitute forms of play. In educational contexts, the interest in and effectiveness of practices such as gamification, serious play, and role playing might also be rooted in our natural drive to learn through playing. Gamification, for example, allows educators to incorporate elements of playing into lectures and tutorials (Aguiar-Castillo et al., 2020; Colombero & Dal Zotto, 2022) and has been found to contribute positively to learning (Sailer & Homner, 2020). Such practices have been argued to be promising for tourism education (Aguiar-Castillo et al., 2020; Nair, 2022), making the play motive particularly important to investigate for tourism and hospitality education.

An evolutionary approach to advancing tourism and hospitality education

Having provided an overview of the bases of evolutionary psychology, we now apply it to three selected cases to illustrate how evolutionary psychology can spark intriguing new insights into tourism and hospitality education. While discussing and applying each fundamental motive in-depth is beyond the scope of this research, the three cases provide specific exemplary applications of evolutionary psychology to phenomena in tourism and hospitality education.

Case 1: Competition and status in the classroom

Examining the role of status is an interesting and novel approach to understanding the forces that shape tourism and hospitality education. Specifically, while tourism has reached a point of maturity, professionalism and recognition (e.g., Airey, 2008), it is still a comparatively young discipline which status may be questioned by some outsiders who are confused with the field's co-existence between liberal and vocational education (Dredge et al., 2012). In consequence, students, but also teachers, of tourism and hospitality, may, at times, feel the need to justify their study choice against more traditional and established areas of study. In essence, this circumstance is a matter of tourism and hospitality students' status in the wider university community. While neglected in existing research, understanding its role may yield intriguing new insights into tourism and hospitality education.

In addition, we suggest that status also plays an important role among tourism and hospitality students. As Airey et al. (2015) note, a characteristic feature of tourism education is that it has a long tail, meaning that tourism and hospitality is taught at a number of elite research centers but also many lower-ranked institutions. In consequence, it is likely that students enrolled at an elite institution confer high status, while those enrolled at mediocre institutions will confer low status. In consequence, this constellation as well as the above-discussed status of tourism and hospitality education may foster an overt focus on status and competition and possibly elitest thinking

among some students, and perceived status threats among other students.

A trade-off exists between humans' need to stand out to signal status and to fit in to signal group affiliation. This tension between the affiliation and status motives also shapes students' aspirations and interactions, and its importance has been documented in seminal educational theorizing (Johnson & Johnson, 1989). Particularly, relative status is an important motive in tourism and hospitality education as students compare themselves to each other and compete for the same jobs after graduation. Status also plays a role in how students strategically choose to present their degree: In the context of Israeli hospitality and tourism management students, Poria and Reichel (2020) found that participants would use different names for their degree depending on the situation. Universities themselves compete and seek status through, for example, advertisements and rankings that students use to approximate the status and career prospects they gain from obtaining a degree from the respective institution (Ayikoru et al., 2009; Khan et al., 2013). Evolutionary psychology yields intriguing new perspectives and hypotheses for this important domain. In the following, we outline that many competition-related phenomena at universities are detrimental and discuss how knowledge of evolutionary psychology can be used to address this problem.

Evolutionary psychologists document that humans use two distinct paths to elevate their status: *prestige* and *dominance* (Henrich & Gil-White, 2001). Status through *prestige* is acquired by having and sharing resources such as skills and knowledge with others. Thus, individuals high in prestige are sought after and liked because of the benefits they provide for other members of the group. In contrast, dominance-based status stems from displaying symbols of power and superiority that elevate the dominance-oriented individual without providing benefits for others (Cheng et al., 2013). Those individuals are often met with envy and are not well liked.

Applied to an educational setting, a student might elevate their prestige-based status by engaging in class (e.g., answering the lecturer's questions, sharing their notes with other students, working well in groups or even taking a leadership role). Indeed, exhibiting such behaviors shows fellow students that (1) the student is intelligent and competent and (2) that the student is so resourceful that they are able to help others without falling behind themselves. This phenomenon is labeled *competitive altruism,* i.e., "the process through which individuals attempt to outcompete each other in terms of generosity," and has been theorized to exist because it would have helped our ancestors gain prestige-based status (cf. Hardy & Van Vugt, 2006, p. 1403). Conversely, a student might gain dominance-based status by bringing an expensive handbag to class or by 'bragging' about getting a sought-after internship position. Accordingly, prestige-based status spurs 'healthy' hierarchies, decreases group conflicts, and increases resource sharing, while dominance-based status results in the opposite (Cheng et al., 2013).

These insights are useful to understand pressing issues in universities that may often stem from dominance-based status pursuit. For example, research indicates that business school students who are high on materialism suffer from lower well-being and greater distress (Kasser & Ahuvia, 2002). An experimental investigation could therefore examine whether exposure to material cues (e.g., luxury products displayed in the classroom by fellow students) inhibits competitive altruism and decreases well-being. Another interesting avenue is to mitigate dominance by lowering students' zero-sum bias. This bias reflects an assumption that resources gained by one party necessarily correspond with resources lost by another party (Pilditch et al., 2019). While the zero-sum bias is evolutionary meaningful in the competition over resources, it is dysfunctional in a university where desired resources such as grades are not subject to a zero-sum setting (Meegan, 2010). Alleviating the zero-sum fallacy by helping students to cognitively disentangle gains and losses and making them consider the possibility of win–win situations is crucial to mitigate dominance and nurture competitive altruism.

Lastly, and perhaps counter-intuitively, it is also possible that students may engage in behaviors that disrupt class in their search for status. Indeed, by, for example, signaling their non-engagement in class (e.g., leaving an exam early, talking loudly to friends, not engaging in tutorials, arriving late, submitting work late hence incurring a penalty), students may (subconsciously) signal that they are so intelligent and resourceful that they are able to engage in these behaviors and still make it through university. Following this line of thinking, the challenge observed in tourism and hospitality education of weakening student engagement in class (Ramakrishnan & Macaveiu, 2019) could, at least in part, represent an undesirable expression of the status motive. This prediction is based on the *handicap principle* from evolutionary psychology which states that organisms may engage in behaviors that incur a cost for themselves (here: getting in trouble with the teacher, performing poorly in assignments/exams) to signal their ability to incur said cost and still manage to survive and thrive (Hardy & Van Vugt, 2006). Future research could thus investigate the potentially double-edged sword of activating status motives during class: On the one hand, enhancing the sharing of knowledge through competitive altruism and on the other hand increasing disruptive behaviors and dominance-based status.

Case 2: Collaboration and free-riding in the classroom

Collaboration is considered an important ability that students should master (Boer & Otting, 2011; Chen et al., 2004), and group projects are common in hospitality and tourism subjects (Deale et al., 2010). As previously discussed, tourism and hospitality education is characterized by a diversity in students' disciplinary, linguistic, and cultural backgrounds. In addition, tourism and hospitality degrees themselves are also diverse and often confront the student with multiple disciplinary foci and heterogeneous curricula (Gross et al., 2017; Xu et al., 2018). This setup can pose a challenge to collaboration, because the differences between the individual students constitute a substantial barrier to finding a common language, goal and work atmosphere. Indeed, as noted by Kimmel and Volet (2012, p. 158), there is evidence that "students are naturally inclined to seek social contacts entailing a low risk of negative or awkward experiences […] which is more likely with peers sharing similar values, beliefs, and attitudes." Another consequence of the diversity in tourism and hospitality education is therefore the formation of "cliques" among those students who have a lot in common. This contention, grounded in the seminal similarity attraction effect (Chen & Kenrick, 2002), can pose a challenge to collaboration and may even result in students being isolated in class. In response, evolutionary psychology can contribute with novel and unique insights to better understand and counter these challenges.

According to evolutionary psychology, collaboration is promoted by the fundamental motive of affiliation which predisposes people to engage in reciprocal altruism (Axelrod & Hamilton, 1981). Reciprocal altruism is based on social contracts according to which each individual is required to pay a cost to the group (i.e., sharing a resource such as knowledge) in order to be eligible to receive a benefit from that group (i.e., another resource such as a problem solution). Taking an evolutionary approach to student collaboration is fundamentally different from existing approaches that mainly focus on students' collaborative skills and how to develop these (e.g., Bedwell et al., 2014). Instead, evolutionary psychology emphasizes that students are inherently endowed with a collaboration motive and skills. However, this motive needs to be elicited through specific stimuli in the classroom. Evolutionary psychology can help identify these stimuli and thereby increase collaboration.

A student's willingness to collaborate often depends on whether they have an expectation that other students will do so as well. Thus, a big threat to collaboration is free-riding which has also been identified as an obstacle to effective learning at business schools (Harding, 2018) and in hospitality contexts (Boer & Otting, 2011). For example, as noted before, tourism and hospitality degrees are studied by a mix of highly motivated students and a long tail of underperforming students. The latter group of students may display their lack of engagement in free-riding behaviors, as lacking motivation and low (perceived) scholarly aptitude have been identified as antecedents of free-riding (Harding, 2018). Free-riding students are those who benefit from the group but fail to contribute their fair share of work. The ability of detecting and deterring those that receive benefits from the group without paying a cost used to be of utmost importance for survival, and human beings are well-equipped with mechanisms to detect and deter free-riding (Price et al., 2002). Evolutionary psychologists have shown that using punishments can effectively reduce free-riding and boost collaboration (Weber et al., 2018). They also highlight that people possess an innate mechanism for penalizing free-riders, known as punitive sentiment (Price et al., 2002).

While punitive sentiment is effective, punishing free-riders incurs a cost for the punishing individual, because it takes time and energy to punish someone, along with the risk of retaliation from those who are punished. It is here where teachers should intervene and communicate punishments for free-riders before group work, such as group-based self-evaluations or individual grading of group performances. Accordingly, an intriguing academic examination would be to experimentally test whether collaboration among students increases when punishments for free-riders are established, and particularly when punishments are executed by the teacher, rather than the students. Such insights would have important implications for the design of group work and group exams in higher education. Importantly, such work could also investigate whether having group members of different ages affects free-riding tendencies: Indeed, in tourism and hospitality degrees, mature-age students with industry experience would often have to work with younger students.

Evolutionary psychology also puts forward that the probability of collaborative success is maximized when altruism is not entailed to everyone but only selectively. It is for this reason that people engage in social differentiation (i.e., discrimination) and form groups because limiting mutual altruism to acknowledged in-group members lowers the risk of non-reciprocation (Brewer, 1999). A direct implication is to invest in group-building activities in class early on, such as by reminding students that they are part of the same program and course and belong to the same cohort. Creating this sense of group-membership may also help to overcome collaborative discrimination which, otherwise, can arise in tourism and hospitality contexts due to the diverse cultural backgrounds usually present in the classroom. Macionis et al. (2019), for example, noted that Singaporean students in Australia often felt that Australian students were reluctant to interact with them in class. In a related vein, evolution-based research documents that higher intergroup competition strengthens in-group collaboration (Francois et al., 2018). Thus, nurturing rivalry between universities as some do (e.g., the boat race between Oxford and Cambridge) may improve collaboration between students within a university.

Case 3: Discrimination in the classroom

Discrimination and self-segregation are important problems in higher education (e.g., Konrad et al., 2017; Milkman et al., 2015) and can affect minority students' intentions to continue their studies (Costen et al., 2013). Discrimination includes minority students being laughed at in class, not being interacted with, and being stereotyped as poor English speakers (Macionis et al., 2019) and might be particularly prominent in tourism and hospitality education due to the increasing ethnic diversity of students (cf. Kim & Jeong, 2018). In connection with this important topic, taking an evolutionary perspective can help educators to understand and potentially alleviate discrimination by addressing its root causes.

What could an empirical, evolution-informed investigation into the roots of discrimination at universities look like? Evolutionary psychologists posit that discrimination against foreigners was a means to avoid diseases (Faulkner et al., 2004). Pathogens have been a major threat for our ancestors (Wolfe et al., 2007), often decimating whole populations. In response to this threat, our ancestors have developed a ‘behavioral immune system’, a psychological tendency to avoid potential sources of disease such as foreigners or unfamiliar environments. Research (Kock, Nørfelt, et al., 2020) has found that this tendency lives on in our contemporary lives in the form of xenophobia. Thus, when signs of disease or physiological vulnerability is perceived, we expect students to be more discriminating and less willing to collaborate with other ethnicities and unfamiliar students in general (Murray & Schaller, 2016).

This above idea could be tested empirically by measuring students' explicit and implicit discrimination against foreign or culturally dissimilar students during winter when students are exposed to frequent coughing during the lectures (i.e., a cue that primes disease). Such a field study would then compare discriminatory behavior with a control group during summer where coughing and signs of disease are not present. The investigation outlined above could also be broadened to include other types of discriminatory behaviors. Indeed, our evolved motive to avoid disease is not only linked to xenophobia but also to a general inclination to stick with one's current in-group (Kock, Nørfelt, et al., 2020). When disease cues are salient, it could thus be that students prefer to work with the same people every week rather than to change groups from tutorial to tutorial. Importantly, the unintuitive link between collaboration intent and

wintertime (i.e., exposure to disease-related cues) would not have been yielded without the insights of evolution.

To visualize how proximate and fundamental motives can be activated by cues in the environment with consequences for education, we present a process model below (Fig. 1). Specifically, it illustrates how a simple behavior such as coughing in the classroom can activate a deep-rooted disease avoidance motive which impacts classroom activity and interaction. By applying additional seminal middle-level theories such as intergroup-bias theory (Brewer, 1999), regulatory focus (Higgins, 1997) theory, and loss aversion theory (Li et al., 2012), the process model thus yields novel hypotheses to be tested.

Conclusions

The present paper is the first to highlight and explain the untapped potential of evolutionary psychology to advance tourism and hospitality education. This is done by explicating the principles of evolutionary psychology and demonstrating how they can be applied to specific cases within tourism and hospitality education. In this way, we make use of the current literature on evolutionary psychology to shed light on and address the particularities and challenges of tourism and hospitality education. This is necessary because students act in a very different context than tourists or residents, with a particular social and institutional environment, different challenges and opportunities, and different motivations and aspirations. Importantly, while we focus on students and classroom teaching as the unit of analysis, it should be noted that the insights we generate can equally apply to teachers or examination situations.

First, this paper introduces tourism and hospitality education to a new epistemology centered around the distinction between proximate and ultimate motives. This dual focus allows education researchers to obtain a deeper understanding of why certain attitudes and behaviors can be observed because the more context-specific and readily observable proximate motives can be connected to the more subconscious and general fundamental motives. Herein also lies evolutionary psychology's ability to complement existing research: Indeed, most existing tourism and hospitality research has tended to focus on proximate explanations (Kock et al., 2018). Such explanations are valid and important but can be complemented by evolutionary psychology, because evolutionary psychology adds an extra level of analysis through its ultimate level focus. In this way, evolutionary psychology also highlights parallels between seemingly unrelated phenomena because attitudes and behaviors which appear very different on the surface can be traced back to the same fundamental motive (Kock et al., 2018). As an example, students' disruptive behaviors as well as their helping of classmates can both be explained through the status motive: one of them through the notion of the handicap principle and the other one through the notion of competitive altruism. Evolutionary psychology thus helps researchers avoid the emergence of isolated research areas by connecting a variety of human behaviors and attitudes back to the same core fundamental motives.

Second, evolutionary psychology rests on a hierarchy of theory and is thus not a single theory but rather a rich meta-theory which involves several middle-level theories (Kock, Nørfelt, et al., 2020). As such, an understanding of the evolutionary perspective opens tourism and hospitality educators to novel research questions and creative explanations across different theories, ranging from error management theory to costly signaling and reciprocal altruism. To test hypotheses derived from these theories, evolutionary psychology promotes methodological pluralism. This approach allows tourism and hospitality education researchers to use methods with which they are already familiar. Tourism and hospitality education research is also a particularly fruitful area for conducting field experiments, which has been heavily encouraged by evolutionary psychologists (e.g., Otterbring et al., 2020), because of the access to

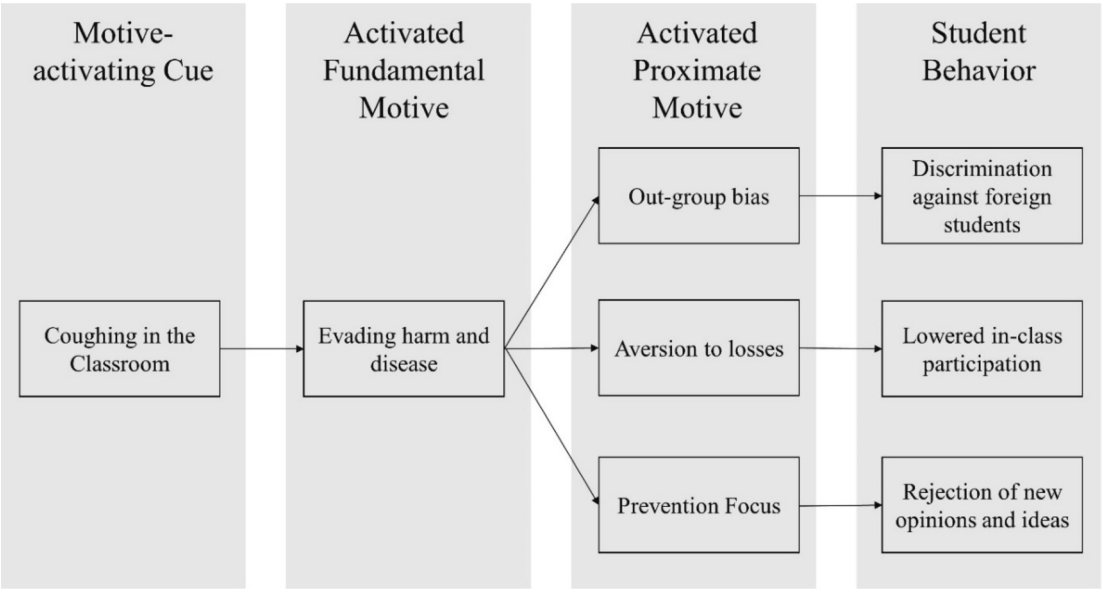

Fig. 1. A process model to test evolutionary psychology empirically (adapted from Kock et al., 2018).

data that many researchers have in their role as teachers.

Third, while the discussion of every evolutionary theory associated with the fundamental motives framework is beyond the scope of this paper, Table 1 provides an initial roadmap and potential applications in tourism and hospitality education. In addition to this framework, we now conclude with two pieces of advice for tourism and hospitality educators who want to incorporate an evolutionary perspective in their research.

Unveil the adaptive function of observed behavior

A widely observed behavior among students, but also researchers, is procrastination. Procrastination is the deliberate but irrational postponement of an intended course of action and has detrimental consequences for study and job success (Steel & König, 2006). Why do human beings engage in such a disadvantageous behavior and what was the adaptive function that it might serve? While there are clearly many proximate explanations for procrastination (e.g., lack of motivation or discipline), evolutionary psychology provides an ultimate survival motive. For our ancestors, the world was unpredictable and satisfying needs immediately was more beneficial than spending resources on creating long-term plans (Griskevicius et al., 2012). Thus, impulsivity was a survival-relevant trait. In contrast, contemporary lives allow for and require long-term plans for future success, thus creating a mismatch between our reptilian brain and modern needs. The procrastination-impulsivity relationship has been theoretically (Steel, 2010) and genetically verified (Gustavson et al., 2014), making it a feasible explanation for the adaptive function of procrastination.

Venture off the beaten path

Taking an evolutionary approach implies reading beyond your discipline. For example, a researcher investigating the effects of classroom sex composition on learning can generate novel insights by applying the theory of operational sex ratio in intra-sexual competition (Charnov, 1982). This theory suggests that biased sex ratios (i.e., greater numbers of one sex) shape intra-sexual mating competition between the more prevalent sex which in turn influences fundamental aspects of behavior such as risk-taking or aggression (Ackerman et al., 2016). These effects may be particularly influential in universities, because (1) fellow students are strong competitors due to their equally high level of qualification (or aspiration thereof), and (2) people in their 20s have a relatively strong motive to find a romantic partner.

The majority of students in tourism and hospitality programs tend to be female (Hsu et al., 2017). Tourism and hospitality scholars could therefore investigate the potential effects of female-biased sex ratios in the classroom. Research shows that female-biased sex ratios are linked to women's decreased financial choice diversification as a form of risk-seeking (Ackerman et al., 2016) as well as women's tendency to value their career over starting a family (Durante et al., 2012). An intriguing research opportunity might therefore be to look at whether female students tend to engage more in risky study behaviors such as cheating to further their career under female-biased sex ratios. Such research could then be used to design practical interventions that speak to students' subconscious motives and help counteract tendencies to cheat. Conversely, women's intrasexual competition has also been linked to increased cooperation (Griskevicius & Kenrick, 2013). Another hypothesis could therefore be that female-biased sex ratios tend to create a positive environment for cooperation among female students. Indeed, a study of elementary, middle, and high school students indicates that a female-skewed sex ratio led to academic improvements for both male and female students (Lavy & Schlosser, 2011). These potential hypotheses demonstrate how evolutionary psychology can foster intriguing and novel tourism and hospitality education research.

CRediT authorship contribution statement

Florian Kock: Writing – review & editing, Writing – original draft, Project administration, Methodology, Conceptualization. **Astrid Nørfelt:** Writing – review & editing, Writing – original draft, Methodology. **Alexander Josiassen:** Writing – review & editing.

Declaration of competing interest

None.

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