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A theoretical analysis and empirical agenda for understanding the socioecology of adult attachment

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ABSTRACT

The present review introduces the Socioecology of Adult Attachment (SEA) Model which argues that socioecological variation in interdependence is linked to variation in adult attachment processes. Ecologies of interdependence (characterised by blends of ecological threats, interdependent subsistence, and/or residential and relational stability) are associated with caregiving and socialisation practices that predict a *relational* focus in adult attachment, in which attachment-related expectations are largely defined by social obligations. In contrast, ecologies of independence (characterised by ecological safety, less interdependent subsistence, and/or residential and relational mobility) are associated with caregiving and socialisation practices that predict an *individual* focus in adult attachment, in which attachment-related expectations are defined by personal needs, concerns, and goals. The model generates three sets of predictions in contemporary research domains including the structure and composition of adult attachment networks, the formation of adult attachment orientations, and the alleviation and buffering of attachment insecurities.

Adult attachment theory has proved to be one of the most generative frameworks for studying close relationships since its conception 35 years ago. The insight that romantic relationships share similar features with infant-caregiver bonds (Hazan & Shaver, 1994) sparked an enormous interest among social psychologists, resulting in an extensive body of literature. Although the field made incredible strides in documenting the predictive role of adult attachment orientations in a broad spectrum of interpersonal phenomena (Mikulincer & Shaver, 2016), the role of socioecological factors in adult attachment has rarely been examined. This is a significant gap given that the idea of ecological adaptation has been key to attachment theory since its onset (Bowlby, 1982). Extant theoretical and empirical work described adult attachment as an adaptation to evolutionary ecology at the macro level

and to early caregiving ecology at the micro level (e.g., Ein-Dor et al., 2010, 2011; Szepsenwol & Simpson, 2019; Szepsenwol et al., 2015). What is missing from this discussion is an investigation of the role of socioecological factors that shaped cultural patterns of relationality. Examining these factors will not only help fill a gap in the adult attachment literature but also contribute more broadly to the study of interpersonal relationships, a major field of social psychology, which is often described as (and criticised for) focusing on a specific demographic group (White, middle class) living in a specific part of the world (North America and Western Europe; McGorray et al., 2023). Elucidating the mechanisms by which different social ecologies are linked to adult attachment processes will be an important step towards broadening the field's scope by increasing one of its major theories' relevance to diverse geographical and cultural spheres.

With these goals in mind, we organised the present review into four sections. We start with a brief overview of attachment theory. We highlight that the basic principles of the theory assume a certain type of social ecology characterised by low levels of social interdependence within loose and inter-twined networks. Next, we introduce our working conceptual framework – the Socioecology of Adult Attachment [SEA] model – that attempts to understand how the composition and structure of attachment networks, the formation of attachment orientations, and the buffering and alleviation of attachment insecurities in adulthood may differ with increasing levels of interdependence within more tight and exclusive networks. We argue that four socioecological factors that are linked to interdependence levels within social networks – history of threats, subsistence style, residential mobility, and relational mobility – ultimately predict adult attachment processes. As social interdependence increases, what we refer to as an *individual focus* in attachment – captured and rigorously tested in the adult attachment litera-ture – is replaced by a *relational focus*, the implications of which remain largely unexamined. Thus, the third section offers an empirical agenda for filling the gaps in our understanding of the role of social ecology in adult attachment. The fourth section discusses how the SEA model intersects with other relevant theoretical frameworks.

Our positionality

Before moving forward, we acknowledge that a different research team could have employed a different socioecological perspective to adult attachment, extracted a different set of themes from the existing literature, constructed a different conceptual model, or derived different predictions. We must therefore situate the current manuscript within the context of our own identities. The authors of this manuscript are two professors and a postdoctoral researcher working in Turkey. All three of us were trained

as social psychologists and relationship scientists during our PhDs in the US. Our work predominantly uses mainstream relationship theories developed and tested in WEIRD (Western, Educated, Industrialised, Rich, and Democratic) contexts. As we worked more with non-WEIRD samples (primarily in Turkey), we realised that even the taken-for-granted principles of the theories guiding our research should be subjected to empirical scrutiny in diverse social ecologies. Our recent research as well as the current paper grew out from this realisation. We acknowledge that we attempt to form a bridge between adult attachment theory and socioecological psychology while standing on the relationship science side of the strait. Researchers trained in socioecological or cultural psychology may bring a different perspective than we did here. Moreover, attachment research has evolved in two relatively distinct traditions: social psychology and developmental/clinical psychology. We acknowledge that we are trained in the social psychological tradition. Attachment researchers following the developmental or clinical psychology traditions may contribute different perspectives than we did. Overall, we hope that we were able to leverage our experiences as social psychologists in both non-Western and Western cultures, and invite others with different identities to build on and expand our working conceptual model.

Main postulates of attachment theory

Attachment theory was originally developed to explain the nature of infant-caregiver bonds in early life. The theory proposed that the precarious conditions of the "environment of evolutionary adaptedness" coupled with human altriciality resulted in the selection of an attachment behavioural system that serves to form emotional bonds to others who can provide care, protection, and safety (Bowlby, 1982). Four behaviours indicate the existence of an attachment bond: *maintaining proximity* to a relationship partner, retreating to them as a *safe haven* in times of difficulty, relying on them as a *secure base* from which to explore the world, and experiencing *separation distress* when the relationship is broken or lost. Adult attachment researchers argued that the attachment system is not limited to early life but is co-opted for later relationships (Hazan & Shaver, 1994). As individuals mature, they gradually transfer attachment behaviours to friends, and ultimately to romantic partners or spouses (Hazan & Zeifman, 1994). Although any close relationship figure may take on attachment functions, the theory suggests a hierarchy among these figures, reflecting the extent to which attachment behaviours are concentrated within each relationship. For adults involved in a relationship, the romantic partner is thought to serve as the primary attachment figure (Hazan & Shaver, 1994).

A major function of attachment – irrespective of the life stage or the type of relationship – is threat regulation, also referred to as stress buffering or the distress-relief dynamic (Beckes & Coan, 2015; Mikulincer & Shaver, 2003; Selcuk, Zayas, et al., 2010). Threatening or stressful situations increase the motivation to seek proximity to others (e.g, Collins & Feeney, 2000; Mikulincer et al., 2000). Establishing actual or symbolic contact with a responsive figure down-regulates threat and stress reactions (e.g., Coan et al., 2006; Selcuk et al., 2012). The calm and regulated state achieved through contact with a responsive figure, in turn, facilitates exploration and goal pursuit (Cutrona & Russell, 2017; Granqvist, 2021; Selcuk et al., 2016; Woodhouse et al., 2020).

Although the threat regulation dynamic itself is normative (Hazan & Selcuk, 2015), the quality of others' responsiveness when called upon shapes individual differences in attachment orientations. The formation of attachment orientations is thought to occur through a learning process in which others' responsiveness serves as negative reinforcement. Experimental work shows that this process operates largely in an automatic fashion (Beckes et al., 2010, 2017) as long as there are opportunities for repeated interactions with a relationship partner. In the presence of negative stimuli (threatening or distressing events), relationship partners' responsiveness allows avoiding negative outcomes such as stress reactions or negative affect (Beckes & Coan, 2015). Therefore, experiencing consistent responsiveness tends to result in secure attachment patterns. In contrast, responsiveness on a variable schedule results in adapting "hyperactivating" strategies (Mikulincer & Shaver, 2003) that involve heightened stress appraisals and bids for support. These strategies are associated with attachment anxiety, which is characterised by worries about being a worthy relationship partner, preoccupation with relationships, and relational ambivalence. Finally, experiencing little to no responsiveness results in adapting "deactivating" strategies (Mikulincer & Shaver, 2003) that involve suppression of threats and heightened reliance on the self (as opposed to others' support) to cope with stressors. These strategies are associated with attachment avoidance, which is characterised by excessive autonomy needs, difficulties in opening up to relationship partners, and discomfort with depending on others.

Attachment orientations are thought to reflect variation in latent attachment working models—i.e., an associative network of mental representations governing (a) one's sense of self-worth (model of self) and (b) others' perceived availability and responsiveness when called upon in times of need (models of others) (Bartz et al., 2015). Attachment anxiety is thought to reflect a negative model of self while attachment avoidance is thought to reflect negative models of others. Social interactions that induce feeling valued and capable in personal domains (e.g., one's personal opinions, aspirations, goals, successes) are particularly influential in fostering

a secure model of self (Arriaga et al., 2018) and alleviating attachment anxiety (Arriaga et al., 2014). Interactions that involve others' reactions that are contingent on one's expression of needs and concerns are particularly influential in fostering secure models of others (Collins et al., 2006) and alleviating attachment avoidance (Rholes et al., 2021). Once formed, attachment working models shape expectations about who would be available for support in threatening or distressing situations, as well as the nature and effectiveness of their support (Zayas et al., 2015). Social cognitive work has shown that these expectations can be altered by contextual cues and environmental affordances (Bartz et al., 2015; Gillath et al., 2008).

Although the influence of social contexts on attachment processes has long been recognised, the basic premises of adult attachment theory assume a certain ecological construction of relationality. For instance, the notion of an attachment hierarchy with the romantic partner at the top assumes separate and relatively disconnected residence of the nuclear family from extended family and long-term friends (Tasfiliz et al., 2018; Wasti & Onder, 2023) and consequently, lower time spent with non-romantic ties (Finkel et al., 2014). A hierarchically organised network may be less viable than a distributed network with multiple, more or less equally central attachment figures in a setting where members of extended family or close friends live in close proximity to one another and spend more time together. Similarly, the theory's key concept of attachment working models assumes a social ecology that prioritises the self over relational connections. Dyadic interactions thought to foster a secure model of self assume the centrality of the personal self, whereas interactions thought to foster secure models of others assume self-expression as a primary trigger of responsiveness. Social processes that shape working models are likely different in ecologies where aspects of the collective (rather than personal) self are more salient and other-monitoring and need anticipation (rather than self-expression) are critical for responsiveness (Selcuk & Gunaydin, 2023). Explaining how different social ecologies may predict adult attachment processes was our primary aim in developing the Socioecology of Adult Attachment (SEA) Model.

Overview of the SEA model

The SEA model draws from work on cultural construction of self and relationality (e.g., Adams et al., 2004), socioecology of developmental pathways to independence versus interdependence (e.g., Greenfield, 2009), socioecology of interpersonal relationships (e.g., Oishi, 2010; Schug et al., 2010; Uskul & Over, 2014), and cultural differences in early life attachment (e.g., Keller, 2016) to explain potential socioecological differences in adult attachment. The first part of the model identifies socioecological factors that predict the extent to which social life is organised around loose, intersecting networks of relatively independent

individuals connected through personal choice versus tight, exclusive networks of interdependent people connected through mutual obligations and responsibilities. The second part explains how caregiving and socialisation practices that follow from these different social realities are associated with adult attachment processes.

Socioecological factors predicting interdependence within social networks

The first premise of the SEA model is that features of social ecology that predict the degree of interdependence within social networks are ultimately associated with adult attachment processes. In the cultural psychology literature, interdependence has been conceptualised as a multifaceted construct (e.g., Vignoles et al., 2016). Here, we use the term to describe how the self is situated within social life. On the low end of the interdependence continuum is a social life organised in loose, fleeting, and intertwined networks of independent selves (Greenfield, 2009; Li et al., 2022) connected primarily through personal choices, needs, and preferences. The networks are relatively wide, consisting of not only close ties but also weak ties and strangers (Ascigil et al., 2023). The personal self is prioritised over relational connections and is regarded as the primary source of psychological experience. Self-disclosure and emotion expression are encouraged as primary means to build interpersonal closeness (Adams et al., 2004). On the high end of the interdependence continuum is a social life organised in exclusive, enduring, and tight networks of interdependent selves (Greenfield, 2009) connected through mutual duties and responsibilities that involve monitoring others, and anticipating and meeting their instrumental and material needs (English et al., 2023; Esiaka et al., 2020). These long-lasting obligations predict relational expectations and behaviours more strongly than personal needs and desires (Osei-Tutu et al., 2022). Social networks are relatively limited in size and consist mostly of close others, particularly the kin. Because such networks are afforded and not easily changed in response to interpersonal tension or harm, people tend to remain careful and vigilant in their relationships (Adams, 2005; Liu et al., 2019). Where a particular social environment falls between the two ends of the interdependence continuum, ranging from highly independent to highly interdependent, is determined by a combination of distal and proximal socioecological factors (see Figure 1).

Distal factors
Ecological threats and modes of subsistence have been two potent predictors of interdependence patterns across history. Threatening environments (characterised by factors such as high population density, harsh climate, scarce resources, natural disasters, wars, pathogen prevalence; Gelfand et al., 2011; Thomson et al., 2018) require coordination and cooperation
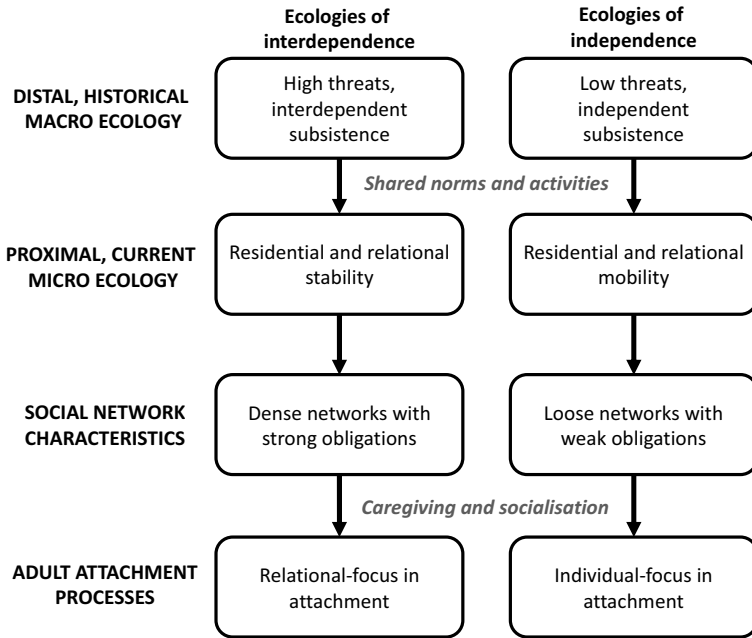
	Ecologies of interdependence	Ecologies of independence
DISTAL, HISTORICAL MACRO ECOLOGY	High threats, interdependent subsistence	Low threats, independent subsistence
	Shared norms and activities	
PROXIMAL, CURRENT MICRO ECOLOGY	Residential and relational stability	Residential and relational mobility
SOCIAL NETWORK CHARACTERISTICS	Dense networks with strong obligations	Loose networks with weak obligations
	Caregiving and socialisation	
ADULT ATTACHMENT PROCESSES	Relational-focus in attachment	Individual-focus in attachment

Figure 1. Overview of the Socioecology of Adult Attachment (SEA) Model.

among residents to promote safety and protection. These ecologies prioritise the group's survival over personal expression (Van De Vliert, 2013), necessitate tight norms to regulate group cohesiveness and ensure that members fulfil their social obligations (Gelfand et al., 2011), constrain social networks to a small set of close relationships (Oishi & Kesebir, 2012), and encourage careful management of existing relationships while adopting a cautious stance against strangers (Fincher et al., 2008).

Subsistence style has been another socioecological factor predicting interdependence in everyday social interactions. Some forms of subsistence are more demanding than others (e.g., farming vs. herding, rice-farming vs. wheat farming; Talhelm & English, 2020; Uskul et al., 2008), requiring close cooperation among community members. Rice versus wheat farming provides a classical contrast (Talhelm & Dong, 2024). Growing rice and wheat are both involved activities but rice is more demanding than wheat at almost every step from seeding to irrigation to harvest. This resulted in rice-farming communities to build more interdependence in their subsistence activities as demonstrated by routine reciprocal obligations such as labour exchange, coordinated allocation of water, and distributed workload for the maintenance of irrigation systems (Talhelm & Oishi, 2018). These social practices were closely monitored via strong norms and the task-oriented exchanges ultimately had a broader role in the social life of the

communities. For instance, rice-farming communities in China show a more interdependent form of relationality compared to wheat-farming communities, as indicated by greater relationship stability, conceptualising the self as more embedded in a social network, and showing loyalty to existing ties (Dong et al., 2019; Talhelm & Dong, 2024). The relational correlates of subsistence are not specific to rice versus wheat farming. Studies comparing farming with herding communities in northern Turkey showed that while both groups were affected by signs of rejection from close others, herders, whose economic activities require less interdependence and more frequent interactions with strangers, were more strongly affected by rejection from strangers as compared to farmers (Uskul & Over, 2014).

Overall, a history of collective threats and relatively more demanding modes of subsistence are linked to cultural adaptations that encourage interdependence within dense and enduring networks knitted with mutual obligations. In contrast, historically safer environments and less demanding modes of subsistence allow the self to be positioned as an independent social agent within loose networks. These adaptations can be observed not only among individuals who directly experienced the ecological conditions but are shared by other members of the society and passed on to new generations (Dong et al., 2019; Over & Uskul, 2016) through shared social norms and collective activities (Uchida et al., 2020), ultimately predicting proximal factors.

Proximal factors

A feature of proximal ecology that systematically predicts interdependence within social networks is residential mobility. Small, dense social networks are more adaptive under conditions of residential stability while wide, weak-tie networks are more adaptive under conditions of residential mobility (Oishi & Kesebir, 2012). Because family or close friends may not always be there for companionship or support in a mobile ecology, a wider network may serve to compensate for their unavailability. As the network size increases, however, keeping strong connections becomes less feasible, resulting in the network getting less dense with fewer instrumental responsibilities among members. Consequently, frequent movers prefer networks where each member fulfils a particular social function (e.g., socialising, providing support) over networks where each member fulfils multiple roles (Lun et al., 2013). This affords greater agency and independence in structuring and managing social life. In contrast, each network member fulfils multiple social functions in residentially stable ecologies, resulting in a number of equally important, indispensable relationships. High frequency of contact with network members in a residentially stable environment also ensures a sustained sense of mutual obligation (Wasti & Onder, 2023).

The second proximal socioecological factor relevant for social interdependence is relational mobility, which refers to freedom and opportunities an environment affords to meet new people, form new relationships, or dissolve existing ones. Several lines of work show that relationally mobile ecologies are linked to an independent sense of relationality. People living in relationally mobile regions are more likely to engage in self-disclosure and emotion expression (Schug et al., 2010; Thomson et al., 2018), act upon personal preferences when forming new relationships (Schug et al., 2009), and take more risks to achieve desired relational outcomes (Li et al., 2016). In contrast, people residing in relationally stable communities possess a more cautious stance against relationships as indicated by lower self-expression, higher avoidance of taking social risks, and heightened vigilance in social interactions (Li et al., 2015, 2018).

While distal factors are typically measured at the regional level (e.g., historical threats at the country level, history of predominant subsistence at the provincial level), proximal factors can be measured either at the regional (e.g., total number of moves and divorces in a city to index residential and relational mobility, respectively) or individual level (e.g., personal history of residential moves, perceptions of relational mobility in the society). There have not been many studies measuring all four factors together but the few that do support the associations between distal and proximal factors as visualised in Figure 1 such that fewer historical threats and less interdependent subsistence predict greater relational and residential mobility (e.g., Thomson et al., 2018).

In the remainder of this paper, we contrast two prototypical ecologies: an ecology of interdependence characterised by blends of ecological threats, interdependent subsistence, and/or residential and relational stability versus an ecology of independence characterised by ecological safety, less interdependent subsistence, and/or residential and relational mobility. Note that we use these prototypes only for illustrative purposes; actual ecological variation, which can be observed between as well as within cultures, follows a continuum rather than distinct typologies, as extensively documented in prior research (e.g., Gelfand et al., 2011; Talhelm & English, 2020; Thomson et al., 2018; Yilmaz et al., 2022).

Caregiving practices linking socioecology to adult attachment

The second premise of the SEA model is that variation in interdependence levels across social ecologies predicts differences in attachment working models via caregiving and socialisation practices. Developmental research predominantly conducted in Western countries shows that the degree to which a caregiver is able to meet a child's needs on the attachment-exploration continuum is a particularly critical predictor of attachment

working models and potentially social competence (Woodhouse et al., 2020). On the attachment end of the continuum, the aim of these caregiving behaviours is to soothe the child when the child is distressed. On the exploration end, the aim is to allow the child to engage with the physical and social world in a calm and regulated manner. While an early review of initial cross-cultural evidence concluded that these processes are likely universal (van IJzendoorn & Sagi, 1999), subsequent work mostly emanating from East Asia (e.g., Rothbaum et al., 2000) and Africa (e.g., Tomlinson et al., 2010) increasingly pointed to cultural or ecological differences in the nature of caregiving behaviours, particularly on the exploration end of the continuum. Indeed, recent interpretations of attachment theory also view exploration contexts as key opportunities for attachment figures to pass on beliefs and expectations that would facilitate children's adaptation to their social ecologies (Granqvist, 2021).

Ecologies of independence are associated with autonomy-building caregiving practices that cultivate feelings of independence and agency (Greenfield, 2009; Keller, 2017). Responsive caregiving is thought to be contingent on the child's explicit signals. The caregiver's behaviours follow the child's lead when the child initiates an interaction (Pederson & Moran, 1995; Selcuk, Gunaydin, et al., 2010). The conversations revolve around the child's emotions, desires, and wishes (Keller, 2016). Emotions are seen as self-defining and the child is encouraged to express them to elicit responses from others (Morelli, 2015). While negative emotion expressions (e.g., cries) elicit attachment figure behaviours aimed at dampening distress, positive emotion expressions (e.g., smiles) elicit responses that augment or extend positive affect (Kärtner et al., 2013). As the caregiver gradually transfers the control of attachment-exploration dynamics to the child, the child learns to autonomously engage with and feel mastery over the environment while turning to others under stress or difficulty. Overall, these caregiving practices aim to foster in children a sense of personal self that is separate and unique from others (Keller, 2016), which is reflected in their self-views when they grow up. The prioritisation of the self over relational connections is associated with what we refer to as an *individual-focus* in attachment. When attachment needs are activated under threat, others are expected to affirm the *self* (e.g., attend to and validate personal concerns and needs). Expectation-confirming interpersonal situations reinforce an attachment working model of self defined by feelings of self-worth in personal domains (e.g., felt efficacy in goal attainments) and working models of others defined by others' perceived availability for supporting personal needs and goals.

Ecologies of interdependence, on the other hand, are associated with harmony-building caregiving and socialisation practices (Morelli, 2015). Because high negative and positive arousal can both disrupt social harmony and inconvenience others, attachment figures tend to

down-regulate both forms of emotion expression. In contrast to ecologies of independence, where attachment figures respond to positive emotion expressions by prolonging or amplifying them, attachment figures in ecologies of interdependence tend to avoid behaviours that might exacerbate or prolong high-arousal positive affect and instead encourage low-arousal states (Kärtner et al., 2013; Tsai, 2007). Down-regulation of emotion expression is complemented by anticipating children's needs in the absence of explicit self-expression (Rothbaum et al., 2000, 2006). Finally, children are continuously monitored to make sure that they behave appropriately (Morelli, 2015). These practices prepare children to become part of a stable social network defined by social duties and obligations as they grow up (Keller, 2016) and predict what we call a *relational-focus* in attachment. When attachment needs are salient under threat, others are expected to affirm the protective function of relationships (e.g., providing material support to remove the source of stress; Osei-Tutu et al., 2022). Interpersonal situations that confirm these expectations predict over time an attachment working model of self defined by feeling valued in relational domains (e.g., felt efficacy in being a good relationship partner) and working models of others defined by others' perceived availability and willingness to fulfil relational duties towards oneself.

Predictions of the SEA model

The preceding theoretical synthesis results in three sets of predictions in contemporary areas of adult attachment research, including the structure and composition of adult attachment networks, formation of adult attachment orientations, and alleviation and buffering of attachment insecurities (Fraley, 2019). Table 1 provides a summary of the predictions. In the following subsections, we explain the rationale for these predictions in detail by situating each within relevant work in the adult attachment literature. Before proceeding, we should note that our aim in this section is not to organise existing evidence under a set of premises but rather set an agenda for future research that would fill the gaps in our understanding of the role of social ecology in adult attachment. Whenever possible, we draw on evidence from studies directly measuring the socioecological factors of interest but because such studies are yet rare, we also bring in indirect evidence from cross-cultural research where culture is operationalised as country of residence or race, with the caveat that the observed differences could have been due to factors other than ecologically-induced patterns of interdependence.

Table 1. Summary of the Socioecology of Adult Attachment (SEA) model predictions.

Adult Attachment Process	Ecologies of Interdependence	Ecologies of Independence
Composition and Structure of Attachment Networks		
Centrality of romantic partners	Lower	Higher
Network structure	Distributed	Centralised
Formation of Attachment Orientations		
Caregiving and socialisation practices predict ...	Higher attachment anxiety	Lower attachment anxiety
Facets of partner responsiveness predicting attachment orientations	Responsiveness to collective self relational obligations, implicit cues	Responsiveness to personal self and self-expressions
Alleviating and Buffering Attachment Insecurities		
Long-term declines in anxiety are predicted by ...	Relational self-efficacy, positive relationship events	Personal self-efficacy
Long-term declines in avoidance are predicted by ...	Instrumental support during stress, positive relationship events	Emotional support during stress, positive relationship events
Social ecology buffers the negative association of ...	Attachment anxiety with caregiving	Attachment avoidance with relationship quality

Composition and structure of adult attachment networks

Centrality of romantic attachment figures

Though any close relationship figure may take on attachment functions, adult attachment theory views romantic partners as the prototypically central attachment figure in adulthood (Hazan & Shaver, 1994; Selcuk, Zayas, et al., 2010). This view received converging empirical support in numerous Western samples (e.g., in Canada, UK, and Australia; Doherty & Feeney, 2004; Julal et al., 2017; Trinke & Bartholomew, 1997). For instance, a study with Australian adults showed that while single respondents were equally likely to see either a close friend or a parent as their primary attachment figure, coupled respondents overwhelmingly identified their spouse or romantic partner as their primary figure (Doherty & Feeney, 2004).

An intriguing question is whether attachment bonds between spouses are also observed in ecologies of interdependence where marriages are not always formed on personal choice (but can be arranged by families or other community members) and the marriage institution is already tightly regulated by norms defining partners' obligations towards one another. From an attachment theoretical viewpoint, the answer is yes. A key implication of the distress-relief dynamic that underlies attachment formation is that the formation of the bond depends more so on *whether* relationship partners serve as viable figures for one another during stressful situations than on *why* they started the relationship in the first place–e.g., because of personal choice versus social obligations. Indeed, attachment behaviours are observed not only in couple-initiated relationships, as is typically the case in WEIRD societies, but also in arranged marriages (Flicker et al., 2020). The more couples spend time together and repeatedly encounter life events that

urge them to respond to one another's distress, the more likely they form an attachment bond.

Although the tendency to form attachments to romantic or marital partners seem universal, the SEA model predicts that the centrality of these figures is more pronounced in ecologies of independence as compared to those of interdependence. Transferring attachment functions to a new relationship partner requires repeated interactions with the person in attachment-relevant contexts (Zayas et al., 2015). Take stressful contexts, which are integral to attachment theory, as an example. Stressful life events may help romantic relationship development partly because they provide opportunities for partners to provide responsive care to one another (Selcuk et al., 2024). There will be fewer such opportunities in ecologies of interdependence where people already have active familial ties with frequent support exchanges. In ecologies of independence where familial support exchanges are less frequent, the romantic partner is more likely to be the first person to turn to during times of stress. A recent study tested this idea by measuring within-country variation in residential mobility in a nationally representative sample from Turkey (Yilmaz et al., 2022, Study 1). Respondents were asked to list the first confidant they would disclose to when they had a problem related to work, money, or health. Respondents who still lived in their hometown were less likely to choose their spouse as a primary confidant than those who moved away. A subsequent study that directly measured attachment functions (proximity maintenance, safe haven, secure base, and separation distress) in a community sample from Turkey also revealed that although 96% of respondents reported that their romantic partners fulfilled at least one attachment function, partners became less central in attachment networks as residential mobility decreased (Yilmaz et al., 2022, Study 2). Similar findings were obtained in studies using samples from interdependent Asian societies (e.g., Joo et al., 2023), with parents retaining their primary attachment figure status even for their adult children in long-term marriages (Flicker et al., 2020). Corroborating the naturalistic evidence, recent experimental work showed that individuals who imagined a residentially and relationally stable ecology prioritised parental over spousal relationships as compared to those imagining a mobile ecology (Zhao et al., 2023).

Centralised versus distributed attachment networks

Studies on adult attachment networks largely followed Bowlby's attachment hierarchy analogy, assuming that attachment behaviours are selectively oriented towards a single, exclusive figure at the top of the hierarchy. In one of the still largest studies on the topic, a survey of a life-span sample of adults residing in Australia revealed that the overwhelming majority of a total of 812 respondents did indeed identify a single primary attachment figure in whom all attachment functions were concentrated (Doherty &

Feeney, 2004). Only 31 (4%) respondents had two or more equally central primary figures in their network. The SEA model suggests that this picture is more likely to characterise attachment networks in ecologies of independence. The model predicts that people are more likely to have multiple, equally central attachment figures in ecologies of interdependence.

This prediction is motivated by cultural work on infant-caregiver relationships arguing that the adaptive role of forming a primary attachment bond with a single caregiver is limited to particular socioecological conditions defined by financial predictability and small household size (Keller, 2016). In environments where resources are relatively scarce and life is organised within dense family networks, protection and well-being of children becomes a collective concern (Tomlinson et al., 2010). In such ecologies, multiple caregiving arrangements with no clear hierarchy or central attachment figure seem more adaptive as they counteract the negative effects of socioeconomic difficulties on maternal well-being and child social development (Otto, 2018). Children may simultaneously develop multiple attachment relationships that are equally significant (Becke & Bongard, 2018; Morelli, 2015) with in some cases more than 20% of the people they are in contact with (Meehan & Hawks, 2013). Whether a similar distributed structure also characterises adult attachment networks in ecologies of interdependence is an open empirical question but the possibility seems likely given the enduring contact with family members (Wasti & Onder, 2023) and the availability of non-romantic others as confidants (Yilmaz et al., 2022).

Formation of adult attachment orientations

Developmental pathways to adult attachment
The SEA model predicts that mean levels of attachment anxiety would be higher in ecologies of interdependence as compared to those of independence. This prediction builds on the idea that everyday caregiving and socialisation practices in ecologies of interdependence prepare one to flourish in a relational environment where people are connected to one another via enduring bonds of mutual obligations and responsibilities (Esiaka et al., 2020) and social competence is predominantly defined by preserving harmony and maintaining one's position in the social network by fulfilling relational obligations (Keller, 2016; Morelli, 2015). Caregiving practices in such ecologies foster psychological characteristics viewed as facets of attachment anxiety. Consider preoccupation with relationships. Keeping track of duties and obligations within a tight social organisation and making oneself available in the relative absence of partners' explicit requests and support seeking require a certain level of monitoring and worry about close relationships. To the extent that these feelings motivate individuals to effectively fulfil their relational obligations, they would improve relationship quality

and minimise the prospect of anger and criticism from the social network. Indeed, relationship quality more positively tracks with such worries among Asian Americans compared with European Americans (Chen et al., 2015).

Relational ambivalence, which is another defining facet of attachment anxiety (Mikulincer et al., 2010), is also functional in ecologies of interdependence. In contrast to the typical choice-based form of personal relationship defined by closeness and intimacy, environmentally afforded relationships seen in ecologies of interdependence can be a source of both positivity and threat (Adams, 2005; Adams et al., 2004), calling for a balanced mix of social approach and avoidance goals. Socioecological research showed that such a cautious and vigilant approach to relationships is positively predicted by low relational mobility (Li et al., 2015) and more interdependent forms of subsistence (rice compared to wheat; Liu et al., 2019). Corroborating these lines of work, large-scale studies documented that attachment anxiety was higher in world regions known to be interdependent (Chopik & Edelstein, 2014; Schmitt et al., 2004) but direct evidence linking socioecological factors to adult attachment anxiety are yet to be obtained.

Do caregiving and socialisation differences across social ecologies predict mean differences in attachment avoidance? On the one hand, caregiving practices in ecologies of interdependence encourage dampening self-disclosure (Morelli, 2015). Discomfort with opening up to relationship partners is a defining characteristic of attachment avoidance (Mikulincer & Shaver, 2016). On the other hand, the emphasis on autonomy in ecologies of independence (Morelli, 2015) is associated with social strategies such as strategically limiting functions of each social tie and letting some ties fade over time. An analysis of friendship networks revealed that both of these tendencies are positively linked to attachment avoidance among young adults in the U.S (Gillath et al., 2017). Overall, these studies show that distinct characteristics of ecologies of interdependence versus independence positively predict distinct facets of attachment avoidance (see Zhao et al., 2024, for suggestive evidence in favour of such a nuanced view), likely resulting in no appreciable difference in overall mean levels. Indeed, past large-scale cross-country studies found no mean difference in avoidance across regions of independence versus interdependence (Chopik & Edelstein, 2014; Schmitt et al., 2004). Future research may benefit from measuring facets of attachment avoidance separately (rather than analysing only overall mean differences) to better capture the role of socioecology in attachment avoidance.

Facets of partner responsiveness predicting adult attachment orientations

Perceived partner responsiveness – the extent to which one feels understood, validated, and cared for by relationship partners – is a core aspect

of close relationships predicting personal and relational well-being (Reis & Gable, 2015; Selcuk & Ong, 2013; Slatcher et al., 2015; Stanton et al., 2019). The construct has an important place in attachment theory as well. Adult attachment theorists have long assumed that attachment avoidance develops in response to perceiving relationship partners as consistently unresponsive, whereas attachment anxiety develops in response to perceiving relationship partners as inconsistently responsive (i.e., sometimes responsive, sometimes unresponsive; Mikulincer & Shaver, 2003). A recent study following fledgling couples in Turkey for over a year empirically supported this assumption by demonstrating that variability in day-to-day perceptions of partner responsiveness uniquely predicted romantic attachment anxiety (but not avoidance), whereas average daily perceived responsiveness uniquely predicted romantic attachment avoidance (but not anxiety) (Gunaydin et al., 2021).

Emerging theoretical and empirical work have started to delineate the relevance of perceived responsiveness across cultures (e.g., Selcuk & Gunaydin, 2023; Tasfiliz et al., 2018; Wu et al., 2021). Building on this work, the SEA model contributes to the literature on adult attachment formation by describing aspects of partner responsiveness that predict attachment orientations in diverse social ecologies. In ecologies of independence, what determines perceived responsiveness is partners' attentiveness and support to the personal aspects of the self (e.g., unique aspirations, needs, abilities). Reviewing accumulating evidence from cross-cultural studies on responsiveness, self-disclosure, social support, and capitalisation (i.e., sharing good news), Selcuk and Gunaydin (2023) suggested that the components of responsiveness likely differ in ecologies of interdependence. The first of the three interrelated components they identified is validating the collective self. The primacy of deep-rooted, afforded relationships, which retain their attachment function in adulthood as reviewed above, makes aspects of the collective self more salient than those of the personal self. Therefore, an important aspect of responsiveness in ecologies of interdependence is accurately perceiving a relationship partner's social affiliations (e.g., group memberships, extended family relationships), appreciating their importance for the partner, and showing willingness to support the partner in maintaining them.

The second component of responsiveness in ecologies of interdependence is responding to relational obligations. A major portion of these obligations involves material and instrumental support, such as providing monetary resources, sharing accommodation, and assisting with daily chores (e.g., cooking, cleaning; Osei-Tutu et al., 2022). A second important aspect is kin keeping, which includes maintaining ties with extended family (Imamoglu & Selcuk, 2018). Tight social norms that evolved in cultures with a history of collective threats and interdependent subsistence (Gelfand et al., 2011;

Talhelm & English, 2020) can be considered a way to ensure that people would fulfil their relational obligations.

The final component of responsiveness in ecologies of interdependence is attentiveness to implicit cues. Cross-cultural research shows that explicitly seeking support when things go bad or sharing good news when things go well are less frequent in interdependent cultures (Choi et al., 2019; Wu et al., 2021). This means that responsive behaviours should spontaneously appear in ecologies of interdependence, requiring partners to anticipate one another's needs and remain attentive to one another's subtle signs.

Tying these ideas back to adult attachment, the SEA model predicts that aspects of partner behaviours that predict the development of attachment orientations would differ in ecologies of independence versus interdependence. Inconsistent responsiveness to partners' personal self and self-disclosures would predict attachment anxiety and consistent unresponsiveness to these aspects would predict attachment avoidance in ecologies of independence. In contrast, inconsistent responsiveness to partners' collective self, relational obligations, and implicit cues would predict attachment anxiety whereas consistent unresponsiveness to these aspects would predict attachment avoidance in ecologies of interdependence.

Alleviating and buffering attachment insecurities

A burgeoning area of research in adult attachment aims to identify everyday relationship interactions that dampen the negative role of attachment insecurities in relationship functioning or induce lasting declines in attachment insecurities (Arriaga et al., 2018; Overall & Simpson, 2015). The final set of predictions by the SEA model describes potential socioecological differences in these processes.

Alleviating attachment insecurities

A recent theoretical framework, the Attachment Security Enhancement Model (Arriaga et al., 2018), offered an insightful organisation of past findings as well as intriguing research directions on how typical, daily life dyadic interactions may predict long-term changes in attachment orientations. According to this model, long-term alleviations in attachment anxiety and avoidance occur via distinct interpersonal pathways. On the one hand, interactions that build self-efficacy such as receiving praise and encouragement from partners in personal goal pursuits or in managing personally challenging situations alleviate attachment anxiety (e.g., Arriaga et al., 2014). These interactions promote a sense of self-worth, thereby revising negative attachment working models of self. On the other hand, interactions that foster positive connections with partners such as sharing positive experiences (e.g., Bayraktaroglu et al., 2023) or receiving support during highly

distressing situations (e.g., transition to parenthood; Rholes et al., 2021) alleviate attachment avoidance. These interactions promote comfort with dependence and contribute to revising negative working models of others.

The SEA model extends this emerging literature by further delineating the roles of efficacy feelings, social support, and positive relationship events in attachment change across social ecologies.

Self-Efficacy. In ecologies of independence, anxious tendencies are more likely to be alleviated through interpersonal situations that help build *personal efficacy*. Partners may support one another's self-efficacy by encouraging one another's personal goals and aspirations, validating one another's feelings when facing personal challenges, and capitalising on one another's positive news. In contrast, in ecologies of interdependence, building *relational-efficacy* is likely a more viable pathway to lasting declines in attachment anxiety. Relational efficacy can be fostered through acknowledging the importance of the partner's relational roles and praising the effort they put into fulfilling their relational responsibilities.

There have been no studies that directly investigated the comparative roles of personal versus relational efficacy in alleviating attachment anxiety across different social ecologies. However, suggestive evidence comes from studies examining the interplay between residential mobility and felt understanding of the self. These studies showed that residentially mobile individuals felt happier when an interaction partner more accurately understood aspects of their personal self, whereas residentially stable individuals showed the opposite pattern and felt happier when their interaction partner accurately understood aspects of their collective self (Oishi et al., 2007). These findings suggest that aspects of the self that need to be targeted to create psychological benefits may vary across social ecologies. Future studies should test whether targeting relational (vs. personal) efficacy is a stronger pathway for alleviating attachment anxiety in ecologies of interdependence.

Social Support. The SEA model predicts that forms of support aligned with cultural expectations would be more effective in updating working models of others, ultimately alleviating attachment avoidance. In ecologies of interdependence, relationship partners are perceived as available and responsive to the extent that they fulfil material and instrumental support obligations. Indeed, these forms of support are both frequent and expected in interdependent West African (e.g., Ghanaian) or East Asian (e.g., Japanese) cultural settings (Chen et al., 2012; Esiaka et al., 2020; Osei-Tutu et al., 2022), and consequently, they are perceived equally or more responsive than emotional support (Adams et al., 2004; Wu et al., 2021).

In ecologies of independence, however, emotional support is the primary form of support expected during hardships (Wu et al., 2021). Although

avoidant individuals may distance themselves from emotional support in the short term, consistent emotional support in times of stress provide the strongest challenge to their negative working models of others (Arriaga et al., 2018).

Positive Relationship Events. A recent series of studies combining daily diaries, laboratory observations, and long-term follow-ups of a total of more than 450 romantic couples residing in Turkey tested the Attachment Security Enhancement Model premises regarding positive relationship events. Consistent with the predictions of the model, these studies documented that positive relationship events (but not positive external events) predicted declines in attachment avoidance (Bayraktaroglu et al., 2023). Similar benefits of positive relationship events for avoidantly attached individuals were also documented in samples of adults residing in Canada (Stanton et al., 2017).

The SEA model predicts that while positive relationship events would serve to reduce avoidance across both types of social ecologies, it would additionally serve to reduce anxiety in ecologies of interdependence. Recall the centrality of collective self in ecologies of interdependence and the predicted role of relational efficacy in downward changes in anxiety. Joint positive experiences provide ideal opportunities to validate one's worth as a relationship partner. However, we should note that Bayraktaroglu et al. (2023) studies conducted in Turkey found no significant association of positive relationship events with attachment anxiety. This null finding might be due to Turkey displaying markers of both independent and interdependent orientations (Kagitcibasi & Ataca, 2005) and showing marked within-country socioecological variation (Wasti & Onder, 2023). Thus, future studies directly measuring socioecological factors (as Yilmaz et al., 2022 did in studying the centrality of romantic attachment figures) may be better-suited to test the SEA model prediction on the ecological moderation of the link between positive relationship events and attachment anxiety.

Buffering negative effects of attachment insecurities
An exciting line of research in the past decade examined the pathways through which one partner's behaviours may buffer the negative effects of the other's attachment insecurities (Overall & Simpson, 2015 for a review). The SEA model generates two predictions-one pertaining to each attachment dimension – on the potential buffering effects of social ecologies.

Buffering Avoidance. The first prediction concerns the negative associations of attachment avoidance with relationship satisfaction and commitment. One pathway explaining these associations is avoidant individuals' destructive behaviours (e.g., anger and withdrawal) in autonomy-threatening

situations such as requests for change or sacrifice, or having to receive support in times of difficulty (e.g, Farrell et al., 2016; Overall et al., 2013). When partners "soften" autonomy-threatening interactions by expressing affection nonverbally (Schrage et al., 2020), showing gratitude for the avoidant individual's efforts in the relationship (Farrell et al., 2016), or validating the avoidant individual's point of view (Overall et al., 2013), the destructive effects of avoidant attachment on the relationship are buffered. These findings suggest that features of the social environment that acknowledge avoidant individuals' need for autonomy may buffer the negative effects of avoidant tendencies on relationship functioning and quality. Extending this idea to broader social ecologies, one would expect that the negative association between attachment avoidance and relationship quality would be weaker in ecologies of independence due to greater opportunities these ecologies afford for maintaining a sense of autonomy in relationships. In line with this prediction, a cross-country study comparing Hong Kong, Mexico, and the US found that although attachment avoidance negatively predicted relationship satisfaction and commitment in all three countries, the associations were weaker in the US than in Hong Kong or Mexico (Friedman et al., 2010).

Buffering Anxiety.   The second prediction concerns the association between attachment anxiety and care provision. Attachment anxiety is associated with providing unsolicited care (i.e., providing support without being asked), which, in ecologies of independence, may be perceived as overly involved and failing to respect the recipient's preference to deal with problems on their own (Shaver et al., 2019). Anxious tendencies also positively predict critical or controlling caregiving (e.g., insisting the support recipient follows the provider's advice), which, again, is linked to poor relationship functioning in Western samples (e.g., Australian couples, Jayamaha et al., 2017). Cross-cultural research in social support suggests that these behaviours may not be interpreted negatively in ecologies of interdependence. In fact, an experiment found that Asian Americans benefitted more from unsolicited compared to solicited support in a stressful laboratory challenge (Mojaverian & Kim, 2013). Criticism and caution are also expected forms of interpersonal responses in Asian cultures, including in positive contexts. When asked to imagine sharing good news with their romantic partner, adults residing in China, Hong Kong, and Taiwan expected more toned-down and cautious responses (e.g., identifying the event's possible downsides or down-playing its importance) compared to adults residing in the United States (Reis et al., 2022). Moreover, these behaviours were either unrelated or positively related to relationship quality. Similar findings were obtained in a separate study comparing European American, East Asian, and South Asian adults (Sim et al., 2023). Overall, these findings suggest that forms of caregiving that are

typically associated with an anxious attachment pattern are not necessarily negative for relationships in ecologies of interdependence. Accordingly, the SEA model predicts that the negative association between attachment anxiety and perceived caregiving quality would be weaker in ecologies of interdependence.

Intersections with other theoretical models

In this section, we discuss how the SEA model intersects with relevant theoretical frameworks – namely, the life history approach to attachment explaining the role of early caregiving ecology in adult attachment orientations (e.g., Szepsenwol & Simpson, 2019), the social defence theory (Ein-Dor et al., 2010) explaining how adult attachment orientations may exert a bottom-up influence on collective outcomes, and Strand's model of attachment and culture (2020) explaining how attachment orientations are linked to broad cultural dimensions of individualism versus collectivism.

Life History approach to attachment

Life History Theory is an evolutionary framework explaining how individual differences in reproductive development, mating, and parenting emerge as an adaptive response to early caregiving ecology (Chisholm et al., 1993). Researchers applying a life history perspective on attachment (e.g., Szepsenwol & Simpson, 2019) propose that harsh and unpredictable environments are associated with greater likelihood of rejecting or unreliable caregiving, which predicts insecure attachment orientations across adolescence and adulthood. In contrast, lenient and predictable environments are associated with responsive caregiving, which predicts secure attachment. Attachment orientations, in turn, mediate mating and parenting tendencies that are adaptive to the early ecology.

Analysis of two longitudinal U.S. cohorts provided empirical support for the proposed prospective links between early life ecology and adult attachment. In the Minnesota Longitudinal Study of Risk and Adaptation cohort, environmental unpredictability in the first four years of life – operationalised as experiencing frequent changes in caregiver employment, parental cohabitation, and family residence – prospectively predicted insecure adult attachment orientations at ages 19 and 26 (Szepsenwol et al., 2015). In the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development cohort, changes in parental cohabitation status during childhood predicted higher insecure attachment at age 18 (Fraley et al., 2013).

The role of environmental threats in adult attachment is common to both the life history approach and the SEA model. The former

predominantly focuses on present-day unpredictability that a family encounters while the latter focuses on longer-term, historical threats that a society encounters. A second common feature is residential mobility, albeit with different operationalisations. In the Minnesota Study sample, residential mobility during childhood was taken as an indicator of a latent risk composite–i.e., the assumption is that the family had to undertake moves due to socioeconomic difficulties. The SEA model follows the socioecological operationalisation of residential mobility as a feature of an individual's proximal ecology across a timespan (Oishi, 2010). This operationalisation does not differentiate between reasons for the moves but is rather interested in the effects of frequent moves on the constructions of the self and social relationships.

Social defence theory

Another framework that integrates evolutionary and attachment perspectives to explain the adaptive value of insecure attachment is the social defence theory (Ein-Dor et al., 2010). While the life history theory approach is concerned with the adaptive value of insecure attachment at the individual level, the social defence theory is concerned with the adaptive value at the group level. The main premise of the model is that insecurely attached individuals' habitual response tendencies under threat may benefit the inclusive fitness of their groups. Anxious individuals' chronic vigilance to threat may help them detect cues of danger early and warn fellow group members. Avoidant individuals' chronic self-protection tendencies may help them quickly enact a fight-or-flight response, thereby helping their group by either thwarting the threat or identifying an escape strategy. In line with these predictions, a study exposing groups of adults to a threatening lab situation (a study room gradually filled with smoke due to "malfunctioning equipment") observed that having anxiously attached members was associated with the group's faster detection of danger while having avoidantly attached members was associated with the group's faster response–i.e., either leaving the room or attempting to stop the smoke (Ein-Dor et al., 2011).

Collective threat is a common construct to both the social defence theory and the SEA model. The main difference is the direction of association each model delineates. The social defence account is concerned with how distribution of attachment orientations within a group predicts group-level coping with threat. In contrast, the SEA model is concerned with the downstream role of collective threats in adult attachment processes at the individual level.

Strand's (2020) model of attachment and culture

In a recent theoretical model, Strand (2020) proposed a cycle of processes that starts from broad cultural practices of individualism and collectivism to caregiver response patterns regulating children's security bids. According to the model, caregivers' habitual reinforcement patterns of children's security bids are associated with greater prevalence of avoidant attachment in individualistic cultures but anxious attachment in collectivist ones. These attachment orientations, in turn, are linked back to cultural practices. According to the model, one of the pathways by which attachment orientations are linked to cultural practices involves social network structures. Due to anxiously attached individuals' high desire for closeness and preoccupation with relationships, groups with high prevalence of attachment anxiety tend to organise in small, exclusive networks of strong ties. In contrast, due to avoidant individuals' preference for autonomy and reluctance for closeness, groups with high prevalence of avoidance tend to organise in large, loosely connected, intertwined networks.

A study across 219 countries and territories revealed mixed support for the model predictions on the links between attachment orientations and culture, with collectivism being positively related to attachment anxiety but individualism being unrelated to attachment avoidance (Chopik & Edelstein, 2014). An analysis of 13-year panel data collected from adults residing in Greece revealed that variation in attachment orientations temporally preceded variation in cultural constructions of the self, supporting the model's premise of attachment orientations acting as antecedents of cultural practices (Kafetsios, 2022b). A final study testing the role of attachment orientations in collective outcomes found, in line with the model implications, that average attachment anxiety across respondents within a country was associated with a lower number of COVID-19 cases and deaths in the country (potentially reflecting slower spread across exclusive networks), whereas average attachment avoidance was associated with a higher number of cases and deaths (potentially reflecting faster spread through integrated social networks) (Kafetsios, 2022a).

Strand's framework and the SEA model complement one another in a number of ways. First, social network structure features in both models but explain different directions of association. The SEA model elaborates on the role of social networks in mediating the top-down role of social ecology in adult attachment processes while Strand's model elaborates on the role of social networks in mediating the bottom-up role of attachment orientations in cultural practices. Second, Strand explicitly excluded socioecological factors from his model and argued that socioecological work has so far been less clear on how members of cultures come to demonstrate behavioural characteristics associated with social organisations favoured by ecological

conditions. The SEA model helps fill the gap Strand noted by delineating the processes involved in the downstream role of socioecology in adult attachment.

Before closing this section, we would like to highlight two points. The first one relates to an important difference between the SEA model and all three models reviewed in this section. Prior theoretical frameworks focused only on attachment orientations. The SEA model generates predictions on the role of social ecology in a wider range of adult attachment phenomena including not only the development and prevalence of attachment orientations but also the structure and composition of attachment networks as well as alleviation and buffering of attachment insecurities. The second point concerns the collective contribution of intersecting theoretical models. Perhaps no single theoretical model can explain the complex interplays between ecology, culture, and social relationships in their entirety. But each can generate testable predictions by parsimoniously focusing on a certain aspect, thereby contributing to a nuanced understanding of these phenomena. We hope the present paper makes a meaningful contribution to this collective effort.

Limitations, constraints on generality, and future directions

The present review is one of the first attempts to integrate socioecological psychology into the study of adult attachment. We acknowledge that the proposed theoretical model is largely tentative at this point. Direct evidence on the model predictions has recently started to accumulate (Yilmaz et al., 2022) and is currently limited to a single country (Turkey). Indirect evidence from cultural and socioecological psychology is mostly based on samples from North America, East Asia, and to some extent West Africa. Future studies that directly test the model predictions using within- and cross-country designs will uncover which aspects of the model are robust and which should be re-evaluated in light of new evidence.

The current form of the SEA model does not address potential gender differences. Regarding normative attachment processes (e.g., stress buffering, separation distress), the literature generally documents comparable effects across genders (Selcuk, Zayas, et al., 2010) but in cases where a gender difference exists, the effects are usually more pronounced for women (e.g., Diamond et al., 2008; Selcuk et al., 2012). Regarding individual differences in attachment orientations, a study across 62 world regions found that on average, men were more avoidantly attached than women but this difference showed regional variation (Schmitt et al., 2003). Men were generally more avoidant than women in countries with low levels of threat but the difference disappeared – mainly due to women reporting high levels of avoidance – in countries with high levels of threat. Although gender differences were usually small in

magnitude (also see Chopik & Edelstein, 2014), an open question for future research is whether gender serves as a boundary for the SEA model predictions.

To parsimoniously present our predictions, we selectively focused on the downstream role of socioecological factors in adult attachment processes. An intriguing question emerging from theoretical (Ein-Dor et al., 2010; Strand, 2020) and empirical (Kafetsios, 2022a, 2022b) work on the role of attachment orientations in collective outcomes is whether attachment orientations would have a similar bottom-up role in predicting social ecologies. For example, whether groups with a greater proportion of anxiously attached members are more likely to create residentially and relationally stable ecologies would be an interesting question for future research.

Conclusion

Although the role of culture and social ecology in infant attachment has been a topic of a lively debate for a while (Keller, 2016, 2017; Morelli, 2015; Rothbaum et al., 2000; van IJzendoorn & Sagi, 1999; Vicedo, 2017), socioecological psychology and adult attachment research have remained largely disconnected from one another. When adult attachment theory was formulated during the late 80s and early 90s, cultural critiques were yet to be integrated into traditional attachment theory (Vicedo, 2017). When cultural work on early life attachment reached a critical peak and provided alternative views to the classical formulation attachment theory during the second half of 2010s, the adult attachment literature had already progressed and matured in its own trajectory (Mikulincer & Shaver, 2016). With the increasing appreciation of contextual influences on adult attachment processes (e.g., Arriaga et al., 2018; Zayas et al., 2015), we feel that the time is ripe for more cross-talk between socioecological psychology and adult attachment literatures. Such integration can inspire exciting research that combines two critical levels of analysis for understanding close relationships – the dyadic level that has been the predominant focus of adult attachment research and the broader contextual level that has been the focus of socioecological psychology. We hope the current review will spark more research on the socioecology of adult attachment, which, ultimately will increase the relevance of one of social psychology's classical theories to diverse settings across the globe.

Disclosure statement

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