Being There: Using Combined Experience Data Sources to Capture Tourist Interactions

Ondrej Mitas,[1] Loïs Camp,[1] Ruben Raidt,[2] Kyle Woosnam,[3] Joël Pardaan,[1] Simone Moretti,[1] Jeroen Klijs,[1] Sait Durgun[1]

[1] Breda University of Applied Sciences, Breda, the Netherlands
mitas.o@buas.nl, loiscamp53@gmail.com, pardaan.j@buas.nl, moretti.s@buas.nl, klijs.j@buas.nl, durgun.s@buas.nl
[2] Academiehuis, Zwolle, the Netherlands
rubenraidt@academiehuis.nl
[3] University of Geogria, Warnell School of Forestry and Natural Resources, Athens, Georgia, United States of America
woosnam@uga.edu

DOI
https://doi.org/10.18690/um.fov.4.2026.47

ISBN
978-961-299-152-4

Tourist-resident interactions are central to tourism experience yet notoriously difficult to capture in naturalistic settings. Drawing on Collins' interaction ritual theory, this study refines its core construct of "emotional energy" by redefining it as emotional arousal-a momentary psychophysiological response that accrues, over repeated interactions, into the more enduring attitude of emotional solidarity. We tested this two-level theoretical model using an innovative combination of continuous skin conductance recording, 360-degree camera monitoring, and questionnaires with 115 participants (49 tourists, 66 residents) across two Dutch tourism experiences designed to facilitate tourist-resident encounters. Results confirmed that interactions triggered elevated emotional arousal at the within-person level, consistent with interaction ritual theory. However, between-person effects on emotional solidarity, destination recommendation, and support for tourism were not observed, likely because interactions were remarkably few and brief. We discuss implications for tourism experience design and the methodological potential of combined psychophysiological and video-based field measurement.

Keywords:
social interaction, 360 degree video, skin conductance, psychophysiology, emotion, tourism

University of Maribor Press

1 Introduction

Interactions between tourists and local residents are inherent to tourism. When people visit a place for leisure purposes, they usually encounter other people going about daily life in the same spaces. Tourism scholars have thoroughly documented that these encounters can give tourist experiences tremendous value, ranging from memorable experiences (Jiang et al., 2022) to lifelong friendships (Cai et al., 2025). Scholars have also extensively explored the negative aspects of interactions between tourists and residents. Negative resident-tourist interactions are a manifestation of 'overtourism,' a situation of locally excessive tourist flows that leads to resident resistance (Gössling et al., 2020). Thus, explaining how these interactions and their consequences unfold is an urgent issue for tourism research. Joo et al. (2020) proposed an adaptation of the Collins (2014) interaction ritual theory to explain why tourists and residents interact, and how these interactions lead to downstream behavior.

Unfortunately, it has proved challenging for researchers to systematically record interactions between individuals in natural settings, especially such dynamic settings as tourism experiences. In the present study, we bring an innovative technological development to bear on this issue, namely the combination of continuous skin conductance recording with 360-degree camera monitoring. While these technologies are not new, their novel combination allows us to precisely isolate psychophysiological responses to social interactions.

Applying this powerful technological combination to the issue of tourist-resident interactions, we undertake a multi-method, multilevel analysis to measure and explain interaction outcomes. First, we review how interaction ritual theory has been adapted to tourism and attempt to sharpen its conceptual precision, making a distinction between *emotional arousal* and *emotional solidarity*, arguing that *arousal* is a momentary physiological response which, in sufficient levels and frequency, might lead to *solidarity*, an enduring affective attitude, over time. Then, we test the effects of interactions on a between-person level, focusing on experience evaluation and support for tourism as desirable outcomes of interactions in the context of tourism. Finally, we examine the extent to which interactions indeed contribute to emotional arousal on a within-person, moment-to-moment level.

2 Literature review

2.1 Interaction rituals

In his influential book about interaction rituals, Randall Collins (1981, 2014) presented a remarkably clear set of psychological hypotheses about how social interactions unfold between people. According to Collins, interactions are ritualized at the societal level and thus follow a predictable sequence of mechanisms. First, multiple people find themselves in the same physical space. Second, they focus their attention on one and the same object. Third, they share a common or comparable emotional reaction to the object. Fourth, as the interaction progresses, both attention and emotion amplify. Finally, the members of the interaction begin to identify with one another, as members of a small and temporary in-group (Collins, 1989).

Unfortunately, Collins did not interface with the discipline of emotion psychology (Barrett, 2017; Ekman et al., 1983; Frijda, 2017; LeDoux, 1998; Russell, 1978), which at that time already had much to contribute to individual-level analyses of social interactions. Collins also faced obvious measurement challenges with fleeting social, affective, and cognitive phenomena as they occurred in naturalistic settings. As interaction rituals are crucial to understanding tourism (Joo et al., 2020), tourism scholars have tried to address these methodological challenges, at first tangentially as explain in the following section.

2.2 Interaction rituals in tourism

Joo et al. (2020) suggested that the construct of emotional solidarity may replace emotional energy in Collins' theory for methodological purposes. They claimed that "although doing so may not be an ultimate solution, it can be an effective means of circumnavigating the conceptual issue associated with emotional energy and the interpretative challenges associated with understanding physiological data" (p. 10). In the present paper, we address these issues and challenges to advance tourism knowledge.

The "conceptual issue associated with emotional energy" (p. 10) that Joo and colleagues touch upon is that emotional energy is only vaguely defined in Collins (2014), even by his own admission. To sharpen this definition requires looking across disciplines to emotion psychology. In Collins' book, emotional energy is apparently a reaction to social stimuli that hold personal meaning, a definition rather similar to emotion in general (Rosenberg, 1998), though specifically in a social context. Collins' emotional energy is something that emerges in interactions between people, rather than within an individual, however. Thus, besides emotion in general, Collins' conceptualization touches on the construct of emotional contagion. Emotional contagion is the process whereby an emotional expression in one person triggers a similar reaction in another (Mitas et al., 2022). Further adding to the ambiguity, Collins' model posits emotional energy as a necessary condition for an interaction to continue or be repeated, a reaction associated with positive emotions in particular, whereas Joo et al. (2020) make a distinction between positive and negative emotional energy. We choose to approach emotional energy at the individual rather than dyadic level, that is, conceptualizing emotional energy as something *one person* feels as a result of interacting with others, rather than something that connects one person's emotions to that of another's. Furthermore, we follow Joo et al. (2020) in understanding emotional energy as something with no inherent valence. That is, emotional energy may have a positive or negative valence.

Applying the well-established valence-arousal dimensional model of emotion (Barrett, 2017; Posner et al., 2005; Russell, 1978) to these conceptual clues, we posit that *emotional energy* as described by Collins (2014) and Joo et al. (2020) should be redefined as the psychophysiological construct of *emotional arousal*. The word 'energy' is often defined as vigor or force, whereas arousal represents the intensity with which an emotion is experienced, and thus the extent to which it invigorates an individual to react with behavior. In both interaction ritual theory and in the dimensional model of emotion, energy and arousal respectively are akin to intensity. Thus, Collins' choice to use the term 'emotional energy' evokes the function of emotional arousal in the dimensonal model of emotion. Furthermore, just as Joo et al. (2020) describe emotional energy as being possibly either positive or negative, the dimensional model of emotion positions arousal as independent from valence. The dimension of valance refers to how positive or negative an emotion is, whereas arousal refers to intensity, independent of valence (Barrett, 2017; Posner et al., 2005; Russell, 1978). Finally, in both Collins' description of emotional energy and in empirical research

on how the brain constructs emotion (Barrett, 2017), emotional arousal or energy *precede* any conscious thought about feeling as well as any behavioral reaction. In conclusion, we adopt an operational definition of *emotional energy* in Collins' model as *emotional arousal*—the intensity of emotional experience that can be either positive or negative, and largely determines whether an emotional experience will be encoded in memory and lead to downstream behavior (Bastiaansen et al., 2019).

Joo et al. (2020) then suggest the concept of emotional solidarity as a useful proxy for emotional energy, as it is sometimes described by Collins "with little distinction from emotional solidarity" (p. 7). If emotional energy is delineated as arousal, however, a substantial distinction from emotional solidarity emerges. Emotional solidarity as conceptualized and operationalized by Woosnam and Norman (2010) is not a momentary experience, but rather an enduring attitude. Items in their Emotional Solidarity Scale measure two types of psychological phenomena: enduring patterns of past behavior, such as "I have made friends with some visitors in [destination]," and enduring emotionally-driven attitudes that can change over longer periods of time, but not moment to moment, such as "I feel affection toward visitors in [destination]" (p. 375). Accordingly, studies using the scale have been exclusively between-individual in design. Rather than using a relatively more temporally stable construct (emotional solidarity) as a between-individual proxy of a temporally unstable construct (emotional energy), we hypothesize that transient experiences of emotional arousal could potentially accrue to emotional solidarity. Thus, we divide the theoretical model posited by Joo et al. (2020) into a within-person level, wherein interactions might affect emotional arousal, and a between-person-level, wherein interactions are related to emotional solidarity. Furthermore, we expect interactions that contribute to emotional solidarity on a between-person level to feature higher emotional energy on a within-person level.

2.3 Hypotheses

We posit several between-person hypotheses (Figure 1 in blue):

- H1. The number and total duration of interactions between residents and tourists is associated with intent to recommend the destination.
- H2. The number and total duration of interactions between residents and tourists is associated with support for tourism among residents.

And we also posit several within-person (in interaction with between-person effect) hypotheses (Figure 1 in green):

- H3. Interactions between tourists and local inhabitants trigger emotional elevated emotional arousal.
- H4. The effect of interactions between tourists and local inhabitants on emotional arousal is accentuated among individuals with higher levels of tourist-inhabitant emotional solidarity.

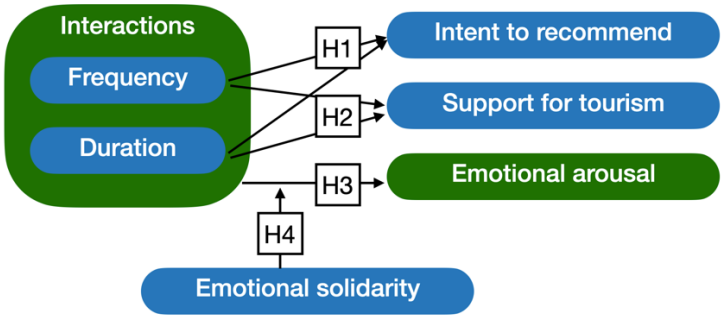

Figure 1. Study hypotheses
Source: Own

These hypotheses have been technically difficult to test until recently. Thus, besides extending theory on interaction rituals in a tourism context, our study represents a methodological contribution in experience measurement technology. Interactions between people, especially strangers, have been difficult to capture because they tend to be rather fleeting. As such, there have been few serious attempts to isolate continuous measures of experiences based on discrete epochs of social interaction, at least outside of laboratory settings. However, the combination of 360-degree cameras and wearables which measure physiological arousal make isolating individual reactions possible. The accessibility of these technologies allowed us to not only address hypotheses raised by interaction ritual theory, but to demonstrate how it is technically feasible to isolate emotional responses to interactions between people.

3 Methods

The present study used a multi-method longitudinal approach to measure tourist-resident interactions at two locations in the early summer of 2022. Two tourist experiences designed to facilitate tourist-resident interactions were selected on basis of theoretical relevance and availability to measure participants' experiences in detail. Then, participants—who comprised 49 tourists and 66 residents—filled in questionnaires before and after the experience, and were continuously monitored for interaction and emotional arousal using 360-degree camera and wearable recordings. Thus, three methods are brought together in our study: self-response questionnaires, continuous physiological recording, and camera-based continuous behavior monitoring. While each method has limitations, the three methods are brought together to create an unusally complete and temporally detailed assessment of social interactions and their consequences during these experiences.

3.1 Study contexts

We selected two experiences which were designed for and consumed by roughly equal proportions of residents and tourists. Each of these experiences highlights a specific attraction from a mid-size city in the Netherlands, and each has a stated, secondary goal of facilitating resident-tourist interactions. St. Michael's Church in Zwolle is operated as the Academiehuis (Academy House), offering a self-guided visit of varying cultural products, including Gothic church interior architecture, an art gallery, a secondhand bookshop, a café, and recorded as well as live music. The Blind Walls Gallery tours in Breda offer an urban walk experience focused on a selection of the city's over 100 (in 2022; now over 200) contemporary murals. The murals are commissioned from internationally renowned painters and graphic artists and express site-specific stories from the city's history. They are guided by knowledgeable tour guides, often students or recent graduates of the local art school.

3.2 Sample

Due to the different structures of the two experiences studied (self- vs. professional-guided) we also approached sampling differently. At the Academiehuis, we used intercept sampling, choosing peak hours on weekend days which were likely to be busy, to maximize both the sampling frame of potential participants and to capture

maximum possible interactions within each participant. At the Blind Walls Gallery tours, we arranged tour dates and times at moments when guides were available, then used a combination of convenience and snowball sampling to recruit participants from researchers' personal and professional social networks. This sampling approach resulted in 74 participants recruited over three weekends at the Academiehuis, and 45 participants recruited over the course of five guided tours.

The distinction between tourists and residents was important to study hypotheses. Unfortunately, this distinction is challenging in both theory and practice. To simplify matters, we included both overnight and day visitors in the tourist category, while residents were defined as individuals self-reporting long-term (e.g., permanent or higher education) residence in the same city as the attraction.

3.3 Measures

We combined multiple measurement streams by participant ID and time to create a multilevel dataset suitable for testing our hypotheses. Key between-person variables of emotional solidarity, support for tourism, and intent to recommend were measured on a questionnaire administered immediately post-visit using established and validated items from (Woosnam & Norman, 2010) and Reichheld (2003), respectively. Emotional arousal and social interaction were measured within each individual, continuously throughout the visit. To record social interaction, we recorded video using a 360 degree camera. Placed centrally on a tripod within the Academiehuis, this allowed us to record all visible behavior throughout the data collection period simultaneously. During Blind Walls Gallery tours, the camera was instead mounted on a monopod which was inserted into a backpack worn by a research assistant who followed all the tours. This approach allowed us to record all visible behavior simultaneously. Social interactions were coded with second-accurate time stamps by trained research assistants.

We recorded skin conductance as an index of emotional arousal from each participant using Empatica E4 wearable wristbands and external pre-gelled single-use electrodes attached to the inner medial phalanges of the first and second digits. The inner (palm) side of the digits contains sufficient eccrine sweat glands to give a relatively high-quality signal in skin conductance changes over the course of an experience (Braithwaite et al., 2015). Any potential motion artifacts in the raw data

were highlighted using the ArtifactZ algorithm (Bastiaansen et al., 2022), checked by a trained member of the research team (2nd author), and replaced by linear interpolation. Then, the skin conductance signal was separated into its tonic component, which represents gradual change due to ambient temperature and wearing of the device, and its phasic component, which contains rapid changes due to emotional arousal. Finally, we z-standardized the phasic component within each participant to eliminate between-participants differences in skin conductance reactivity to physiological arousal, and log-transformed it to reduce skew.

3.4 Data analysis

Our analysis approach included three steps. First, we computed descriptive statistics on all variables to get a general impression of the experiences and opinions of our sample. Second, we used linear regressions to test between-individual hypotheses. Finally, to test within-individual hypotheses, we used mixed-effects linear models with random intercepts per participant, testing coefficients by Satterthwaite approximation.

4 Findings

4.1 Descriptive findings

Most participants (61 of 82 who provided complete data), including all residents (n=28), were not seen in tourist-resident interactions. Among tourist participants, 13 engaged in one interaction with residents, while eight engaged in more than one (max = 8 interactions). For those who did interact, they spent 7.25 to 239 seconds interacting (mean = 20.15 seconds, sd = 49.45 seconds, skew = 2.78). The low rate and duration of interactions was remarkable, and must be kept in mind while interpreting further results.

Participants felt generally positive about the city destinations where the research took place, with mean intent to recommend of 8.13 (sd = 1.18) on a 0-to-10 scale. Residents were moderately positive in their support for tourism, above the scale midpoint of 3 (mean = 3.79, sd = 0.46). Relatively strong support for tourism was consistent with both Breda and Zwolle being midsize cities where any crowding situations include substantial proportions of local residents. Moderate emotional

solidarity with the other was reported by both tourists (mean = 3.21, sd = 0.42) and local residents (mean = 3.38, sd = 0.58).

4.2 Hypothesis testing

Our first hypothesis was that interactions between residents and tourists are associated with intent to recommend the destination (city). We modelled this using a linear regression model, with intent to recommend the city as the dependent variable, and number of continuous runs of data points in interaction between tourists and locals as well as total duration of those points in seconds as predictors. For the 82 participants with complete data for these variables, there was no effect of interacting on intent to recommend, with an R-square of less than 1% and non-significant F test for the model overall (F = 0.2435 (2,79), p = 0.7844). This hypothesis was therefore rejected.

Table 1: Linear regression of intent to recommend on frequency and duration of interaction between tourists and resident

	Coefficient estimate	SE	t
(intercept)	8.1032	0.1431	56.640***
frequency	0.0944	0.1833	0.515
duration	-0.0012	0.0055	-0.219

R-square: 0.006; p values: *** <0.001< ** <0.01< * 0.05

Our second hypothesis was that interactions with tourists are associated with support for tourism among the residents in the sample. Because no residents interacted with tourists, this hypothesis could not be tested and was therefore not supported.

Our third hypothesis was that emotional arousal would be triggered by moments of social interaction between tourists and residents. We modelled this hypothesis using the full (four times per second) skin conductance data as our dependent variable. For the predictor, we used a dummy coded 1 if the given participant was in a tourist-resident interaction at that moment, else 0. A random intercept per participant was estimated. This model (Table 2) revealed a very weak, significant effect of tourist-resident interactions on skin conductance (coefficient = 0.0329, se = 0.0014, p < 0.001; marginal-R-square = 0.001). Adding a second dummy variable, representing tourist-tourist and resident-resident interactions revealed an almost identical effect

(coefficient = 0.0333, se = 0.0010, p < 0.001; marginal-R-square with both predictors = 0.002). Therefore, H3 was partly supported, in that interacting was more emotionally arousing than not interacting, but interactions within only tourists or only residents were essentially as arousing as those between tourists and residents.

Table 2: Linear mixed effects model of emotional arousal on interactions between tourists and residents

	Coefficient estimate	SE	T estimate
(intercept)	0.14205	0.0083	17.08***
Tourist-resident interaction	0.0329	0.0014	22.95***
Tourist-tourist or resident-resident interaction	0.0333	0.0010	32.18***

Conditional R-square estimate: 0.308; Marginal R-square estimate: 0.002; p values: *** <0.001< ** <0.01< * 0.05

Our fourth and final hypothesis was that the effect of social interactions on skin conductance would be reinforced by emotional solidarity, leading to an interaction effect. We entered emotional solidarity as an interaction term to the mixed effects model of skin conductance as a function of tourist-resident interactions. As two participants did not provide emotional solidarity data, this model was estimated based on 80 participants (Table 3). While this addition substantially improved the marginal-R-square estimate (from 0.001 to 0.009), complexity-penalized model fit was marginally worse (BIC from -919763.3 to -907056.8) and neither the interaction term nor the zero-order effect of emotion solidarity was significant. Therefore, our hypothesis of emotional solidarity as an accelerant of emotional arousal in social interaction was not supported.

Table 3: Linear mixed effects model of emotional arousal on interactions between tourists and residents moderated by emotional solidarity

	Coefficient estimate	SE	T estimate
(intercept)	0.2178	0.0574	3.794***
Tourist-resident interaction	0.0493	0.0110	4.468***
Emotional solidarity	-0.0231	0.0173	-1.329
Tourist-resident interaction X Emotional solidarity	-0.0051	0.0034	-1.488

Conditional R-square estimate: 0.308; Marginal R-square estimate: 0.009; p values: *** <0.001< ** <0.01< * 0.05

5 Discussion and conclusions

We studied two tourist experiences aimed at fostering interactions between tourists and local residents through the lens of Collins' interaction ritual theory, which posits that interactions trigger emotional 'energy.' We extended this theory to a greater degree of conceptual precision using contemporary psychological understanding of emotion. We specified that social interactions trigger momentary peaks in emotional arousal, which might build solidarity over repeated exposure and eventually accrue to lasting social bonds. We found support for the theoretical proposition that tourists and local residents find social interactions emotionally arousing, a novel contribution to the academic discussion around interaction rituals.

No between-person differences in emotional solidarity, support for tourism, or intent to recommend the destination were linked to interactions between tourists and residents, however. This is likely because the studied experiences triggered remarkably few, very brief interactions between tourists and residents. None of the local residents studied and merely 39% of tourists interacted with the other at all, and not a single participant spent as much as 5 minutes interacting, despite one of the studied experiences (Blind Walls Gallery tour) necessarily lasting over an hour. Therefore, rather than rejecting possibility of tourist-resident interactions contributing to destination evaluation, quality, and support for tourism, we rather posit that the experiences we studied were not *yet* sufficiently centred on tourist-resident interaction to fully test Collins' theory.

Conditions have changed since the data were collected in 2022. Perhaps most importantly, in 2022, the last social distancing restrictions of the Covid-19 pandemic were still being phased out in the Netherlands. Thus, people's habitual behaviors, including their physical closeness to one another, were still somewhat affected. That is no longer the case today. Over the same period, the Blind Walls Gallery has doubled in the number of murals. The gallery has also increased the number of guided tours, and tourism to Breda has increased generally. These developments could facilitate interactions between tourists and residents. At the Academiehuis, the visitor experience has evolved even more substantially, with additions such as a more extensive shop, guided tours, and children's routes. Reconstruction of the church, which was ongoing in 2022, has also been completed. These elements more actively structure visitor presence and potentially increase opportunities for interaction.

Thus, future research should re-examine both the Blind Walls Gallery and Academiehuis to determine to what extent these strategic developments have been effective. Also, now that the Academiehuis offers guided tours, a 2x2 design including both guided and self-guided experience in each location could yield additional experience design insights. It would also be possible to broaden the research further still to contexts where longer-lasting interactions might be structurally more prevalent (i.e., festivals, guided outdoor recreation and adventure, and homestays). Finally, a different sampling approach could target populations, such as backpackers or solo tourists, which are presumed to be more interested in interacting with strangers.

Besides contributing to the academic discussion around interaction rituals in tourism, our study showcases technical solutions to the dilemma of studying social interactions in the field. The valid, reliable, and informationally dense data show that the collected data streams-skin conductance, 360-degree video, and questionnaires-can be readily and accessibly combined to capture social interactions between tourists. There is a 'weak link' in the system for future technological development to address, however, which is the identification and coding of social interaction from video.

At the time the data were collected and coded (2022), broadly available algorithms were not yet sufficient to identify specific participants from 360 degree video and code their interactions. Recent developments in artificial intelligence are making video processing more efficient on an almost-daily basis. The video data we struggled with in 2022 could now be coded with partial automation based on supervised machine learning. These technical advances would support research on social interactions by allowing for larger samples and potentially richer data.

In sum, our findings give a practical as well as methodological snapshot in time. Collected in spring of 2022, at the tail end of the Covid-19 pandemic, we showed that in this context, two novel tourism experiences triggered relatively few, rather brief interactions between tourists and residents. Consistent with Randall Collins' theory of ritual interactions, these interactions triggered emotional arousal, but were not protracted enough to build emotional solidarity or positive evaluations of destinations. Furthermore, we demonstrated that interactions are now technically accessible using an innovative combination of skin conductance wearable recording, 360 degree video, location tracking, and mobile questionnaires, albeit with manual

coding of video. Given current technological developments in these areas, we hope our snapshot from 2022 inspires other tourism, psychology, and sociology scholars to pursue the previously-difficult domain of social interaction research.

References

Barrett, L. F. (2017). *How emotions are made: The secret life of the brain*. Houghton Mifflin Harcourt.

Bastiaansen, M., Lub, X., Mitas, O., Jung, T. H., Passos Acenção, M., Han, D., Moilanen, T., Smit, B., & Strijbosch, W. (2019). Emotions as core building blocks of an experience. *International Journal of Contemporary Hospitality Management*, *31*, 651-668.

Bastiaansen, M., Oosterholt, M., Mitas, O., Han, D., & Lub, X. (2022). An emotional roller coaster: Electrophysiological evidence of emotional engagement during a roller-coaster ride with virtual reality add-on. *Journal of hospitality & tourism research*, *46*(1), 29-54.

Braithwaite, J. J., Watson, D. G., Jones, R., & Rowe, M. (2015). *A Guide for Analysing Electrodermal Activity (EDA) & Skin Conductance Responses (SCRs) for Psychological Experiments*. U. o. B. Behavioural Brain Sciences Centre, UK.

Cai, J., Wu, M.-Y., Wang, L., Ye, S., Chan, J. H., & Li, Q. (2025). 'My host is my buddy': revisiting guests' emotional solidarity with hosts in Peer-to-Peer(P2P) accommodation. *Current Issues in Tourism*, 1-18. https://doi.org/10.1080/13683500.2025.2512003

Collins, R. (1981). On the microfoundations of macrosociology. *American journal of sociology*, *86*(5), 984-1014.

Collins, R. (1989). Toward a neo-Meadian sociology of mind. *Symbolic Interaction*, *12*(1), 1-32.

Collins, R. (2014). Interaction ritual chains. In *Interaction Ritual Chains*. Princeton university press.

Ekman, P., Levenson, R. W., & Friesen, W. V. (1983). Autonomic nervous system activity distinguishes among emotions.

Frijda, N. H. (2017). *The laws of emotion*. Psychology Press.

Gössling, S., McCabe, S., & Chen, N. C. (2020). A socio-psychological conceptualisation of overtourism. *Annals of tourism research*, *84*, 102976. https://doi.org/https://doi.org/10.1016/j.annals.2020.102976

Jiang, L., Eck, T., & An, S. (2022). A Study on the Effect of Emotional Solidarity on Memorable Tourism Experience and Destination Loyalty in Volunteer Tourism. *Sage Open*, *12*(1), 1-19. https://doi.org/10.1177/21582440221087263

Joo, D., Cho, H., Woosnam, K. M., & Suess, C. (2020). Re-theorizing social emotions in tourism: Applying the theory of interaction ritual in tourism research. *Journal of Sustainable Tourism*, 1-16.

LeDoux, J. (1998). *The emotional brain: The mysterious underpinnings of emotional life*. Simon and Schuster.

Mitas, O., Bastiaansen, M., & Boode, W. (2022). If you're happy, I'm happy: Emotion contagion at a tourist information center. In *Planning and managing the experience economy in tourism* (pp. 122-140). IGI Global.

Posner, J., Russell, J. A., & Peterson, B. S. (2005). The circumplex model of affect: An integrative approach to affective neuroscience, cognitive development, and psychopathology. *Development and psychopathology*, *17*(3), 715-734.

Reichheld, F. F. (2003). The one number you need to grow. *Harvard business review*, *81*(12), 46-55.

Rosenberg, E. L. (1998). Levels of analysis and the organization of affect. *Review of general psychology*, *2*(3), 247-270. https://doi.org/10.1037/1089-2680.2.3.247

Russell, J. A. (1978). Evidence of convergent validity on the dimensions of affect. *Journal of personality and social psychology*, *36*(10), 1152.

Woosnam, K. M., & Norman, W. C. (2010). Measuring residents' emotional solidarity with tourists: Scale development of Durkheim's theoretical constructs. *Journal of Travel Research*, *49*(3), 365-380.