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# Sentiments Organize Affect Concepts in Yasawa, Fiji: a Cultural Domain Analysis

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## Abstract

For decades, intensive research on emotion has advanced general theories of culture and cognition. Yet few theories can comfortably accommodate both the regularities and variation empirically manifest in affective phenomena around the world. One recent theoretical model (Gervais & Fessler, 2017) aims to do so. The Attitude-Scenario-Emotion (ASE) model of sentiments specifies an evolved psychological architecture that potentiates *regular variation* in affective experience and behavior in lived interaction with social, ecological and normative contexts. This model holds that *sentiments* – functional networks of *bookkeeping* attitudes and *commitment* emotions – produce *context-dependent universals* in salient social-relational experiences, predictably patterning affect concepts. The present research aims to empirically evaluate implications of the ASE model of sentiments using quantitative data from 10 months of fieldwork in Indigenous iTaukei villages on Yasawa Island, Fiji. Study 1 is a series of structured interviews that aim to elicit the full breadth of the Yasawan affect lexicon. In freelists and sentence frames, Yasawans use distinct sets of terms to refer to “feelings about” particular people (*attitudes*), and “feelings because of” particular events (*emotions*). Study 2 uses a pile sort task to show that the salient features of Yasawan affective experience are social-relational dimensions of communion and power, while both HCA and MDS reveal distinct social attitudes – “love” (*lomani*) and “like” (*taleitaki*), “respect” (*dokai*), “contempt” (*beci*), “hate” (*sevaki*), and “fear” (*rerevaki*) – anchoring the conceptual organization of Yasawan emotions. Study 3 uses hypothetical vignettes with a between-subjects attitude manipulation and Likert-style

emotion ratings to show that these attitudes differentially moderate emotions across social scenarios; differences are both quantitative and qualitative; each attitude is emotionally pluripotent; and divergent attitudes (e.g., “love” and “hate”) produce the same emotions in starkly different situations – a predicted three-way interaction of attitude x scenario x emotion. These data are broadly consistent with ASE hypotheses; population variation in affective worlds may follow from differential engagement of universal attitude-emotion networks (*sentiments*) experienced across social, ecological and normative contexts.

## Keywords

affect – emotions – attitudes – sentiments, culture, evolution – cultural domain analysis – multidimensional scaling – hierarchical cluster analysis – Fiji – Oceania

## 1 Introduction

For decades, research on emotion has been a prime mover of theories of the interaction of culture and cognition. Despite mountains of studies, and rivers of spilled ink, there remains no simple consensus. If anything, theories have calcified into predictable camps. On one side, primacy is given to manifest regularities in emotion expressions, motivations and core concepts, backing up claims of universal evolved behavior regulation systems (Nummenmaa & Saarimaki, 2019). On the other side, emphasis is placed on manifest variation in emotion language, behavioral correlates and physiology, evidence, it is said, of the cultural construction of what English speakers call “emotions” (Barrett, 2017). Methodological and analytical advances routinely reinvigorate this debate but have so far failed to converge on any answers. For example, recent machine learning studies find cross-cultural regularities across putative “basic emotion” systems (Cowen et al., 2021), while network analyses on large datasets find language universals only at the level of general, “core affect” dimensions (Jackson et al., 2019). The path to reconciling these approaches remains unclear, and it would seem new theoretical advances are needed to make sense of the patterning of variation and regularities in emotion experiences, behaviors, and concepts across individuals and populations.

One recent model attempts to address this lacuna of theory by articulating an evolved psychological architecture that can generate context-dependent universals (Chapais, 2014) in affect concepts and behaviors. Gervais and Fessler (2017) propose the Attitude-Scenario-Emotion (ASE) model of sentiments,

wherein attitudes and emotions are complementary classes of affective phenomena that serve critical *bookkeeping* and *commitment* functions in regulating social-relational behavior. In this model, *attitudes* are enduring representations of the fitness affordances of others; these affective and cognitive evaluations egocentrically track (or bookkeep) others' social-relational affordances as revealed in past interactions, reputations, and observable traits. As enduring indices, attitudes function like internal regulatory variables (IRVs; Tooby et al., 2008). In contrast, *emotions* in the ASE model are occurrent and systemic changes in an organism's mode of operation in response to particular fitness-relevant scenarios (Nesse, 1991; Cosmides & Tooby, 2000; Scherer, 2009; Nummenmaa & Saarimaki, 2019). By coordinating diverse physical and psychological systems in the face of a recurring adaptive problems, emotions probabilistically implement adaptive behavior. They do this, in part, by *committing* organisms to particular behaviors, through shifts in somatic resource availability, modulated choice option salience, a re-weighted outcome evaluations. In this approach to emotions, the ASE model follows adaptationist and social-functionalism approaches (see Al-Shawaf et al., 2016).

What the ASE model uniquely contributes is the proposal that attitudes and emotions, although historically studied in isolation, are closely functionally linked in behavior regulation, especially in social relationships: *commitment* emotions should be conditioned on, and moderated by, *bookkeeping* attitudes. This is because the predicted payoffs of particular actions depend on the predicted value of the other people impacted by those actions. For example, the adaptive behavior vis-à-vis someone in a vulnerable state depends on the long-run value of that person – if they are otherwise viewed as “worthless” as a partner, then exploiting them might payoff, but if they are an interdependent source of benefits, then the short-term payoffs of exploiting them might be outweighed by the long-term payoffs of helping them. Conditioning emotions such as guilt and compassion on attitudes such as love and respect can implement such adaptive relational behavior (see also Sznycer & Lukaszewski, 2019).

The ASE model (Gervais & Fessler, 2017) goes further in theorizing the functional relationship of attitudes and emotions. It proposes, first, that there are diverse orthogonal attitude dimensions that track different types of relational value (Cacioppo et al., 1999; Tooby & Cosmides, 2008) – these might include *fitness dependence* (Hamilton, 1964; Roberts, 2005), *competition* (Gardner & West, 2004; Balliet et al., 2017), *efficacy* (Abele et al., 2021; Chapais, 2015), and others. Second, the *emotional pluripotency hypothesis* holds that a given attitude can moderate many emotion systems across relational contexts. Attitudes inform the fitness relevance of social-relational events and can be thought of as “syndromes of episodic dispositions” (Royzman et al., 2005) that systematically

pattern emotions within relationships (Shand, 1920; Heider, 1958). As such, the ASE model labels functional networks of attitudes and emotions *sentiments*, a largely forgotten but once prominent construct in social psychology (see Allport, 1935; McDougall, 1937).

The ASE model of sentiments has important implications for understanding the structure of affect schemas and their variation across cultures. Concepts such as “emotion” and “love” may be culturally-constructed categories (Lutz 1988; Russell 1991), but their content is constrained by embodied experiences (Lyon, 1996; Niedental 2008; Russell 1991; White 2000). Such experiences, in turn, are grounded in causal and temporal contingencies in social and ecological contexts (Lutz & White 1986; Kitayama & Markus 1994) as these interact with functionally-organized behavior regulation systems (Levy 1984; Tooby & Cosmides 2008; Scherer 2009). The ASE model proposes that sentiments – attitudes and the constellations of emotions they regulate – are a key design feature of such behavior regulation systems. An implication of this model is that an affect concept can incorporate any portion of the causal-functional network linking emotions and attitudes, from pure emotion concept to pure attitude concept to the contingent interactions among them. The contents of affect concepts should be fluid across the network of underlying systems (Haslam & Bornstein 1996) as a function of cultural interpretive resources, variation in the patterning of events, contexts, or relationships, and normative expectations and consequences.

For example, understandings of “love” may emphasize a range of occurrent emotions, including romantic attraction, appreciation, contentment, compassion, anger, sadness, guilt, and longing, as well as relational commitments and obligations, all of which are causally linked to an attitude state that indexes relational dependence (cf. Royzman et al. 2005; Shaver et al. 1996; Storm & Storm 2005). These different aspects of the syndrome of love may be more or less salient depending on the lived implications of love fostered by local social or ecological contexts. In an environment of vulnerability, love may imply compassion and loss more than romance and contentment (see Lutz 1988). Communal or interdependent cultural contexts may generally emphasize relationships and their regulation at the expense of individual phenomenology (Markus & Kitayama 1991; White & Kirkpatrick 1985), potentially encouraging a conceptual emphasis on attitudes and their relational consequences rather than the subjective experience of emotions – for instance, love as relational obligations, not momentary bliss or longing.

With the right perspective and the right probes, it should be possible to reveal how emotions and attitudes articulate in the concepts and schemas a culture uses to think about and talk about affect. The present paper endeavors

an initial exploration of a Yasawa, Fiji affect lexicon with the goal of evaluating some of the implications of ASE framework. Specifically, it has four goals:

- 1) Elicit the full range of concepts that Yasawan villagers use to think about and talk about social feelings, as they may cleave into putative attitudes and emotions (Study 1).
- 2) Characterize the structure and interrelations of those concepts as this illuminates the patterning of attitudes and emotions in embodied experience and the functions that attitudes and emotions play in behavior regulation (Study 2).
- 3) Evaluate the hypothesis that interpersonal attitudes function to moderate social emotions across social events (Study 3).
- 4) Lay the groundwork for a systematic behavioral study of the bookkeeping and commitment functions of sentiments within Yasawan social relationships (presented in Gervais & Ross, In Prep).

Fiji, and especially Yasawa Island, has a relatively unexplored emotion lexicon, yet psychological anthropologists have produced a compelling body of research on the significant differences between Pacific and Western ethnopsychologies and emotions. Specifically, Pacific societies appear to “hypercognize” relational attitudes and the relational implications of emotions, in contrast to the highly individualistic and compartmentalized emphasis on phenomenological valence and arousal in Western samples (see White & Kirkpatrick 1985). As the present research attempts to demonstrate, such widely divergent affective worlds are compatible with a universal architecture of affect composed of attitudes, emotions, and their co-regulation in sentiments.

## 2 Study 1: Affect Lexicon Elicitation

Study 1 involved eliciting the terms, phrases, idioms, and underlying concepts that Yasawans use to think about and talk about social affect. This phase of lexicon elicitation was motivated by several considerations. Relying solely on dictionary translations of the relevant affective vocabulary runs the risk of ignoring anachronisms in term meaning, as the most widely used Fijian-English dictionary is from 1941 (Capel 1991) and has a number of shortcomings (Geraghty 1983). It also runs the risk of ignoring local variation in language use in a society as linguistically diverse as Fiji. In particular, the Yasawan dialect is as distinct from Standard Fijian (the language taught in schools and presented in Fijian dictionaries) as English is from German (Pawley & Sayaba, in press). In everyday practice, however, the Yasawa Island language landscape is quite heterogeneous. “Yasawan” itself is not a homogeneous language; there are

slightly varying communalects among villages on Yasawa Island, and increasingly divergent communalects as one travels away from Yasawa Island down the Yasawa island chain (Triffit 2000). Yasawa, like Fiji generally, is prescriptively patrilocal, yet perhaps 10% ambilocal (Sahlins 1962), and exogamy sends many people to Yasawa Island from other islands in the Yasawas. An increasing proportion of Yasawa residents come from beyond the Yasawa region as well, as marriage prescriptions relax, and individuals attending schooling or seeking wage labor on Viti Levu return to villages with spouses from as far away as Lau (Eastern Fiji). To facilitate economic opportunities, some Yasawan primary schools actually forbid the use of village communalects in class. For these reasons, Standard Fijian is effectively a *lingua franca* on Yasawa Island, as it is across Fiji (Pawley & Sayaba 1971), and it is common in daily conversations at all social scales, from family meals to village meetings. Only the oldest (over 80) and youngest (under 5) Yasawan villagers speak primarily in their village communalect.

Language diversity within Yasawan villages had an important methodological consequence for the current study. Because I was interested in sampling from all cognitively able villagers, and eventually running comparative studies in other villages and regions in Fiji, I opted to conduct all interviews in Standard Fijian. While this may have biased interviews against eliciting Yasawan terms, informal follow-up questioning suggested that the elicitation interviews missed none.

Four interviews contributed to Study 1:

- 1) *Interpersonal Affect Free List* (N = 10): To generate a list of the most salient local interpersonal affect terms, I asked participants, “What are all the ways in which a Fijian might feel towards another person?” (*Na cava kece na sala e dau lomamuni nai taukei vei so tale na tamata?*).
- 2) *Attitude Targets* (N = 8): To generate terms used in evaluating relationships, I asked participants, “How do Fijians tend to feel about [person]?” (*E dau vakacava nai vakarau ni lomamuni nai Taukei me baleti ira na [person]?*), where [person] was 24 local statuses, roles, relations, or character traits selected to cover a range of social-relational costs and benefits (see Table 1 for a list of the attitude targets).
- 3) *Emotion Scenarios 1* (N = 8): To generate terms used to describe emotional responses to events, I asked participants, “How would you feel if [event]?” (*E na vakacava beka na vakarau ni lomamu, kevaka [event]?*), where [event] was 41 locally-relevant events selected to elicit a range of hypothesized emotions (see Table 2 for a list of the scenarios used).
- 4) *Emotion Scenarios 2* (N = 10): To elicit hypothesized emotions and distinctions among emotions not revealed in Emotions Scenarios 1, a separate

TABLE 1 24 attitude targets from Attitude Targets Interview in Study 1

	English	Fijian
1	God	<i>Kalou</i>
2	Chief	<i>Turaga</i>
3	Pastor	<i>Talatala</i>
4	Parallel cousin	<i>Veitatacini</i>
5	Cross-cousin	<i>Tavale</i>
6	Child	<i>Driadria</i>
7	Fiji's best rugby player	<i>Tamata dau qito / Viti</i>
8	Industrious person	<i>Tamata mamakutu</i>
9	Wise person	<i>Tamata vuku</i>
10	Crippled person	<i>Ilokiloki</i>
11	Infertile person	<i>Sega ni vakaluveni</i>
12	Incompetent person	<i>Ulumalumumu</i>
13	Crazy person	<i>Tamata lialia</i>
14	Weird person	<i>Tamata vecalati</i>
15	Thief	<i>Daubutako</i>
16	Liar	<i>Tamata lasulusu</i>
17	Selfish person	<i>Tamata buroburogo</i>
18	Lazy person	<i>Tamata vucesa</i>
19	Disrespectful person	<i>Dokadokai koya</i>
20	Disloyal person	<i>Tamata Liumuri</i>
21	Indo-Fijian	<i>Kaidia</i>
22	Enemy	<i>Meca</i>
23	Visitor	<i>Tamata vulagi</i>
24	Ancestor spirits	<i>Kalou Vu</i>

set of participants was asked, "How would you feel if [event]?" (*E na vakacava beka na vakarau ni lomamu, kevaka [event]?*), where [event] was 32 additional locally-relevant events (see Table 3 for a list of the scenarios used).

I expected that together these interviews would elicit the full range of concepts used to categorize social affects in Yasawa, while giving some insight into the meanings of such terms through the kinds of people and events to which they are applied. I was especially interested in comparing whether different terms would be used to talk about evaluations of people as to talk about reactions to events. I also aimed to elicit Yasawan terms that are unique to the local

TABLE 2 41 emotion scenarios from Emotion Scenarios 1 interview in Study 1

#	Target Emotion	English How would you feel if ...	Fijian <i>E na vakacava beka na vakarau ni lomamu, kevaka ...</i>
1	anger	... a stranger stole and ate one of your chickens?	<i>... a dua na vulagi a butakoca ka kania e dua vei ira na nomu toa?</i>
2	anger	... one of your close relatives burned your garden?	<i>... dua vei ira na wekamu voleka a vakama na nomui teitei?</i>
3	sadness	... someone you loved were gravely injured in a storm?	<i>... dua na namui tokani o daulomana a mavoa ena dua na cava?</i>
4	sadness	... someone stole your romantic partner?	<i>... dua a butakoca na nomu daulomani?</i>
5	happiness	... your child got the highest exam score in his/her class?	<i>... a rawata na maka levu na luvemu ena nona kalasi?</i>
6	happiness	... you won \$1000 for texting the right answer to Voda Star?	<i>... o ni winitaka e \$1000 na dola ena nomuni sauma donu na taro ni voda star?</i>
7	happy	... the village women were satisfied with the condition of your house during their Monday inspection?	<i>... era yalo vakacegu na marama ena koro enai tuvaki ni nomuni vale ena siga moniti na siga ni rai koro?</i>
8	fear	... a hurricane blew the roof off your house in the middle of the night?	<i>... a dua na cagilaba a vukataka na nomu doka ni vale ena lomaloma ni bogi?</i>
9	fear	... your boat capsized in stormy seas?	<i>... a vakatoboicu na nomu waqa ena dua na cava ni waitui titobu?</i>
10	disgust	... you were chasing a chicken for lunch and you fall into a septic tank?	<i>... a vakacemuria e dua na toa mei vakasigalevu ka o qai lutu ena dua na qara ni vale lailai?</i>
11	disgust	... you saw two men, married to each other, holding hands in the street?	<i>... iko raica e rua na tagane, rau vakawati vata, ka rau taubale veitauri liga vata tu e gauniusala?</i>
12	pride	... Yasawa won the B-Division Rugby Championship?	<i>... a qaqa o Yasawa ena fainala levu ni B-Division?</i>
13	pride	... the elder's spoke highly of you at a community meeting?	<i>... a vosa vakalavelaveti iko o ira na qase ni koro ena bose vakoro?</i>
14	guilt	... you were caught stealing tavioka from someone else's garden?	<i>... o ni tobo ena butako tavioka enai teitei nei dua tale na turaga?</i>



TABLE 2 41 emotion scenarios from Emotion Scenarios 1 (cont.)

	English	Fijian
#	Target Emotion	How would you feel if ...
		<i>E na vakacava beka na vakarau ni lomamu, kevaka ...</i>
15	guilt	... you chopped someone's leg at a community work project?
		<i>... iko taya na yavai dua ena gauna ni tari?</i>
16	surprise	... you were in Lautoka and found a large amount of money?
		<i>... iko a lako I Lautoka ka qai o raica edua nai uma I lavo levu?</i>
17	surprise	... you were reading and a chicken suddenly jumped through the window onto you?
		<i>... o ni a wilitvola tiko beka qai vakasauri na nona lade mai na katuba leka e dua na toa?</i>
18	disappointed	... Fiji lost in the finals of the Rugby World Cup?
		<i>... ena lusi nei Viti ena fainala ni qito levu ni valataki vanua ena rakavi e vuravura?</i>
19	disappointed	... someone promised to buy you a DVD player for your birthday but they lied?
		<i>... a dua a yalataka me volia vei iko na misini ni sara Iyaloyalo ena nomu siga ni sucu qai lasutaki iko?</i>
20	disappointed	... your friend got caught stealing alcohol from the nurse?
		<i>... na nomui tau a tobo mamaca ena nona butakoca na siviriti mai vei nasi?</i>
21	disappointed	... your best friend betrayed a secret?
		<i>... na nomui tau voleka a liumuritaki iko enai tukutuku ka dodonu me drau kila vata ga?</i>
22	annoyed	... a stranger from a nearby village came by and flogged your dog for no reason?
		<i>... a dua na vulagi mai na dua ga na koro vaka-viti toka voleka lako 'voli mai ka mani mokuta na nomu koli sega na kenai balebale?</i>
23	annoyed	... someone asked for everything they saw?
		<i>... e dua e kerea na ka kecega e raica?</i>
24	gratitude	... someone planted all of the unplanted cassava in your garden?
		<i>... edua a tea kece na veibuke ni tav-ioka koya era sa bera ni teivaki tu ena nomui teitei?</i>
25	gratitude	... all of the Bouwaqa people on the mainland bought a boat for the village?
		<i>... era a volia na lewe ni koro o Bouwaqa mai Viti Levu e dua na waqa vei ira e na koro?</i>
26	elevation	... you saw a stranger run into a burning house to save someone else's child?
		<i>... iko raica e dua na vulagi a cici ena dua na vale sa kama tu me vukea na luvei dua tale na tamata?</i>

TABLE 2 41 emotion scenarios from Emotion Scenarios 1 (cont.)

#	Target Emotion	English How would you feel if ...	Fijian <i>E na vakacava beka na vakarau ni lomamu, kevaka ...</i>
27	elevation	... you saw someone stop their work to help an old woman carry firewood across the bridge?	... <i>iko raica e dua me tarova na nona cakacaka me vukea na marama qase ena nona saga me takosotaka na buka enai kawakawa?</i>
28	admiration:	... you saw someone catch a stingray as wide as a man is tall?	... <i>iko raica e dua a vana mai e dua na vai na kena raba e tautauvata kei na balavu ni dua na tagane?</i>
29	admiration	... someone came to the village and you saw them make mats in all of the different styles from around Fiji?	... <i>e dua a lako mai na koro ka oni raica ni talia tiko na veimataqali ibe duidui ena veiyasai Viti?</i>
30	shame	... your tavale picked you up and threw you into the ocean?	... <i>na nomu tavale a keveti iko qai viritaki iko I waitui?</i>
31	shame	... there were visitors in the hall and you accidentally knocked over the tanoa?	... <i>era a tiko na vulagi ena vale vakoro ka qai o caqeta na tanoa?</i>
32	shame	... the elders spoke badly of you at a village meeting?	... <i>era vosa vosa vakacataki iko qase ni koro ena dua na bose vakoro?</i>
33	shame	... your child failed his/her class exam?	... <i>na nomu gone e sega ni pasitaka na veitarogi ena nona kalasi?</i>
34	<i>schadenfreude</i>	... you saw someone you do not like trip and drop their firewood into the creek?	... <i>iko raica e dua iko sega ni dau taleitaka a tarabe ka mani vakalutuma na nona buka e wai?</i>
35	envy	... someone you do not like were the first person in Teci to have internet on their phone?	... <i>edua iko sega ni dau taleitaka ka I matai ni tamata e Teci me tiko na internet ena nona talivoni?</i>
36	outrage	... someone swore at a village elder in your presence?	... <i>dua e vosacataka e dua vei ira na qase ni koro e matamu?</i>
37	outrage	... someone entered your house with a hat on his head?	... <i>edua e curu mai ena loma ni vale ka dara tu ga nai sala e uluna?</i>
38	outrage	... someone took something from a shelf above your head without asking or saying "tilou"?	... <i>edua a tara e dua na ka ena droa ka sega ni bau vakatilou ni oni tabe tiko e ra?</i>

TABLE 2 41 emotion scenarios from Emotion Scenarios 1 (cont.)

		English	Fijian
#	Target Emotion	How would you feel if ...	<i>E na vakacava beka na vakarau ni lomamu, kevaka ...</i>
39	outrage	... someone were caught making homebrewed alcohol in the village?	<i>... a dua e tobo ena nona vakasaqa uburu e loma ni koro?</i>
40	outrage	... someone called out to others from across the village?	<i>... e dua kaci bale mai na dua na mua ni koro ki na dua na tai ni koro?</i>
41	outrage	... someone came to the village but did not perform a sevusevu?	<i>... dua a lako tu ga mai ena loma ni koro ka mani sega ni cakava na nonai sevusevu?</i>

TABLE 3 32 emotion scenarios from Emotion Scenarios 2 interview in Study 1

		English	Fijian
#	Target Emotion	How would you feel if ...	<i>E na vakacava beka na vakarau ni lomamu, kevaka ...</i>
42	pain	... you were tending a fire and got a large burn on your leg?	<i>... iko a kawaitaka na kama ka qai kama sara vakalevu na yavamu?</i>
43	pleasure	... you were receiving a back massage from the best masseuse in the village?	<i>... iko a ciqoma e dua nai veibobo mai vua na dau ni veibobo ena loma ni koro?</i>
44	joy	... you were drinking and signing and dancing at a village soli?	<i>... iko a gunu ka laga sere kei na taralala ena soli vakoro?</i>
45	mirth	... someone told you a great joke?	<i>... e dua talanoataka vei iko e dua nai talanoa lasa?</i>
46	contentment	... you finished all your work for a feast and you just ate a delicious meal?	<i>... o vakaotia kece na nomu cakacaka me baleta na magiti ka kania na kakana vinaka?</i>
47	interest	... saw someone performing a [farming technique/cooking technique] that you do not know?	<i>... mo raica e dua e kitaka e [walewale ni teitei/walewale ni vakasaqa] koya iko sega ni kila?</i>

TABLE 3 32 emotion scenarios from Emotion Scenarios 2 (cont.)

#	Target Emotion	English How would you feel if ...	Fijian <i>E na vakacava beka na vakarau ni lomamu, kevaka ...</i>
48	respect (D)	... the police came to the village after the school was vandalized and they came to your home to ask you questions?	<i>... a lako mai na ovisa ena koro ena kena a vakacacani na koronivuli ka ratou lako mai ena nomu vale metarogi eso na taro?</i>
49	respect (P)	... the best [rugby player/mat weaver] in Fiji came to the village and you were listening to them tell stories?	<i>... na dau [qito rakavi/ tali ibe] ni Viti lako mai ena koro ka qai o vakarorogo tu ena gauna e talanoa tiko kina?</i>
50	pride (D)	... you obtained a high officer position in the military and had influence over military actions?	<i>... iko a taura e dua nai tutu levu ena mataivalu ka kaukauwa sara na kena caka na vakatulewa?</i>
51	pride (P)	... you were the first person in the village to come up with [a beautiful new mat style/an effective new farming technique]?	<i>... iko na matai ni tamata ena koro mo cakava mai na [na loga rairai vinaka ka duatani na kenai cakacaka/ dua nai walewale ni teitei vou?</i>
52	guilt	... you borrowed someone's cherished item and forgot to return it to them before they left the island for the indefinite future?	<i>... iko kerea na nonai yaya vakamareqeti e dua ka o qai guilecava mo vakasuka ni ratou biuta na yanuyanu sega ni kila na gauna era na lesu mai kina.</i>
53	guilt	... you shared the cherished secret of your best friend?	<i>... iko vakaraitaka na nomudrau ka vuni kei na nomui tokani dredre?</i>
54	guilt	... you stole yams from someone's garden during the dry season and no one found out?	<i>... iko butakoca na uvi mai nai teitei nei dua ena gauna ni vulai mamaca ka sega ni dua e raici iko?</i>
55	sadness	... a loved one passed away?	<i>... e dua na wekamu voleka e mate?</i>
56	sadness	... your partner dumped you?	<i>... na nomu daulomani e bera-biutaki iko?</i>
57	despair	... there was a bad drought on Yasawa and both food and water were running out?	<i>... e yaco e dua na draki mamaca levu ka sega kina na kakana ka maca talega na wai?</i>
58	surprise	... someone snuck up behind you on a dark night?	<i>... e dua e vakidacalataki iko ena dua na bogi buto?</i>

TABLE 3 32 emotion scenarios from Emotion Scenarios 2 (cont.)

	English	Fijian
#	Target Emotion	How would you feel if ...
		<i>E na vakacava beka na vakarau ni lomamu, kevaka ...</i>
59	disappointed	... you were hoping that your loved ones would be able to come visit from the mainland, but then they were not able to?
		<i>... iko a vakanuinui tiko me ratou na lako mai na wekamu mai Vitilevu, ka qai sega ni ra yaco rawa mai?</i>
60	disappointed	... Digicel revealed plans to build a cell tower near Teci, but then the project does not happen?
		<i>... e vakaraitaka na nodratoui tuvatuva na Digicel me ratou tara e dua na tower volekati teci, ia ka qai mani sega ni caka nai tuvatuva ya?</i>
61	irritation	... the mosquitoes swarmed while you were trying to sleep?
		<i>... nai binibini namu era vakayavoliti iko ena gauna o sasaga moce kina?</i>
62	irritation	... dogs were barking outside your house at night?
		<i>... era vuki kodro na koli ena yasa ni nomu vale e tuba ena bogi?</i>
63	disgust	... the smell of rotting fish blew into your house during dinner?
		<i>... nai boi ni ika bona e boi mai ena matanivale ena gauna ni vakayakavi?</i>
64	contempt	... a villager did not participate in community work?
		<i>... e dua na lewe ni koro e sega ni vakaitavi ena cakacaka ni koro?</i>
65	contempt	... you saw someone burning the Fijian flag?
		<i>... iko raica e dua e sa vakama na kuila ni Viti?</i>
66	contempt	... a teenager started eating dinner before his parents and their guest?
		<i>... e dua nai tabagone sa tekivu vakayakavi ni se bera ni yaco mai na vulagi sureti?</i>
67	contempt	... a healthy villager never went to church and didn't pray before meals?
		<i>... na kai nakoro qo e tamata bulabula qai sega ni dau lai lotu ka sega ni masu ni bera na kana?</i>
68	disgust	... an adult male and his adult sister were in a sexual relationship?
		<i>... e rau veimoceri erua erua veivekani dina?</i>
69	disgust	... two teenagers wrote graffiti on a headstone in the chiefly cemetery?
		<i>... e rua nai tabagone e volavola vaka-veitalia ena sautabu vakaturaga?</i>
70	disgust	... an indigenous Fijian and an indo-Fijian were married?
		<i>... e dua nai taukei kei na dua na idia erua vakawati?</i>
71	outrage	... everyone in the village observed a tabu on a fishing ground except one man, who went fishing there at night?
		<i>... o ira kecega na lewe ni koro e ra vakamura na tabu ni waitui ka qai vakavo ga e dua, ni'a lako I siwa ekea ena bogi?</i>

TABLE 3 32 emotion scenarios from Emotion Scenarios 2 (cont.)

	English	Fijian
#	Target Emotion	How would you feel if ...
		<i>E na vakacava beka na vakarau ni lomamu, kevaka ...</i>
72	outrage	... a drunk man came home and beat his wife?
		<i>... e dua na dau mateni e lako mai vale ka mokuti na watina?</i>
73	outrage	... someone stole church funds for their own use?
		<i>... e dua e butakoca nai lavo ni lotu me vakayagataka o koya?</i>

dialect and are not listed in several published dictionaries of Standard Fijian (Gatty 2009; Capel 1991). Finally, I aimed to evaluate the utility of a “free list” methodology relative to more contextualized and theory-driven elicitation interviews for the project of cultural domain analysis (Bernard 2006).

In each of these interviews, I used several constructions involving the term *loma-* to translate “feeling” in a way intended to capture both attitudes and emotions. Generally, *loma-na* can be translated as “inside” or “middle”, and is used in a range of contexts to refer to the inside of a place (e.g., *loma ni vale*, “in the house”) or the middle of an expanse or range (e.g., *loma ni bogi*, “middle of the night”). In Fijian ethnopsychology, *loma-na* refers to a person’s insides, and specifically the wellspring of their thoughts, desires, and decisions. One recent dictionary translates *loma-na* as “spirit, will, attitude, mind” (Gatty 2009). The concept is textured very much like the Samoan concept of *loto*, which means “depth” (Gerber 1985), and the Tongan cognate *loto*, which means “inside” (Morton 1996), both of which can refer to aspects of mind and feeling, and can be modified to refer to episodic states or enduring dispositions. The possessive *lomamu* means “your insides”, while *lomamuni* means “their insides”. One can refer to the state of someone’s insides by referring to *vakarau ni lomamuni* (“the way of their insides), or metaphorically the “path” of their insides (*na sala e dau lomamuni*). *Loma-* can also be combined with diverse descriptors to characterize someone’s behavioral and emotional dispositions, *itovo*, *ivalavala*, or *ivakarau*; each refers to both short-term behavior and enduring temperament, as the former is a clue to the latter, and characterizing one’s “insides” can be used to explain both. For example, *solu* means “give”, *lomasolu* “generous”, while *katakata* means “hot”, and *loma-katakata* “hot tempered” (or quick to anger). A similar concept to *loma* is *yalo*, translated as “spirit, mind, emotion

or temperament, soul, ghost" (Gatty 2009); in Ch.3, I use *yalokatakata* to measure "hotheadedness".

A difference between Interview 1 and Interview 2 is that in the Freelist I asked how a Fijian might feel *towards* another person (... *vei so tale na tamata*), and in the Attitude Targets interview I asked how a Fijian tends to feel *about* a specific kind of person (... *me baleti ira na ...*). The former could apply to emotions or attitudes, while the latter implies an enduring evaluation. Both the Attitude Targets interview and the Emotion Scenarios interviews asked about the "way of [their/your] insides", the former with reference to specific people, the latter specific events.

### 3 Study 1 Methods

Four lexicon elicitation interviews were conducted along with other interviews during ten months of fieldwork (June–July 2009, June–August 2010, and January–June 2011). All were conducted by a trained research assistant fluent in English and Standard Fijian, and were conducted in Standard Fijian. I was present during almost all of the interviews. We conducted all four interviews with Indigenous iTaukei participants from two villages on Yasawa Island that together have a population of around 200. These two villages share a *yavusa* (a formally recognized land-holding "tribe" with one Chief) and are a 15-minute walk from one another. I selected participants from a randomized list of all adult villagers present in the villages at the time of the interviews, with an effort made to balance male and female participation and to select a different sample for each interview. Participants were recruited with a short description of the study, an estimate of its time to completion, and an offer to conduct the interview later if the current moment was impractical. We made clear that non-participation, or ending the interview early, would not be a problem. We offered no compensation for these interviews. All interviews were conducted face-to-face in private, usually sitting on the floor of the participant's own home.

#### 3.1 *Interpersonal Affect Free List*

Villagers (N = 10, M age = 44 ± 13y) were invited to participate in a 15-minute interview in which we would ask them "about the various ways in which a Fijian might feel towards other people" (*me baleta nai vakarau ni yalodra nai Taukei vei ira na veitamata tale eso*). We made clear that their answers would not have to reflect how they personally felt or acted towards specific others.

We first asked participants, “What are all the ways in which a Fijian might feel towards another person?” (*Na cava kece na sala e dau lomamuni nai taukei vei so tale na tamata?*). Once they finished their listing, we asked, “Are there any additional ways of feeling towards someone?” (*E tu tale eso na sala ni lomamuni vei dua tale?*), until they replied “no”.

### 3.2 *Attitude Targets Interview*

Villagers ( $N = 8$ ,  $M$  age =  $36 \pm 10.5y$ ) were invited to participate in a 15-minute interview in which we would ask them “how Fijians tend to look at various people” (*me baleta na nomuni rai nai Taukei me baleta na veimataqali Tamata yadudua*). We again made clear that their answers would not have to reflect how they personally felt or acted towards others, but instead how Fijians tend to view certain kinds of people. We asked participants a series of 24 questions with the frame, “How do Fijians tend to feel towards [person]?” (*E dau vakacava nai vakarau ni lomamuni nai Taukei me baleti ira na [person]?*), where [person] was 24 different local statuses, roles, relations, or character traits (see Table 1). These 24 targets were selected from dictionaries and ethnographic experience to cover a range of social-relational costs, benefits, and institutions (such as a Chief, different classificatory cousins, a diligent person, a liar, an enemy, etc.). The order of presentation of the 24 targets was separately randomized for each participant.

### 3.3 *Emotion Scenarios 1*

Villagers ( $N = 8$ ,  $M$  age =  $38 \pm 15.3y$ ) were invited to participate in a 20-minute interview in which we would ask them “how [they] would feel as a result of different events” (*me baleta e vakacava na nanuma ni lomamu e na ka e rawa ni yaco*). We made clear that the scenarios were hypothetical events that may not have happened to the participant, and that they could report how they think they would feel were it to happen to them. We asked participants a series of 41 questions with the frame, “How would you feel if [event]?” (*E na vakacava beka na vakarau ni lomamu, kevaka [event]?*), where [event] was 41 locally-relevant events (see Table 2). These events were selected to conform to the documented or hypothesized appraisal criteria of a range of hypothesized emotions, including putative basic emotions (e.g., ‘anger’, ‘sadness’, ‘happiness’, ‘fear’, ‘surprise’, ‘disgust’, ‘contempt’ [Ekman & Friesen 1986]; ‘pride’ [Tracy & Robins 2008]; ‘shame’ [Fessler 2004]), emotions thought not to be lexicalized in the Pacific (e.g., ‘guilt’; Levy 1973), and theoretically interesting affects subject to little research to date, including ‘gratitude’ (Algoe et al. 2008), ‘elevation’ (Schnall et al. 2010), ‘admiration’ (Algoe & Haidt 2009), ‘envy’ (van de Ven et al. 2009),



and 'schadenfreude' (van Dijk 2006). The order of presentation of the 41 questions was separately randomized for each participant.

### 3.4 *Emotion Scenarios 2*

Villagers (N = 10, M age = 50 ± 14.5y) who had not participated in Emotion Scenarios 1 were recruited and interviewed according to the same protocol, except that 32 new scenarios were used. These scenarios were selected to explore a range of potential emotion gradients (e.g., 'joy', 'contentment', 'despair', 'irritation', 'disappointment'), simple affects (e.g., 'pain', 'pleasure', 'interest'), as well as theoretically interesting distinctions such as prestige- versus dominance-based respect and pride (Henrich & Gil-White 2001; Tracy & Robins 2007; Holbrook et al. in press), contempt, anger, and disgust (the "CAD Triad"; Rozin et al. 1999), and different kinds of disgust (Rozin et al. 1994; Tybur et al. 2009). The order of presentation of the 32 questions was separately randomized for each participant.

### 3.5 *Study 1 Results*

Interviews 1–4 generated a range of responses that varied from one-word answers to multi-sentence explanations. Responses were processed and sorted according to their core concepts, which totaled around 185 across the interviews. Of these, many were behaviors (e.g., 'help' [*yukei*], 'jump' [*lade*], 'strike' [*moku*]) or emotional expressions (e.g., 'smile' [*mali*], 'cry' [*tagi*], 'laugh' [*dredre*]). However, many of the most frequent responses across the interviews were apparent emotions or affective evaluations – terms such as 'happy' (*marau*), 'shame' (*madua*), 'hate' (*sevaka*), and 'love' (*lomani*), that referred specifically to states of one's "insides" (*loma-na*), as distinct from "behavior" or "character" (*itovo*, *ivalavala*, *ivakarau*). The freelist, attitude target, and first emotion scenarios interviews each yielded roughly equal numbers of unique putative affect terms (23, 24, and 22, respectively), while the second emotion scenario interview, designed to tap hypothesized affects absent from previous response sets, generated an additional 47 unique terms.

The elicitation interviews varied in the kinds of responses they elicited; the most frequently elicited terms within the different interviews were distinct sets of terms. Looking at the terms with a z-score frequency around 1 or greater (i.e., a frequency greater than one standard deviation above the average frequency of terms within an interview), the most frequent Free List terms (Interview 1) were a mix of putative attitudes and emotions, including attitudes like 'love' (*lomani*), 'hate' (*cati*), and 'do not like' (*sega ni taleitaka*), and emotions such as 'concern' (*kauwai*), 'happy' (*marau*), and 'jealous' (*vuvu*). However, the most

common terms in the Attitude Target interview were exclusively putative attitudes (e.g., ‘hate’ [*sevaki, cati*]) or ways of viewing another (e.g., ‘look up to’ [*raici ira sobu*]). In contrast, seven of the eight most common terms from the two Emotion Scenarios interviews were putative emotions (e.g., ‘anger’ [*cutdru*], ‘anxiety’ [*taqaya*]), with ‘do not like’ (*sega ni taleitaka*) being the exceptional attitude (see Table 4 for most common terms). Five of the six terms elicited by all four interviews were putative attitudes: ‘hate’ (*cata, sevaka*), ‘love’ (*lomani*), ‘like’ (*taleitaka*), and ‘do not like’ (*sega ni taleitaka*), with ‘happy’ (*marau*) the one ubiquitous emotion.

Of the terms selected for further investigation in subsequent interviews (see discussion below), the Free List interview contributed only two unique terms, the Attitude Targets interview contributed three terms, and the Emotion Scenarios 1 interview contributed only one term. In contrast, the Emotion Scenarios 2 interview contributed 10 unique terms that were explored in later interviews, including both Yasawan terms, *borisi* (‘anger’) and *mataku* (‘fear’). Nonetheless, the interviews each elicited roughly equal numbers of terms that i) were elicited by at least one other interview, and that ii) were explored in the characterization interviews (15, 14, 19, and 16 common terms, respectively). 16 of the 40 terms targeted in subsequent interviews arose in at least three of the four elicitation interviews.

Note that here I do not present data on the association of specific terms with targets and events, nor data on the dissociation of terms by their associated events. A preliminary analysis of such data were presented elsewhere (Gervais & Fessler 2010), and more formal analyses are ongoing.

### 3.6 Study 1 Discussion

The primary goal of the lexicon elicitation tasks was to make explicit the set of concepts that Yasawans use to think about and talk about social affects and evaluations. This goal was achieved. The different elicitation methods each contributed something to the project – the free list provided a sense of the most salient and frequently used terms, while the Attitude Targets and Emotion Scenarios interviews used specific frames that elicited distinct sets of terms, including those that are associated with rare events or kinds of people. The free list proved inadequate to elicit the full range of Yasawan feelings.

Although all interviews were conducted in Standard Fijian, contextualized questions about events nonetheless elicited terms from the Yasawan dialect: *mataku* (‘fear’), *borisi* (‘surprise’), and *kusariko* (‘surprise’). Informal follow-up questioning with villagers indicated that there were no other Yasawan terms referring to one’s “insides”, suggesting that use of Standard Fijian was not a major limitation of the present study. Indeed, it was arguably necessary given

TABLE 4 Most common terms elicited by each interview in Study 1

Free list	Freq	z	Attitude targets	Freq	z
<i>kauwai</i> ('concern')	5	3.59	<i>lomani</i> ('love')	25	4.31
<i>loloma</i> ('affection/pity')	5	3.59	<i>rokovi</i> ('respect')	21	3.5
<i>marau</i> ('happy')	5	3.59	<i>sevaki</i> ('hate')	17	2.69
<i>cati</i> ('hate')	4	2.59	<i>sega ni taleitaka</i> ('don't like')	14	2.08
<i>vinakata</i> ('want')	4	2.59	<i>taleitaka</i> ('like')	13	1.87
<i>vuvu</i> ('envy')	4	2.59	<i>cati</i> ('hate')	9	1.06
<i>cudru</i> ('anger')	3	1.59	<i>raici ira sobu</i> ('look down on')	9	1.06
<i>lomani</i> ('love')	3	1.59	<i>raici ira cake</i> ('look up to')	8	0.86
<i>sega ni taleitaka</i> ('don't like')	3	1.59			

Emotions Scenarios 1 & 2	Freq	z
<i>marau</i> ('happy')	148	5.88
<i>rarawa</i> ('upset')	84	3.13
<i>cudru</i> ('anger')	73	2.67
<i>sega ni taleitaka</i> ('don't like')	42	1.65
<i>mosi</i> ('pain')	35	1.13
<i>madua</i> ('shame')	44	1.08
<i>taqaya</i> ('anxiety')	33	0.98
<i>lomalega</i> ('worry')	20	0.86

Light gray designates a putative emotion, dark grey designates a putative attitude. Results from the emotion scenarios interviews are shown with aggregate frequencies and average z-scores across the two interviews.

the linguistic diversity of a Yasawan village. Several terms were elicited (such as *ninivaka*, 'angry') that are neither Standard Fijian nor Yasawan, but part of a communalect from elsewhere in Fiji that is the first language of someone married into Yasawa.

Together the elicitation interviews generated a broad range of terms – many more, in fact, than could be systematically probed for form and function. I arrived at term meanings through a combination of discussion with villagers, discussion with research assistants, dictionary consultation, and investigation of the targets and scenarios that elicited the terms. I sought to focus on terms that referred to the “way of someone’s insides” while excluding terms the meaning of which was most nearly an action or a character trait (*itova*,

*ivalavala, ivakarau*). I also aimed to include as broad a set of affect terms as possible. This meant including potentially illuminating near-synonyms, Yasawan terms with likely synonyms, infrequent yet theoretically interesting terms, and terms/phrases that may not have been strictly affective but which I had reason to believe would illuminate other terms (such as ‘look down on’, *raici ira sobu*). Rather than exclude all synonyms (*sensu* Lutz 1982), I included sets of closely related terms in proportion to the number of terms that appeared in that set. I reasoned that the more terms there were to discuss processes in a given domain (such as danger), the more important were practical distinctions in that domain in the lives of villagers, and hence the more interested I should be in them. I also conducted a pilot card-sort task including 39 terms preliminarily deemed to be about someone’s “insides” (*loma-na*) instead of their “behavior” (*itovo*) (Gervais & Fessler 2010). Subsequent inquiry into the terms included in the pilot sort revealed several to be inappropriate for my purposes (e.g., *loma vinaka*, ‘good insides’ and *loma ca*, ‘bad insides’, are character attributions not descriptions of feeling; *rokova*, ‘show respect’, and *besetaka*, ‘reject’, are behaviors; *katakata*, ‘hot’, on its own is only loosely a metaphor for anger; *ninivaka*, ‘angry’, is used only by a few villagers from the Rewa region of Viti Levu). I had also left out *lomani*, ‘love’, and several terms related to ‘sadness’ that emerged only in the second Emotion Scenarios interview (*lomabibi*, “heavy-hearted”, and *luluwu*, ‘sadness’).

Frequency across the interviews was another heuristic for inclusion. For example, I included 17 of the 19 most common terms across the interviews, excluding only *ca* (“bad”) as a general descriptor, and *rokova* (‘to show respect’) as a behavior. I also included three terms that did not arise in any of the elicitation interviews (*dīva*, ‘to long for’; *lomalomani koya*, ‘self-pity’; and *qoroi koya vakaikoya*, ‘self-amazement’) as they were theoretically interesting. I was left with 40 terms to include in subsequent characterization interviews focused on how Yasawans conceptualize their emotional experience.

The probabilistic dissociation of terms used to describe how one “feels about someone” (Attitude Targets) and how one “would feel if something happened” (Emotion Scenarios) maps onto the proposed distinction between attitudes as person-specific representations and emotions as embodied responses to events. In addition, the terms that were used most frequently in the Attitude Targets interview have existing translations as putative English attitudes – “love” (*lomani*), “respect” (*dokai*), “like” (*taleitaka*), “contempt” (*beci*), and “hate” (*sevaka, cati*). The concepts underlying these terms appear to be a principal medium for describing evaluations of other people. While Study 2 will contextualize the meanings of these terms through a card sort task, Study 3 will

test their pragmatic and functional role in determining emotional responses to events involving other people when only one's "feelings about" them is known.

#### 4 Study 2: Affect Lexicon Structure

Study 2 was a card sort task designed to reveal the domain structure of the terms elicited in Study 1, in particular the similarities and differences Yasawan villagers themselves find salient among terms in their affect lexicon (Bernard 2006; Coxon 1999). Participants freely sorted 40 affect terms into piles according to the instruction, "Put those cards together that you think go together" (*ka biu-vata nai mau koya iko nanuma ni ra lako vata*). We also asked participants why the cards in each pile went together, and which card was the best example of each pile (see Table 5 for the list of the 40 terms).

##### 4.1 Study 2 Methods

Thirty Indigenous iTaukei Fijians (16 male,  $M$  age = 41.6y  $\pm$  15.1y, range = 21y–72y) from one village of around 200 people participated in the open-ended card sorting task. I drew this sample from a village not employed in any of the other affect lexicon interviews. First, comparing the results of this sort to those of a pilot card sort conducted in the first villages (reported in Gervais & Fessler 2010) gives some idea of how widely the affect lexicon results can be generalized – potentially to the island level. Second, the village sampled for the second sort is the same village in which RICH economic games were run (see Gervais, 2017), but in which no lexicon elicitation interviews were conducted. This card sort task provides insight into the village-level meanings of the attitude terms used in that study, and it was run eight months and one visit prior to the dyadic Attitude Rating interviews and RICH economic games (see Ch. 3).

Villagers were invited to participate in a 30-minute interview about which we said, "We would like to show you some cards that have the names of emotions on them, and ask you to arrange them according to their meaning" (*Keitou na via vakaraitaka vei kemuni eso nai mau ka volai tu kina eso nai vakarau ni lomada, ka na vakaraitaki vei iko moni tuvana enai tuvatuva me veiganiti na kenai balebale*). Participants were assured that there were no right or wrong answers, and that we were only interested in what the words meant to them. We made clear that non-participation, or ending the interview early, would not be a problem. We offered no compensation for this interview. All interviews were conducted face-to-face in private, usually sitting on the floor of the participant's own home.

TABLE 5 40 Standard Fijian and Yasawan terms used in the open card sort task in Study 2

Fijian	English
<i>Beci</i>	contempt
<i>Borisi</i>	anger; <i>Yasawan</i>
<i>Cata</i>	hate
<i>Cudru</i>	anger
<i>Diva</i>	longing
<i>Dokadokai koya</i>	pride
<i>Dokai</i>	respect
<i>Domobula</i>	terror
<i>Domona</i>	desire, lust
<i>Kauwai</i>	concern, interest
<i>Kidacala</i>	surprise
<i>Loloma</i>	affection, pity
<i>Loma bibi</i>	heavy-hearted
<i>Lomaleqa</i>	worry
<i>Lomalomani koya</i>	self-pity
<i>Lomani</i>	love
<i>Luluvu</i>	sadness
<i>Madua</i>	shame, embarrassment
<i>Malaude</i>	excitement
<i>Marau</i>	happy
<i>Mataku</i>	fear; <i>Yasawan</i>
<i>Mosi</i>	pain
<i>Nuiqawaqawa</i>	anxious
<i>Qoroi</i>	admiration, amazed
<i>Qoroi koya vakaikoya</i>	arrogance
<i>Raici koya cake</i>	look up to
<i>Raici koya sobu</i>	look down to
<i>Rarawa</i>	upset, inner anger
<i>Reki</i>	joy
<i>Rere</i>	fear
<i>Ririko</i>	apprehensive
<i>Sega ni dokai</i>	no respect
<i>Sega ni kauwai</i>	indifference
<i>Sega ni marau</i>	not happy
<i>Sega ni taleitaka</i>	don't like

TABLE 5 40 Standard Fijian and Yasawan terms (*cont.*)

Fijian	English
<i>Sevaka</i>	hate
<i>Taleitaka</i>	like
<i>Taqaya</i>	anxious
<i>Vakasisila</i>	disgust
<i>Vuvu</i>	envy, jealousy

The 40 terms were printed in 28-point font on labels affixed to index cards cut to the size of the label, approx. 1" × 2.5". We shuffled the cards before each interview. We next asked participants to read through all of the cards and indicate any words that were unfamiliar, written incorrectly, or otherwise raised questions. Few questions arose. Next, we gave participants these instructions:

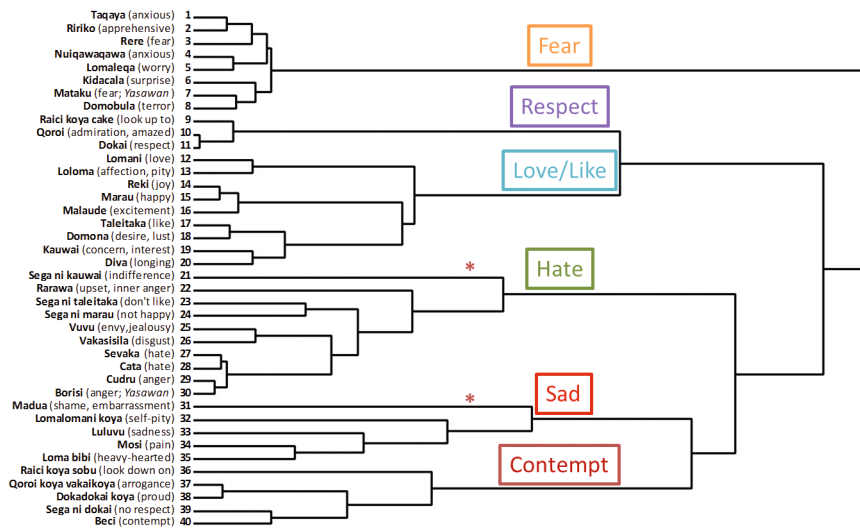
"We would now like you to arrange these cards into piles, putting those cards together that you think go together. You can group the cards in any way that seems natural to you. You can create as many or as few piles as you like, and each pile can have as many or as few cards as you think belong in that pile. You are free to rearrange the cards and piles until you find an arrangement that seems right to you. Each card can be placed in only one pile." *Keitou na via tuvana nai mau mei binibini, ka biuvata nai mau ko nanuma ni ra lako vata. Iko rawa ni tuvana nai mau enai walewale ga e donu vei kemuni. Iko rawa ni cakava na kena levu ga, se vica nai binibini iko vinakata, ka dua nai binibini e rawa ni tiko kina e levu se vica nai mau iko nanuma ni wili e na dua nai binibini. Tu vei iko na galala mo tuvana tale nai mau ka binia me yacova ni ko sa kunea nai tuvatuva e donu vei iko. Ia, dua nai mau e rawa ni biu kina dua ga nai binibini.*

After recording the final arrangement, we asked participants two additional questions about each pile:

- 1) "Why do these feelings go together?" (*Na cava na vuna e lako vata kina nai vakarau ni lomada oqo?*).
- 2) "Which card is the best example of the content of this pile?" (*Nai mau cava e i vakaraitaki vinaka e nai leweni binibini oqo?*)

#### 4.2 Study 2 Results

An average-linkage hierarchical cluster analyses (HCA) of the 40-term open pile sort (a dissimilarity matrix of the total number of times terms were piled



**FIGURE 1** Dendrogram of a hierarchical cluster analysis of Yasawan affect terms  
 A dendrogram of a hierarchical cluster analysis (HCA) of the 40 terms sorted into unconstrained piles based on similarity by N = 30 Yasawan villagers. The linkage method used is average-linkage, applied to a dissimilarity matrix of the total number of times terms were sorted into separate piles. Linkage distance scales with dissimilarity.

together across participants) produced six distinct clusters (see Figure 2.01). I heuristically refer to these as “fear”, “hate”, “contempt”, “sadness”, “love/like”, and “respect”. Participants overwhelmingly justified their piles by referring to a shared set of antecedents among the terms, either in one’s own experience or behavior, or in the behaviors and traits of others. Some reference was also made to common behavioral outcomes (e.g., for “hate”), shared phenomenology (especially for “fear” and “love/like”), and the appropriateness or social consequences of having the feelings in a pile (especially for “hate” and “contempt”).

The most distinct cluster was “fear”, so called because it included terms for ‘fear’ (*rere*, *mataku*), ‘terror’ (*domobula*), ‘anxiety’ (*taqaya*, *ririko*, *nuiqawaqawa*), ‘worry’ (*lomaleqa*), and ‘surprise’ (*kidacala*). Of these terms, *ririko* (‘anxiety’) was most often nominated as the best example of its pile (23%), and *rere* (‘fear’, 20%) was a close second. Reasons for piling together the terms in this cluster included common antecedents such as unexpected events (*yaco vakasauri*), bad news (*tukutuku ca*), accidents, uncontrollable dangers (such as hurricanes and tsunamis), and failures to meet the expectations of others. A number of participants also made reference to concomitant confusion (*veilecayaki ni vakasama*) or being unsettled (*sega ni vakadeitaki*).



The next split cleaved the “hate”, “contempt” and “sadness” clusters on the one hand from the “love/like” and “respect” clusters on the other. Among these “hate” was the most distinct, and included three sub-clusters: 1) ‘hate’ (*cata, sevaka*) and ‘anger’ ( *cudru, borisi*), 2) ‘disgust’ (*vakasisila*) and ‘jealousy/envy’ (*vuvu*), and 3) ‘unhappy’ (*sega ni marau*) and ‘don’t like’ (*sega ni taleitaka*). ‘Upset’ (*rarawa*) and ‘indifference’ (*sega ni kauwai*) also cleaved with the “hate” cluster, though these latter two terms were the most distinct terms in the cluster. Among all these terms, *sega ni taleitaka* (‘do not like’) was most often nominated as the best example of its pile (23%), while *sega ni kauwai* (‘indifference’, 20%) and *sega ni marau* (‘unhappy’, 17%) followed. Among the terms in the first sub-cluster, *sevaka* (‘hate’, 13%) was the most common exemplar. Reasons for piling together the terms in this cluster included shared antecedents such as someone doing something bad to oneself (*dua na ka ca e caka vei au*), disagreement (*veicalati ni veivosaki*), and bad news, and shared behavioral outcomes, such as pushing away (*besetaka*). Participants also suggested that these feelings are not good to feel, for example they “tell the life of someone who is not good” (*e tukuna na bula ni tamata e sega ni vina*). For piles labeled with *sega ni kauwai* (‘indifference’) specifically, a few participants mentioned someone who thinks only of himself (*dau nanuma koya ga*) and does not think of others (*sega ni dau veinanumi*).

The “sadness” cluster included terms for ‘sadness’ (*luluvu*), ‘heavy-hearted’ (*loma bibi*), ‘pain’ (*mosi*), ‘self-pity’ (*lomalomani koya*), and ‘shame’ (*madua*), although the latter was the most distinct single term in any cluster; it was only slightly closer to the “sadness” cluster than to the “contempt” cluster. *Madua* (‘shame’) was most often selected as the best example of its pile (37%), followed by *lomalomani koya* (‘self-pity’, 30%) and *luluvu* (‘sadness’, 23%). Reasons for piling together the terms in this cluster included common antecedents such as the death of a friend (*itokani*) or relative (*weka*), a problem (*leqa*), one’s own departure from others, and being left out (*biliraki*). For piles labeled with *madua* (‘shame’) in particular, participants described antecedents such as doing something bad, and “changing the views of others towards oneself” (*veisautaka na nanuma ni tamata me baleti au*).

The “contempt” cluster included sub-clusters for 1) ‘contempt’ (*beci*) and ‘no respect’ (*sega ni dokai*), and 2) ‘pride’ (*dokadokai koya*) and ‘arrogance’ (*qoroi koya vakaikoya*), as well as the idiom ‘look down on’ (*raici koya sobu*). *Sega ni dokai* (‘no respect’) was the most common pile exemplar from this cluster (17%), followed by *beci* (‘contempt’, 13%). Reasons for piling together the terms in this cluster included their describing the attitude of someone who is wealthy (*rawati, vutuni yau*), has a title (*tutu*) or good education (*vuli vinaka*), or who is

bad. Participants also said that people who are left out are viewed this way, and that such terms can be used to describe someone who “brings themselves up” (*dau kauta ira cake*) and thinks only of themselves (*nanuma ga me o koya ga*).

The “respect” cluster was the smallest and most integrated of the six clusters, and included terms for ‘respect’ (*dokai*) and ‘admiration’ (*goroi*) (the two most closely linked terms in any cluster), as well as the idiom ‘look up to’ (*raici koya cake*). *Dokai* (‘respect’) was the most common pile exemplar from this cluster (40%). Reasons for piling together the terms in this cluster included shared antecedents such as another’s good behavior (*tovo vinaka*), chiefly behavior (*tovo vakaturaga*), title (*tutu*), achievements (*rawata*), and many possessions (*levu na ka*).

The “love/like” cluster included three sub-clusters: 1) ‘love’ (*lomani*) and ‘affection/pity’ (*loloma*), 2) ‘happy’ (*marau*), ‘joy’ (*reki*), and ‘excitement’ (*malaude*), and 3) ‘like’ (*taleitakai*), ‘desire’ (*domona*), ‘interest/concern’ (*kauwai*), and ‘longing’ (*diva*). The most common pile exemplar in this cluster was *loloma* (‘affection/pity’, 70%), followed by *reki* (‘joy’, 23%) and *marau* (‘happy’, 20%). Reasons for piling together the terms in this cluster included shared antecedents such as another’s good behavior, generosity (*solia*), “good heart” (*yalo vina*), and chiefly behavior (*tovo vakaturaga*), as well as positive events involving oneself, such as Christmas, achievement, and seeing objects that are wanted or desired. While many participants mentioned things that make one happy (*vakamarautaki*), several people mentioned seeing things that “struck their insides” (*lauta na yalo*), such as another’s problems, especially when *loloma* (‘affection/pity’) was the exemplar given.

The six clusters obtained from hierarchical cluster analysis were replicated as a two-dimensional solution using multidimensional scaling (MDS) with classical normalization, stress loss criterion, and L2 dissimilarity computation (stress = 0.19, dilation factor = .77, Procrustes P = 0.11) (see Figure 2.02). As in the HCA, the terms *madua* (‘shame’) and *sega ni kauwai* (‘indifference’) were the most distinct and fell between clusters in the two-dimensional space – ‘shame’ between “sadness” and “hate”, and ‘indifference’ between “hate” and “contempt”. Conventionally, a two-dimensional solution with stress below 0.2 is deemed adequate and maximally interpretable (Clarke 1993). However, as should be expected, higher-dimensional solutions did produce results with less stress: three dimensions (stress = 0.11), four dimensions (stress = 0.065), five dimensions (stress = 0.035), six dimensions (stress = 0.023), and seven dimensions (stress = 0.015). Interestingly, each added dimension effectively picked out, in order of their size and distinctiveness, a different cluster from the HCA and 2-dimensional MDS. In a six-dimensional solution, the first dimension juxtaposed the Love/Respect clusters and the Hate/Contempt clusters; the second

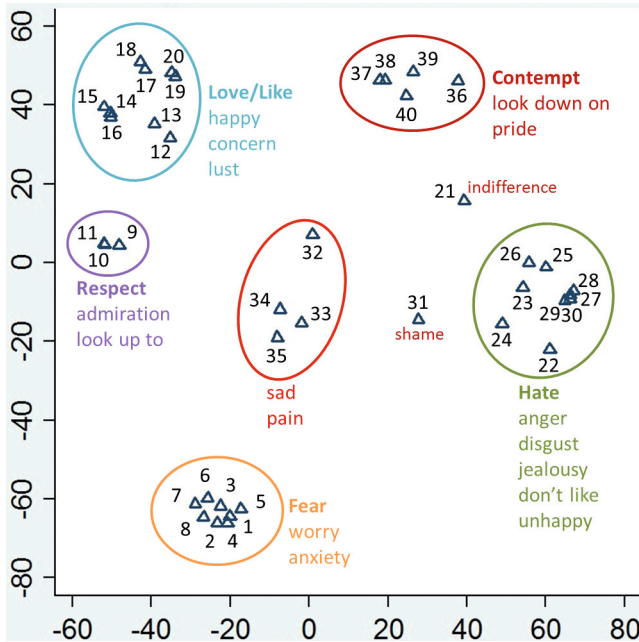


FIGURE 2 First two dimensions of a multidimensional scaling of Yasawan affect terms  
 A multidimensional scaling (MDS) plot of the 40 terms sorted into unconstrained piles based on similarity by N = 30 Yasawan villagers, with classical normalization and L2 dissimilarity computation. The number labels correspond to those on the HCA dendrogram in Figure 2.01.

dimension pulled the Fear cluster off of that dimension; the third dimension juxtaposed the Contempt cluster to the first dimension; the fourth dimension pulled off the Sadness cluster; the fifth dimension pulled off the Respect cluster; and the sixth dimension distinguished the Love and Like sub-clusters. A seventh dimension appeared to distinguish the ‘longing’ and ‘concern’ terms from the ‘happiness’ terms within the Love/Like cluster.

An exploratory factor analysis of the dissimilarity matrix from Study 2 revealed five factors with Eigenvalues greater than 1. Term loadings on these factors mirrored the higher-dimensional solutions with MDS, in which positive loadings for terms in the Love/Like cluster co-occurred with low loadings of terms in each of the other clusters: the Hate cluster (Factor 1; Eigenvalue = 14.07, 35.2% of variance explained), the Fear cluster (F2; E = 10.91, 27.3% of variance), the Contempt cluster (F3; E = 5.87, 14.7% of variance), the Sadness cluster (F4; E = 4.05, 10.1% of variance), and the Respect cluster (F5; E = 2.51, 6.3% variance).

### 4.3 Study 2 Discussion

Yasawan Fijians appear to conceptually organize their affective experience primarily according to the relational contexts and implications of different feelings. For example, ‘affection/pity’ (*loloma*), ‘concern/interest’ (*kauwai*), and ‘longing’ (*diva*) all clustered with the positive relational evaluations ‘love’ (*lomani*) and ‘like’ (*taleitaka*) as they tend to follow from them within relationships, even though hedonically they may be closer to the terms in the “sadness” cluster. There were also suggestions of categorization based on the social sanctioning of different feelings. These results fit with other studies of affect in the Pacific (e.g., Lutz 1982 in Iflauk; Gerber 1985 in Samoa), and stand in contrast to the results of studies of English speakers that emphasize introspective valence and arousal (e.g., Russell 1980). To be sure, however, some participants did suggest that the terms in the “fear” cluster shared phenomenological correlates like “confusion” and “uncertainty” in addition to shared antecedents. This suggests that introspective dimensions are not unrecognized by Yasawans even if they are not a primary mode of emotional awareness (see Gerber 1985 for a similar argument).

This card sort produced six clusters: “fear”, “hate”, “contempt”, “sadness”, “love/like”, and “respect”. These results are qualitatively similar to an earlier pilot sort, with a sample from a different village, that included only partially overlapping terms (Gervais & Fessler 2010) (see p7 for discussion). However, there was one significant difference: including two terms roughly meaning ‘sad’ (*luluvu* and *lomabibi*, ‘heavy-hearted’) in this Study 2 produced a sixth cluster (“sadness”) that pulled ‘pain’ (*mositi*) and ‘self-pity’ (*lomalomani koya*) off of the “love/like” cluster, and ‘shame’ (*madua*) off of a space between the “hate” and “contempt” clusters. That terms from the “love/like” cluster relocated to a “sadness” cluster reinforces the salience to Yasawans of the relational contexts of emotions – “sadness” was associated with “love” (see Lutz 1988), until there were sufficient terms to compose a cluster that could be labeled “problems in valuable relationships”. Nonetheless, the general robustness of these results to different sets of terms – especially the replication of the first five clusters – reinforces the distinct salience of these clusters in Yasawan experience.

In their similarity judgments, Yasawans draw clear distinctions between different ways of “feeling about” someone (e.g., ‘contempt’, ‘hate’, ‘respect’, ‘love’, ‘like’) and the implications of these views for feelings and action within a relationship – for example, caring about someone versus rejecting them, and longing for someone versus not caring about them. In fact, the clustering of all 40 terms appeared to be anchored by these putative attitudes. Only the “fear” and “sadness” clusters lacked clear attitudinal anchors. Note, however, that *rere*

(‘fear’), one of the key terms in the “fear” cluster, often appeared in Study 1 in an adjectival form *rerevaki* (‘scary’) and a verbal form *rerevaka* (to fear someone or something) – both suggestive of attitudinal concepts applied to people or things that evoke fear. In addition, given the presence of *madua* (‘shame’) and *lomalomani koya* (‘self-pity’) in the “sadness” cluster, it is not a stretch to implicate an attitude towards self in this cluster – a representation akin to “self-esteem” that tracks one’s own standing in a social arena (Leary 2005), or specifically in this case, low standing resulting from problems in valued relationships.

Additional insight into the conceptual organization of Yasawan affect comes from the multidimensional scaling data. The two dimensions of the MDS solution may be most profitably interpreted in line with White (1980) as *solidarity/conflict* (from upper left to lower right; from “love/like” and “respect” to “hate” and “fear”), and *dominance/submission* (from upper right to lower left; from “contempt” to “fear” and “respect”). These dimensions have been widely replicated in other domains of social cognition (Abele et al., 2021). The existence of hedonically negative terms in the “love/like” cluster, and a hedonically positive term (e.g., ‘pride’, *dokadokai koya*) in the “contempt” cluster, undermines any claim to a valence dimension, while high-arousal terms in every cluster – ‘excitement’ (*malaude*) in “love/like”, ‘amazement/admiration’ (*qoroi*) in “respect”, ‘shame’ (*madua*) in “sadness”, ‘pride’ (*dokadokai koya*) in “contempt”, ‘anger’ (*cutru*) and ‘disgust’ (*vakasisila*) in “hate”, and ‘terror’ (*domobula*) in “fear” – undermines any claim to an arousal dimension. Instead, salient dimensions of social relationships – from Love and Respect to Hate and Fear (*solidarity/conflict*), and from Contempt to Fear and Respect (*dominance/submission*) – plausibly characterize the conceptual structure of Yasawan affect terms (White 1980; see also Fiske 1991; Cuddy et al. 2007). Both communalism and hierarchy are hypercognized dimensions of social relationships in Fiji (Sahlins 1962; Toren 1990), and this patterning of relationships appears to pattern understanding of affect as well. However, as the higher-order MDS and factor analysis results suggest, a two-dimensional solution obscures the uniqueness of each of the six clusters that emerged from the HCA. For example, while ‘love’ (*lomani*) and ‘respect’ (*dokai*) have overlapping roles in reinforcing social solidarity in a Fijian village, their relational contexts and implications can be quite different – ‘love’ undergirds communalism and sharing, while ‘respect’ reinforces hierarchy, precedence, and influence (Sahlins 1962; Ravuvu 1983; Toren 1990). Preliminary analyses of the dissociation of attitudes across Targets in Interview 2 substantiates the different if overlapping functions of Love and Respect, Hate and Contempt, Sadness and Fear (see Gervais & Fessler 2010).

The sorting of affect terms in Study 2 provided some suggestion of a conceptual linkage among feelings that are causally related to one another. For example, ‘happiness’ (*marau*), ‘affection/pity’ (*loloma*), and ‘longing’ (*diva*) all sorted into the “love/like” cluster. Additionally, in the pilot card-sort task discussed previously, both ‘pain’ (*mositi*) and ‘self-pity’ (*lomalomani koya*) sorted into the “Love/like” cluster, implying that these dysphoric feelings saliently often follow from valued relationships. In the HCA, ‘indifference’ (*sega ni kauwai*) was an outlier in the “hate” cluster and was almost equidistant between the “hate” and “contempt” in the MDS analysis – not surprising on the hypothesis that ‘indifference’ (or more precisely, “no compassion”) to another’s suffering follows from both Hate and Contempt. Study 3 addresses more directly, and experimentally, the causal linkages among attitudes and emotions as these might influence the structure of affect lexicons.

## 5 Study 3: the Functional Relation of Attitudes and Emotions

Both Study 1 and Study 2 provided suggestive evidence of a functional distinction between emotions and attitudes in the Yasawan affect lexicon. In Study 1, distinct sets of terms were used to characterize social evaluations and to characterize responses to social events. In Study 2, participants sorted 40 affect terms primarily according to the kinds of situations that elicit them, and each emergent cluster appeared to be anchored by a different social attitude concept. Study 3 used vignettes to directly test the role of putative attitudes in moderating emotions across social events. I used a between-subjects manipulation of attitude towards another person (six groups: Love, Respect, Like, Contempt, Hate, and Fear), and asked ten participants per group ( $N = 60$ ) how they would feel at each of twenty social scenarios involving a person viewed with that attitude (see Table 6 for scenarios). For each scenario, we first allowed participants to freely list their emotional reactions, and then we probed a set of target emotions. Participants rated all emotion magnitudes by pointing along a 6-point Likert scale.

The ASE (Attitude-Scenarios-Emotions) framework makes a number of predictions about how emotional reactions should vary as a function of attitudes. Generally, if attitudes represent relational value, and emotions motivate adaptive behavior (Cosmides & Tooby 2000), then given a social event, attitudes should predispose an emotional response that is adaptive vis-à-vis the implications of the event for the represented value of the relationship. This makes a quantitative prediction:

- 1) Given an event that predicts receiving one of the fitness affordances of a relationship (such as *encountering* someone), applicable attitudes that represent positive values (such as Love, Respect, Like) will lead to greater levels of emotions that *facilitate* capitalizing on those positive opportunities (such as ‘happiness’, ‘concern/sympathy’, or ‘interest’), while attitudes that represent negative values (such as Hate and Fear) will lead to greater levels of emotions that *prevent* incurring potentially negative consequences (such as ‘anger’ and ‘fear’). Operationally, this predicts a main effect of Attitude on mean emotion ratings across different Scenarios.

A second, qualitative, prediction also follows:

- 2) The same event (e.g., *encounter*) will evoke qualitatively distinct emotions from attitudes that represent costs vs. benefits – ‘happiness’ will follow from Love to facilitate receipt of benefits, while ‘anger’ will follow from Hate to mitigate exposure to costs. Operationally, this predicts a two-way interaction of Attitude and Emotion within a Scenario.

The ASE framework makes a third prediction:

- 3) Each attitude is emotionally pluripotent, a “syndrome of episodic dispositions” (Royzman et al. 2005) that adaptively regulates relational behavior by potentiating diverse emotions across interactions and social events (see also Shand 1920; McDougall 1937; Heider 1958). For example, Love may variously lead to ‘happiness’ at *encounter*, ‘concern’ at a *request* for help, ‘happiness’ at a loved one’s *victory*, ‘shame’ at a loved one’s public *failure*, ‘anger’ at their *victimization*, and ‘sadness’ at their *death*. Operationally, this predicts a two-way interaction of Scenario and Emotion within each Attitude. This stands in stark contrast to one-to-one “attitude as latent emotion” assumption of many emotion researchers (e.g., Frijda 1994; Lazarus 1991).

Finally, this approach makes a fourth prediction:

- 4) Attitudes with divergent value representations (such as Love and Hate) will have functionally divergent emotion constellations, potentiating the same emotions in starkly different scenarios. Love should potentiate ‘happiness’ if an event (such as *encounter*) predicts receipt of the benefits proxied by Love, but it will potentiate ‘sadness’ if an event (such as another’s *death*) cues the loss of those benefits – on the hypothesis that ‘sadness’ is an emotion designed to recruit social support when needed (Keller & Nesse 2006). Love should even predict ‘anger’ at *death* if another agent is thought to have caused *death* (as is often the case in Fiji owing to witchcraft accusations). In contrast, Hate should also potentiate ‘anger’, but at *encounter* not *death*, as well as ‘happiness’, but at *death* not *encounter*

(since a source of costs has been removed and there is an opportunity to ‘broaden and build’ resources; Fredrickson 2002). Operationally, this predicts a three-way interaction of Attitude, Scenario, and Emotion – the impact of divergent scenarios (e.g., *encounter* and *death*) on divergent emotions (e.g., ‘happiness’ and ‘anger’) will be moderated by divergent attitudes (e.g., Love and Hate).

### 5.1 Study 3 Methods

Sixty Indigenous iTaukei Fijians (30 female,  $M$  age =  $38.2y \pm 13.5y$ , range = 18y–79) sampled from the same two villages as the elicitation interviews participated in this interview. Participants were recruited from a randomized list of all adults present in the two villages. Each participant was invited to participate in a 45-minute interview in which we would ask them about “the ways in which [they] might feel and act following events involving another person” (*na sala ko na rawa ni vakila se na ka ko na cakava salamuria tiko kei na veika e yaco ka okati tiko kina e dua tale na tamata*). We made clear that their answers did not have to reflect how they actually acted or felt in particular events in their lives, but instead how they thought they might feel and act in the described situation. As with the other interviews, we made clear that there were no right or wrong answers, and that they could choose not to participate without any problem.

Participants were first oriented to the emotion rating scale, a six-point Likert scale printed on a sheet of paper, with equidistant hash marks on a line labeled from left to right “sega” (none), “lailai sara” (very little), “lailai” (little), “e so” (some), “levu” (much), and “levu sara” (very much). They were told,

I will ask you which emotions you would feel as the result of different events. You should list all of the emotions that you think you would feel, even if you’d feel them just a little. I will also ask you how strongly you would feel those emotions. You will indicate the strength of different feelings by pointing to a spot on this line. (*Au na via taroga na yalo cava iko na vakila ena vuku ni veika duidui e yaco. Iko mo na tukuna mai na veiyalo iko nanuma ni ko na vakila, veitalia ga kevaka o vakila ga vakalailai. Au na via tarogi iko talega, e vakacava sara mada na kaukauwa ni nomu vakila na yalo oya. Iko mo na vakaraitaka mai na kaukauwa ni veiyalo duidui ena nomu dusia na maka ena laini oqo.*)

The RA then gave several examples of using the scale. For example, if they would feel very ‘happy’ (*marau*) following an event, they should point to “very much” (*levu sara*).



Participants were randomly assigned to one of six between-subjects attitude conditions – Love (*lomana*), Respect (*dokai*), Like (*taleitaka*), Contempt (*beci*), Hate (*sevaka*), and Fear (*rerevaka*) – until five males and five females were in each condition. The attitude manipulation began with the RA saying, “All of the questions I ask you will be about events involving someone you [attitude]” (*Na taro kece au na taroga vei iko ena baleta na ka e yaco ka wili talega kina e dua iko [attitude]*). The 20 scenarios were then asked in an order separately randomized for each participant, except for the *encounter* scenario, which was always asked first to establish a baseline (see Table 6). For each scenario, the participant was asked, “So, how would you feel if ...” (*Koya gone, e na vakacava sara mada na vakarau ni lomamu kevaka ...*), followed by the scenario. I thus used the same construction (*vakarau ni lomamu*) for “feel” as in Study 1. For each emotion freely listed, the RA asked, “How much [emotion] would you feel?” (*E vakacava na levu ni [emotion] iko na vakila?*), gesturing towards the printed scale. Next, the RA would probe a target set of emotions for that scenario, except if a target emotion (or its near synonyms) had been already mentioned in the free list. For each target emotion, the RA would ask, “Would you also feel [emotion]?” (*Iko na vakila talega na [emotion]?*), and, if yes, he would ask how much. To end each scenario, the RA would ask, “Finally, how would you act if [scenario]?” (*Kenai otioti, ena vakacava na nomui vukivuki kevaka [scenario]?*). I will not present here analyses of these behavioral responses.

The scenarios used in Study 3 (Table 6) were derived from a separate interview not described in this paper: the Causes and Consequences of Affect interview. In this interview, we asked each of 43 participants three questions about ten affect terms (overall the same 40 terms as in the card sort):

- i. “What sorts of people or events cause a Fijian to experience [feeling]?” (*Na cava so na ka (tamata se dua na ka e yaco) e vakavuna me na lako curuma kina e dua nai Taukei na [feeling]?*)
- ii. “When a Fijian does experience [feeling], what does s/he want to do or hope will happen?” (*Na gauna e na lako curuma kina e dua nai Taukei na [feeling] ogo, na cava e na vinakata me na cakava se na ka me na yaco?*)
- iii. “How does a Fijian actually act when experiencing [feeling]?” (*E vakacava sara beka na nodrai vukivuki nai Taukei ena gauna e lako curumi kina na [feeling]?*).

Among the eliciting conditions of various emotions, participants reported a number of social events involving either generic others, or people viewed with particular attitudes. For example, asked for an event that causes ‘concern/compassion’ (*kauwai*), one participant said, “someone asks for help” (*dua e kere veivuke*). Asked for an event that causes ‘anger’ ( *cudru*), another participant said, “someone acts harshly towards me” (*dua e vakayacora vei au e so nai*

TABLE 6 20 social scenarios presented within subjects in Study 3

#	Scenario	English	Fijian
		How would you feel ...	<i>E na vakacava sara mada na vakarau ni lomamu ...</i>
1	<i>Encounter</i>	... if you see someone you [attitude]?	<i>... kevaka iko raica e dua iko [attitude]?</i>
2	<i>Reunion</i>	... if someone you [attitude] returns after being away for a long time?	<i>... kevaka e dua iko [attitude] sa yali tu vakabalavu sa qai basika mai?</i>
3	<i>Gift</i>	... if someone you [attitude] gives you a gift you've always wanted?	<i>... kevaka e dua iko [attitude] e solia vei iko e dua na nomui loloma o diva sara tikoga?</i>
4	<i>Achievement</i>	... if someone you [attitude] is the first in the village to do something great?	<i>... kevaka e dua iko [attitude] e cakava e dua na ka cecere ena loma ni koro ena matai ni gauna?</i>
5	<i>Prize</i>	... if someone you [attitude] wins a prize?	<i>... kevaka e dua iko [attitude] e winitaka e dua nai cocovi?</i>
6	<i>Request</i>	... if someone you [attitude] asks you for help?	<i>... kevaka e dua iko [attitude] e mai kere veivuke?</i>
7	<i>Victimization</i>	... if someone does something bad to someone you [attitude]?	<i>... kevaka e dua tale e cakava e dua na ka ca vei koya iko [attitude]?</i>
8	<i>Injured</i>	... if someone you [attitude] is badly injured?	<i>... kevaka e dua iko [attitude] e sa mavoa levu?</i>
9	<i>Sendoff</i>	... at the sendoff of someone you [attitude]?	<i>... ena veitalatala vei dua iko [attitude]?</i>
10	<i>Death</i>	... if someone you [attitude] dies?	<i>... kevaka e dua iko [attitude] e sa mate?</i>
11	<i>Disrespect them</i>	... if your behavior towards someone you [attitude] is not good?	<i>... kevaka na nomui tovo vua e dua iko [attitude] e sega ni vinaka?</i>
12	<i>Hurt them</i>	... if you hurt someone you [attitude]?	<i>... kevaka o iko vakamavoataka e dua iko [attitude]?</i>
13	<i>They know</i>	... if someone you [attitude] knows that you did something wrong?	<i>... kevaka e dua iko [attitude] e kilai ni o cakava e dua na ka cala?</i>

TABLE 6 20 social scenarios presented within subjects (*cont.*)

	English	Fijian
#	Scenario	How would you feel ...
		<i>E na vakacava sara mada na vakarau ni lomamu ...</i>
14	<i>They bad</i>	... if someone you [attitude] does something bad in the village?
		<i>... kevaka e dua iko [attitude] e cakava e dua na ka ca ena loma ni koro?</i>
15	<i>Spouse</i>	... if someone you [attitude] socializes with your (spouse/sweetheart)?
		<i>... kevaka e dua iko [attitude] e mai vosa tale tiko vei na (watimu/daulomani)?</i>
16	<i>Prank</i>	... if someone you [attitude] plays a prank on you on a dark night?
		<i>... kevaka e dua iko [attitude] e vakidacalataki iko ena dua na bogi buto?</i>
17	<i>Mistake</i>	... if someone you [attitude] loses one of your precious items?
		<i>... kevaka e dua iko [attitude] e vakayalia e dua na nomui yaya dredre?</i>
18	<i>Theft</i>	... if someone you [attitude] steals one of your precious items?
		<i>... kevaka e dua iko [attitude] e butakoca e dua na nomui yaya dredre?</i>
19	<i>Harsh</i>	... if someone you [attitude] does something harsh to you?
		<i>... kevaka e dua iko [attitude] e cakava e dua nai tovo kaukauwa vei iko?</i>
20	<i>Lie</i>	... if someone you [attitude] lies to you?
		<i>... kevaka e dua iko [attitude] e lasutaki iko?</i>

*tovo kaukauwa*). I gathered all such responses and selected 20 that captured a range of costs and benefits delivered and received by self and other, and for which “someone viewed with [attitude]” could be substituted for the original person mentioned.

In the analyses that follow, I focus only on seven scenarios, for which five have predicted moderation of emotions by attitudes and/or an interaction of scenarios with emotions and attitudes : 1) an *encounter* with another person (with proximity cueing costs, benefits, or nothing, depending on the attitude), 2) a *request* from them for help (benefiting another at some cost, which is only adaptive if they are a source of benefits), 3) they win a *prize* (they benefit from a zero-sum windfall, which could be good or bad), 4) they are *victimized* by a

third party (which could be good, bad, or neither), and 5) they *die* (the cessation of benefits or costs, or no impact to self, depending on the relationship). I also include two scenarios that are predicted to have similar effects on emotions across attitudes: 6) *being treated harshly* by them (nonconsensual cost receipt), which when framed as “harsh” treatment (*nai tovo kaukauwa*) is disrespectful and never justified, and ‘anger’ functions even within valuable relationships to negotiate better treatment (Sell et al. 2009); and 7) receiving a *gift* from them (they unilaterally confer a benefit, an unalloyed good in Fiji given little evidence of competitive gifting, as well as systems of exchange that do not entail reciprocity; Sahlin 1962), and such benefit receipt can recalibrate representations of value through ‘gratitude’ (‘happiness’ in Fiji) and induce a more positive attitude (Tooby et al., 2008).

For each scenario I selected the target emotions (which were probed directly if they were not freely listed by a participant) based on theoretical considerations that predicted meaningful variation or similarities across attitudes. In some cases I also targeted attitudes as outcomes (e.g., “Would you also feel ‘hate’?”) so as to explore how scenarios might change attitudes; I do not present those data here. Between three and five affects were targeted for each scenario (15 in total), and a given target emotion was probed for only a subset of the scenarios. I did this to minimize participant fatigue and to reduce the number of potentially bizarre questions (e.g., “How disgusted would you be if someone you loved gave you a gift?”). Unfortunately, this precludes most omnibus comparisons of emotions across attitudes, as well as many potential high-level comparisons; only a few scenarios share two or more emotions and have predicted interactions of attitude, scenario, and emotion. In the following analyses, I report only a subset of emotions within scenarios, focusing on those attended by clear predictions.

To streamline the interview protocol while maximizing the power of the following analyses, a number of emotion answers were treated as effective synonyms, such that if one was listed in the initial free response, the others were not probed in the follow-up. The clustering patterns from Study 2 guided these decisions, as did dictionary definitions of the terms and our own understanding of them. The equated groups were terms for ‘happy’ (*marau, reki*), ‘angry’ (*borisi, cudru, rarawa*), ‘afraid’ (*rere, mataku, ririko*), ‘sad’ (*luluvu, loma bibi*), ‘worried’ (*lomaleqa, taqaya, nuiqawaqawa*), ‘concern’ (*kauwai, loloma, mositi au* [‘pains me’]), ‘surprise’ (*kidacala, kidroa, kusariko*), and ‘admire’ (*qoroi, dokadokai*). The terms ‘shame’ (*madua*), ‘envy’ (*vuvu*), and ‘disgust’ (*vakasisila*) were treated separately. Note that I do not report the free list emotion data (for example, comparing the frequencies with which certain emotions were freely

listed across attitudes), although inspection of these data suggest that freely listed emotions were almost always among the target emotions to be probed.

## 5.2 Study 3 Results

### 5.2.1 Social Attitudes Moderate the Magnitude of an Emotional Response to a Scenario

*Concern, Happiness, Anger, & Fear at Encounter.* Four separate one-way ANOVAs were used to test for differences across the six attitude groups in their mean ratings of 'concern', 'happiness', 'anger', and 'fear' at Ego *encountering* Alter. Each emotion differed significantly across the six groups: 'concern',  $F(5, 53) = 15.72, p < .0001$ ; 'happiness',  $F(5, 53) = 29.28, p < .0001$ ; 'anger',  $F(5, 54) = 17.19, p < .0001$ ; and 'fear',  $F(5, 54) = 12.14, p < .0001$ . Post-hoc pairwise comparisons with a Bonferroni correction for multiple comparisons revealed that ratings of 'concern' and 'happiness' at *encounter* were greater for the Love, Respect, Like and Contempt attitude groups than for the Hate and Fear groups, which did not differ from one another. This pattern was reversed for 'anger' at *encounter*, which was significantly greater for the Hate and Fear groups than for the Love, Respect, Like or Contempt groups. Ratings of 'fear' at *encounter* were significantly greater only for the Fear group compared to the other five groups, which did not differ among themselves (Figure 2.03).

*Concern & Anger at Request.* Two separate one-way ANOVAs were used to test for differences across the six attitude groups in their mean ratings of 'concern' and 'anger' at Alter's *request* for help from Ego. 'Concern' differed significantly across the six groups,  $F(5, 54) = 8.11, p < .0001$ , while 'anger' differed only marginally,  $F(5, 54) = 2.00, p = .09$ . Post-hoc pairwise comparisons with a Bonferroni correction revealed that the Hate and Fear groups reported lower 'concern' at *request* than the Love, Respect, and Like groups (Figure 2.04). The Fear group also reported lower 'concern' than the Contempt group. A similar set of comparisons revealed that there were no significant group differences in 'anger' at *request*. However, removing the conservative Bonferroni correction, both the Hate and Fear group reported greater 'anger' at *request* than the Love, Respect, and Like groups. A post-hoc contrast analysis found that the average of the 'anger' means of Hate and Fear was greater than the average of Love, Respect, and Like,  $F(1, 54) = 8.22, p = .006$ , suggesting a power problem in the simple group comparisons.

*Happiness & Envy at Prize.* Two separate one-way ANOVAs were used to test for differences across the six attitude groups in their mean ratings of 'happiness' and 'envy' at Alter winning a *prize*. Both emotions differed significantly across the six groups: 'happiness',  $F(5, 54) = 4.16, p = .003$ ; 'envy',  $F(5, 54) = 3.82,$

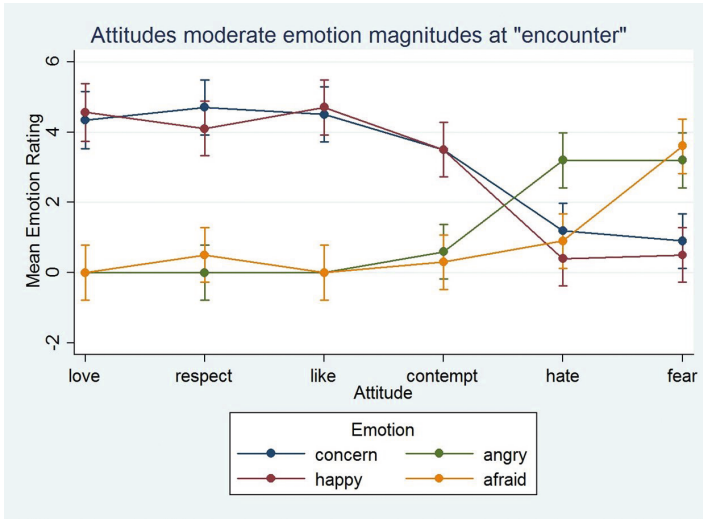


FIGURE 3 Mean ratings of four emotions across six attitude groups for scenario *encounter*  
 Mean ratings of “concern” (*kauwai*), “happy” (*marau*), “angry” (*borisi*), and “afraid” (*rere*) across the six attitude groups for the scenario *encounter*. Error bars are 95% CIs.

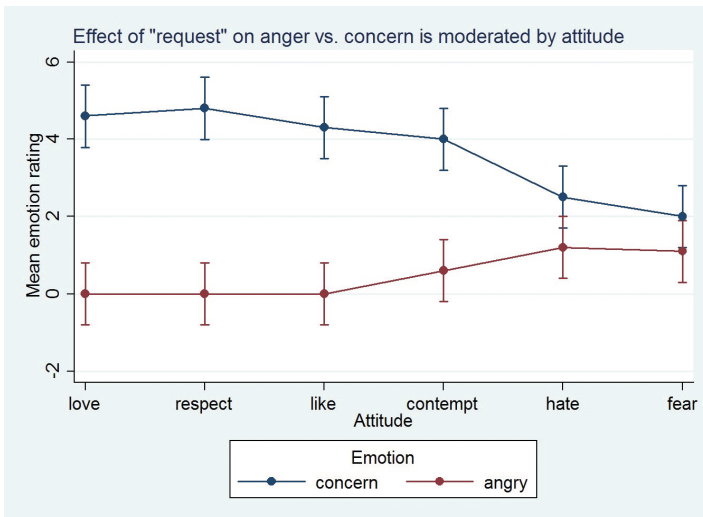


FIGURE 4 Mean ratings of two emotions across six attitude groups for scenario *request*  
 Mean ratings of “concern” (*kauwai*) and “angry” (*borisi*) across the six attitude groups for the scenario *request*. Error bars are 95% CIs.

$p = .005$ . Post-hoc pairwise comparisons with a Bonferroni correction revealed that both the Hate and Fear groups reported lower 'happiness' at *prize* than did the Love and Respect groups. A similar set of comparisons for 'envy' revealed that the Hate group reported greater 'envy' at *prize* than the Love, Respect, or Contempt groups (Figure 2.05).

*Anger & Happiness at Victimization.* Two separate one-way ANOVAs were used to test for differences across the six attitude groups in their mean ratings of 'anger' and 'happiness' at Alter's *victimization* by a third party. Levels of 'anger' differed only marginally across the six groups,  $F(5, 54) = 2.18, p = .07$ , while 'happiness' differed significantly,  $F(5, 54) = 6.06, p = .0002$ . Post-hoc pairwise comparisons with a Bonferroni correction revealed that ratings of 'anger' at *victimization* were marginally higher for the Respect group than for the Hate group. Removing this conservative correction, the Respect group reported greater 'anger' at *victimization* than both the Hate and Fear groups. A post-hoc contrast analysis found that the average of the 'anger' means of Love, Respect, and Like was higher than the average of Hate and Fear,  $F(1, 54) = 18.56, p = .0001$ . Post-hoc pairwise comparisons with a Bonferroni correction revealed that ratings of 'happiness' at *victimization* were significantly greater for the Hate and Fear groups than for the Love, Respect, Like, and Contempt groups (Figure 2.06).

*Sadness & Happiness at Death.* Two separate one-way ANOVAs were used to test for differences across the six attitude groups in their mean ratings of 'sadness' and 'happiness' at Alter's *death*. Both emotions differed significantly across the six groups: 'sadness',  $F(5, 54) = 7.72, p < .0001$ , and 'happiness',  $F(5, 54) = 4.11, p = .003$ . Post-hoc pairwise comparisons with a Bonferroni correction revealed that ratings of 'sadness' at *death* were significantly greater for the Love, Respect, and Like groups than for the Hate and Fear groups (Figure 2.07). 'Sadness' ratings at *death* by the Contempt group were middling and did not differ significantly from any of the other groups. Bonferroni corrected, ratings of 'happiness' at *death* were significantly greater for the Fear group than for the Respect and Like groups. Removing this conservative correction, 'happiness' at *death* was greater for both the Hate and Fear groups than for the Love, Respect, and Like groups. A post-hoc contrast analysis found that the average of the mean 'happiness' ratings of the Love, Respect, and Like groups was lower than the average of the Hate and Fear groups,  $F(1, 54) = 15.07, p = .0003$ .

*Happiness & Anger at Gift.* Two separate one-way ANOVAs were used to test for differences across the six attitude groups in their mean ratings of 'happiness' and 'anger' at Ego receiving a *gift* from Alter. 'Happiness' differed significantly across the groups,  $F(5, 54) = 2.40, p < .05$ , while 'anger' did not,  $F(5, 54) = 1.00, p > .40$ . Post-hoc pairwise comparisons with a Bonferroni correction revealed

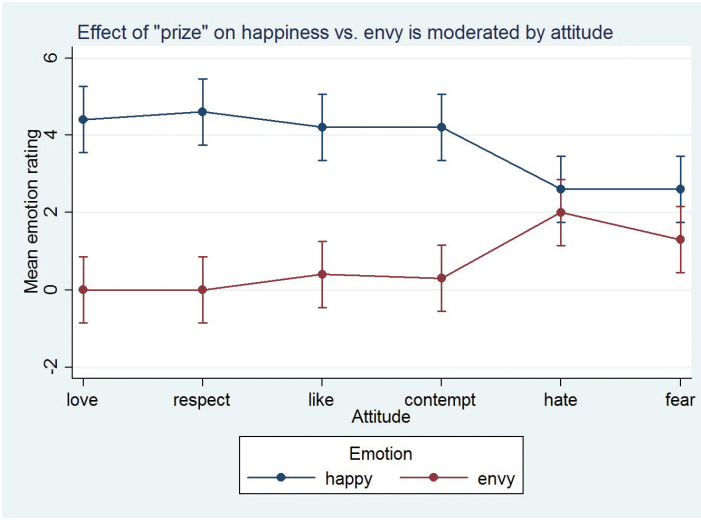


FIGURE 5 Mean ratings of two emotions across six attitude groups for scenario *prize*  
 Mean ratings of “happy” (*marau*) and “envy” (*vuvu*) across the six attitude groups for the scenario *prize*. Error bars are 95% CIs.

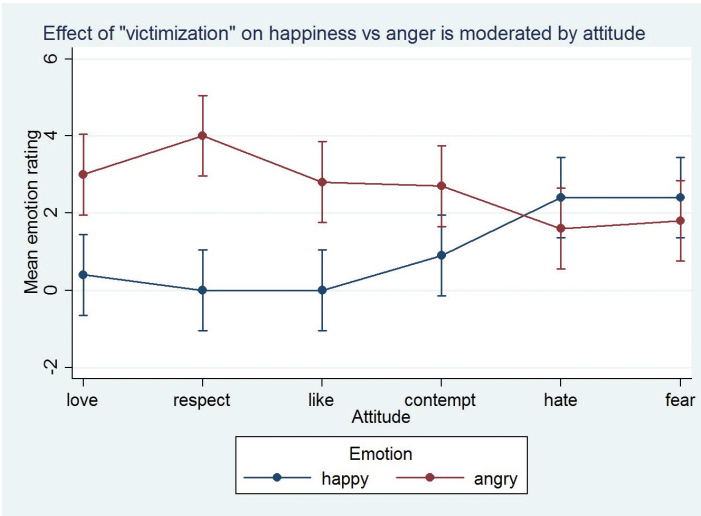


FIGURE 6 Mean ratings of two emotions across six attitude groups for scenario *victimization*  
 Mean ratings of “happy” (*marau*) and “angry” (*borisi*) across the six attitude groups for the scenario *victimization*. Error bars are 95% CIs.



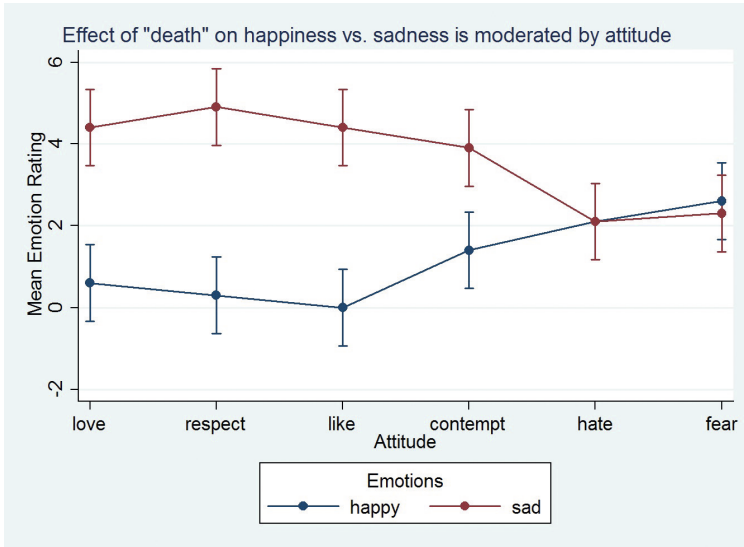


FIGURE 7 Mean ratings of two emotions across six attitude groups for scenario *death*  
 Mean ratings of “happy” (*marau*) and “sad” (*luluvu*) across six attitude groups for the scenario *death*. Error bars are 95% CIs.

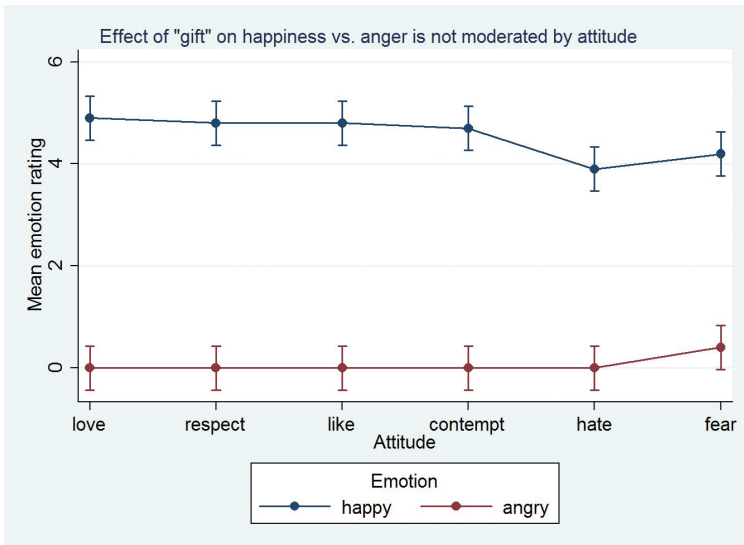


FIGURE 8 Mean ratings of two emotions across six attitude groups for scenario *gift*  
 Mean ratings of “happy” (*marau*) and “angry” (*borisi*) across the six attitude groups for the scenario *gift*. Error bars are 95% CIs.

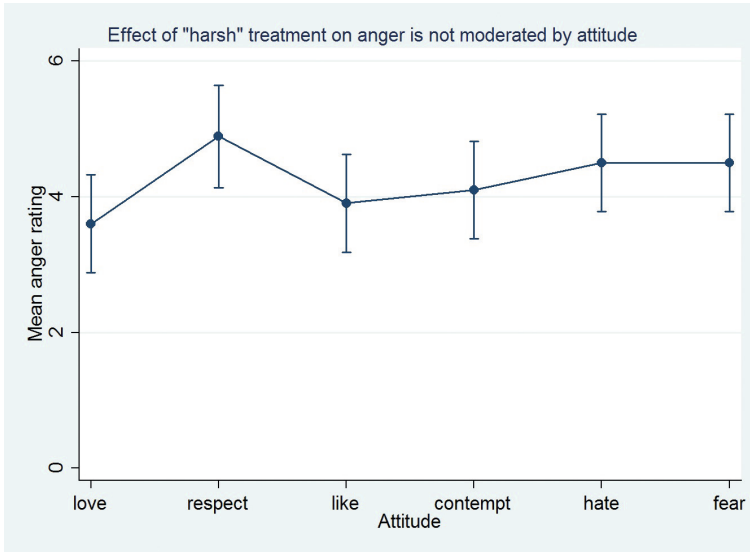


FIGURE 9 Mean ratings of anger across six attitude groups for scenario *harsh*. Mean ratings of “anger” (*borisi*) across the six attitude groups for the scenario *harsh*. Error bars are 95% CIs.

that there were no significant pairwise differences in ‘happiness’ among the groups. Removing this conservative correction, the Hate group reported lower ‘happiness’ at a *gift* than the Love, Respect, Like, and Contempt groups. A post-hoc contrast analysis found that the average of the ‘happiness’ means of Hate and Fear was significantly lower than the average of Love, Respect, Like, and Contempt,  $F(1, 54) = 11.04, p < .002$  (Figure 2.08). Virtually no ‘anger’ at *gift* was reported by any of the groups.

*Anger at Harsh treatment.* A one-way ANOVA was used to test for differences across the six attitude groups in their mean ratings of ‘anger’ at Ego receiving *harsh* treatment from Alter. ‘Anger’ did not differ significantly across the groups,  $F(5, 53) = 1.65, p = .16$  (Figure 2.09).

5.2.2 Social Attitudes Moderate which Emotion Follows from a Scenario *Happiness vs. Anger at Encounter.* A two-way ANOVA was used to test for an interaction of Attitude (six groups) and Emotion (‘happiness’ vs. ‘anger’) on mean emotion ratings for *encounter*. There was no main effect of Attitude on emotion ratings when ‘happiness’ and ‘anger’ were collapsed,  $F(5, 107) = .69, p = .63$ . There was a main effect of Emotion when collapsing across attitudes,  $F(1, 107) = 68.03, p < .0001$ , with the mean of ‘happiness’ greater than for ‘anger’. The predicted two-way interaction of Attitude and Emotion was also

significant,  $F(5, 107) = 45.23, p < .0001$  (see Figure 2.03, red and green lines). A post-hoc contrast analysis revealed that 'happiness' ratings were significantly greater than 'anger' ratings for the Love, Respect, Like, and Contempt groups, while the Hate and Fear groups reported significantly greater 'anger' than 'happiness' at *encounter*.

*Concern vs. Anger at Request.* A two-way ANOVA was used to test for an interaction of attitude (six groups) and emotion ('concern' vs. 'anger') on mean emotion ratings for *request*. There was no main effect of Attitude on emotion ratings when 'concern' and 'anger' were collapsed,  $F(5, 108) = 1.31, p = .27$ . There was a main effect of Emotion when collapsing across attitudes,  $F(1, 108) = 188.87, p < .0001$ , with the mean ratings for 'concern' greater than for 'anger'. The predicted two-way interaction of Attitude and Emotion was also significant,  $F(5, 108) = 8.92, p < .0001$ . A post-hoc contrast analysis revealed that 'concern' ratings were significantly greater than 'anger' ratings for the Love, Respect, Like, and Contempt groups. Hate showed marginally greater 'concern' than 'anger', while Fear showed similar levels of 'concern' and 'anger' at *request* (Figure 2.04).

*Happiness vs. Envy at Prize.* A two-way ANOVA was used to test for an interaction of Attitude (six groups) and Emotion ('happiness vs. 'envy') on mean emotion ratings for *prize*. There was no main effect of Attitude on emotion ratings when 'happiness' and 'envy' were collapsed,  $F(5, 108) = 0.20, p = .96$ . There was a main effect of Emotion when collapsing across attitudes,  $F(1, 108) = 155.60, p < .0001$ , with the mean ratings for 'happiness' greater than for 'envy'. The predicted two-way interaction of Attitude and Emotion was also significant,  $F(5, 108) = 7.81, p < .0001$ . A post-hoc contrast analysis revealed that 'happiness' ratings were significantly greater than 'envy' ratings for the Love, Respect, Like, and Contempt groups. Fear showed marginally greater 'happiness' than 'envy', while Hate showed similar levels of 'happiness' and 'envy' at *prize* (Figure 2.05).

*Anger vs. Happiness at Victimization.* A two-way ANOVA was used to test for an interaction of Attitude (six groups) and Emotion ('anger' vs. 'happiness') on mean emotion ratings for *victimization*. There was no main effect of Attitude on emotion ratings when 'anger' and 'happiness' were collapsed,  $F(5, 108) = 0.48, p = .79$ . There was a main effect of Emotion when collapsing across attitudes,  $F(1, 108) = 28.83, p < .0001$ , with the mean ratings for 'anger' greater than for 'happiness'. The predicted two-way interaction of Attitude and Emotion was also significant,  $F(5, 108) = 6.78, p < .0001$ . A post-hoc contrast analysis revealed that 'anger' ratings were significantly greater than 'happiness' ratings for Love, Respect, Like, and Contempt, but not for Hate and Fear, which

both showed a non-significant trend to greater 'happiness' than 'anger' at *victimization* (Figure 2.06).

*Sadness vs. Happiness at Death.* A two-way ANOVA was used to test for an interaction of Attitude (six groups) and Emotion ('sadness' vs. 'happiness') on mean emotion ratings for *death*. There was no main effect of Attitude on emotion ratings when 'sadness' and 'happiness' were collapsed,  $F(5, 108) = 0.44, p = .82$ . There was a main effect of Emotion when collapsing across attitudes,  $F(1, 108) = 84.45, p < .0001$ , with the mean for 'sadness' greater than for 'happiness'. The predicted two-way interaction of Attitude and Emotion was also significant,  $F(5, 108) = 10.72, p < .0001$ . A post-hoc contrast analysis revealed that 'sadness' ratings were significantly greater than 'happiness' ratings for Love, Respect, Like, and Contempt, but not for Hate and Fear, which showed indistinguishable levels of 'sadness' and 'happiness' at *death* (Figure 2.07).

### 5.2.3 Each Social Attitude is Emotionally Pluripotent

*Happiness vs Anger at Encounter vs. Death.* Six separate two-way ANOVAs were used to test for an interaction of Scenario (*encounter vs. death*) and Emotion ('happiness' vs. 'anger') for each Attitude group. I analyze 'anger' instead of 'sadness' because I did not target 'sadness' in the *encounter* scenario. Controlling for participant ID as a random within-subjects variable (both Scenario and Emotion are repeated measures within Attitude), all attitude groups showed the predicted Scenario x Emotion interaction: Love,  $F(1, 26) = 57.43, p < .0001$ ; Respect,  $F(1, 27) = 57.99, p < .0001$ ; Like,  $F(1, 27) = 81.41, p < .0001$ ; Contempt,  $F(1, 27) = 7.72, p < .01$ ; Hate,  $F(1, 27) = 11.71, p = .002$ ; Fear,  $F(1, 27) = 14.20, p < .001$ . Post-hoc contrast analyses revealed that for Love, Respect, and Like, 'happiness' was significantly greater than 'anger' at *encounter*, while 'anger' was significantly greater than 'happiness' at *death* (see Figure 2.10). For Contempt, 'happiness' was significantly greater than 'anger' at *encounter*, yet these two emotions were not significantly different at *death*. For Hate, 'anger' was significantly greater than 'happiness' at *encounter*, and 'happiness' trended towards being greater than 'anger' at *death* ( $F = 2.36, p = .14$ ). For Fear, both of these effects were significant: 'anger' was greater than 'happiness' at *encounter*, and 'happiness' was greater than 'anger' at *death*.

### 5.2.4 Divergent Attitudes can Produce the Same Emotion in Different Scenarios

*Attitudes moderate Happiness vs. Anger at Encounter vs. Death.* A three-way ANOVA was used to test for moderation by Attitudes of the two-way interaction of Emotion and Scenario. Comparing Love and Hate, the predicted three-way interaction was highly significant,  $F(1, 71) = 60.04, p < .0001$ . A post-hoc contrast analysis (using the Stata command "margins scenario#emotion,

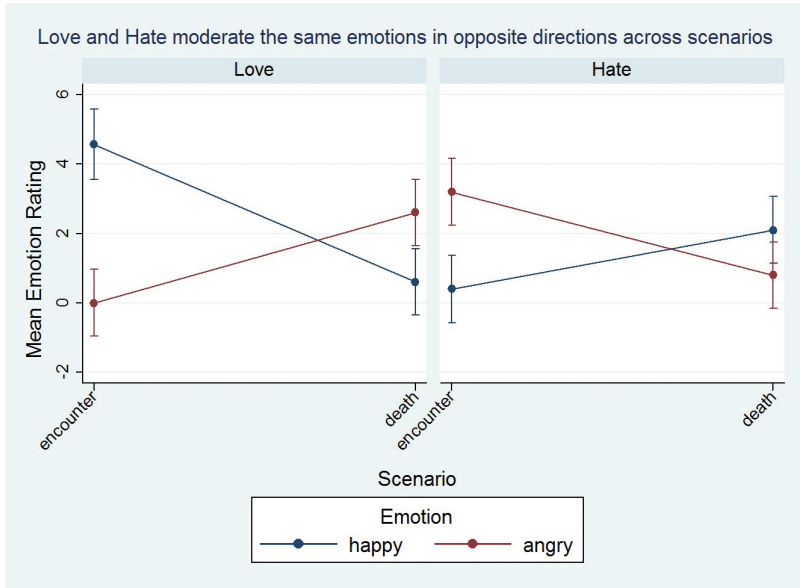


FIGURE 10 Mean ratings of two emotions by Love and Hate groups for *encounter* and *death*

Mean ratings of “happiness” (*marau*) and “anger” (*borisi*) by the Love (*lomana*) and Hate (*sevaka*) groups for the *encounter* and *death* scenarios. Error bars are 95% CIs.

dydx(attitude)”) revealed that Love and Hate produced significantly different levels of ‘happiness’ and ‘anger’ at both *encounter* and *death*, with their effects reversing in the two scenarios: For Love, ‘happiness’ was greater than ‘anger’ during *encounter* and ‘anger’ was greater than ‘happiness’ during *death*, yet for Hate the reverse was true (Figure 2.10). Controlling for participant ID as a random within-subjects covariate only slightly reduced the three-way interaction,  $F(1, 53) = 51.16, p < .0001$ .

There were qualitatively similar results, including the reversal of the two-way Scenario x Emotion interaction, comparing Love and Fear,  $F(1, 71) = 55.17, p < .0001$ ; Respect and Hate,  $F(1, 72) = 60.22, p < .0001$ ; Respect and Fear,  $F(1, 72) = 55.56, p < .0001$ ; Like and Hate,  $F(1, 72) = 69.72, p < .0001$ ; and Like and Fear,  $F(1, 72) = 63.46, p < .0001$ . There were also significant three-way interactions for Contempt and Hate,  $F(1, 72) = 22.94, p < .0001$ , and Contempt and Fear,  $F(1, 72) = 22.29, p < .0001$ , although in both comparisons levels of ‘happiness’ and ‘anger’ at *death* were not significantly different between the attitudes. Contempt also showed a significant three-way interaction with Love,  $F(1, 71) = 4.81, p < .05$ ; Respect,  $F(1, 72) = 4.93, p < .05$ ; and Like,  $F(1, 72) = 6.41, p < .05$ . While the two-way interactions of Scenario and Emotion were in

the same direction for Contempt and the three positive Attitudes, post-hoc analyses showed that similar levels of 'happiness' and 'anger' at *death* in the Contempt group drove the three-way interactions, as Love, Respect, and Like each resulted in significantly greater 'anger' than 'happiness' at *death*. All of the preceding three-way interactions were only slightly weakened, and remained significant, controlling for participant ID as a random within-subjects covariate. There were no three-way interactions comparing Love, Respect, and Like to one another.

### 5.3 Study 3 Discussion

The results of Study 3 generally support the predictions of the ASE framework. Across Attitudes, Scenarios, and Emotions, attitudes moderate emotional responses to social events. Within scenarios, attitudes both moderate the magnitude of one emotional response, and which emotion occurs most strongly. Across scenarios, a given attitude can produce a range of emotional responses, and divergent attitudes can produce the same emotions under starkly different circumstances. The *encounter* scenario, always presented first, produced clear evidence that different attitudes evoke particular emotions at the simple presence of their object: Love, Respect, and Like led to 'happiness' and 'interest/concern', while Hate produced 'anger', and Fear led to both 'anger' and 'fear'. We might think of these attitude-emotion relationships as the "default" motives that follow from attitudes and which tend to characterize a relationship thus represented. However, there is not *merely* a one-to-one mapping of attitudes and emotions, in which Love is latent 'concern' and Hate is latent 'anger' (*sensu* Frijda 1994). Instead, attitudes are causally linked to a constellation of emotions across scenarios, plausibly facilitating adaptive responses to the implications of various events for the relationships they represent. These coherent attitude-emotion clusters appear quite intuitive to English speakers, yet they emerged from a bottom-up study of affective experience among Yasawans, who use a very different language (Austronesian), in a very different social ecology (small-scale hierarchical fisher-horticulturalists), in a culture area known to display significant differences in affective experience from Western populations (e.g., White & Kirkpatrick 1985). While English speakers have clearly had a significant impact on Fiji (Derrick 1950; Lal 1992), the deep resonance of these Fijian results should be taken as suggestive evidence that functional attitude-emotion linkages are a universal feature of human relationship psychology.

In Study 3, Love, Respect, and Like generally had parallel effects. All three produced a constellation of emotions that are likely adaptive relative to a valued relationship partner: 'happiness' but not 'anger' or 'fear' at *encounter*,

'concern' but not 'anger' at *request*, 'happiness' but not 'envy' at their winning a *prize*, 'anger' but not 'happiness' at their *victimization*, and 'sadness' but not 'happiness' at their *death*, among other effects. In several analyses with likely power issues due to small samples, averaging the ratings of Love, Respect, and Like produced clear differences in their joint effects relative to the average of Hate and Fear. However, is it somewhat surprising that Respect did not uniquely elicit 'fear' at *encounter*, given the rich, strict norms that attend status-based interactions in Fiji. I did not probe 'shame' at *encounter*, but perhaps this would have tapped the relevant emotion; human 'shame' has been shown to operate in contexts of strong status asymmetries (Fessler 2004).

Hate and Fear also had similar effects on emotions across scenarios, although there were some interesting points of divergence. Fear was the only attitude to produce 'fear' at *encounter*; Fear arguably represents another as constituting a clear and present danger to self, and encountering such a person ought to mobilize resources to fight or flee. Only Hate produced greater 'envy' at *prize* than did Love, Respect, Like, and Contempt. This is not surprising, if Hate represents the extent to which another is a competitor in zero-sum resource games.

Contempt tended to have more similar effects to the positive attitudes than to the negative attitudes. This runs counter to predictions from accounts that place 'contempt' with anger, hate, and disgust in the landscape of person perception (e.g., Cuddy et al. 2007). However, these results do not provide clear support for the rendering presented in Gervais and Fessler (2017), of 'contempt' as devaluation that leads to indifference and intolerance. Relative to Hate, Contempt did lead to less 'envy' at *prize*, less 'happiness' at *victimization*, and greater 'happiness' at *gift*, predictions that support the distinction Gervais and Fessler make between Hate as a representation of a costly competitor, and Contempt as a representation of low positive value. However, comparing the effects of Contempt on different emotions within scenarios, Contempt led to greater 'concern' than 'anger' at *request*, greater 'happiness' than 'envy' at *prize*, greater 'anger' than 'happiness' at *victimization*, and greater 'sadness' than 'happiness' at *death*, though not greater 'anger' than 'happiness' at *death*. Contempt also led to no less 'happiness' or 'concern', and no more 'anger', than did Love, Respect, and Like at *encounter* and *request*. The effects of Contempt were sometimes middling, and did not differ significantly from either the positive or the negative attitudes; for example, for levels of happiness at another's *prize*, and levels of 'sadness' at their *death*. Nevertheless, in general, the effects involving Contempt are inconsistent with indifference and reactive intolerance. Instead, in this study in Fiji, Contempt appears closer to a representation that motivates pity – representing low efficacy but high communion – than to

a representation of the “lowest of the low” (Harris & Fiske 2006). Convergent with this, in Study 2 ‘contempt’ was closely related to ‘no respect’ and ‘looking down on’ someone, and less related to ‘hate’ and ‘disgust’. Speculatively, in Fiji, ecological risk and social interdependence, combined with norms of *noblesse oblige* and charity, undercut the extent to which someone who is low in efficacy and represented with Contempt is actually subject to indifference and intolerance.

Study 3 measured verbal responses to hypothetical events involving an imaginary person described with a single “feeling about”, or attitude – Love, or Respect, or Hate, etc. On the one hand, it is remarkable that such a minimal manipulation, devoid of all other relational information, produced such clear results, at least comparing widely divergent attitudes (e.g., Love and Hate). On the other hand, the experience-distant nature of the manipulation could explain the similar results among positive and negative attitudes, and the cleavage of Contempt with the positive attitudes. Contempt may well moderate emotions in line with the predictions of Gervais and Fessler (2017) (e.g., indifference and intolerance), yet prescriptive norms of charity and forgiveness may have skewed answers towards a compassionate and tolerant form of contempt. More generally, the results here could reflect nothing more than local “discourses on emotion” (Abu-Lughod & Lutz 1990), rather than the patterning of actual emotional experience. However, the results with Hate undercut this criticism in its strongest form. Hate is proscribed in a Fijian village, both in traditionalist discourse and in Christian doctrine. Nowhere is it said that happiness at another’s death is Fijian, good, or even acceptable. Yet participants in Study 3 reported feeling as much ‘happiness’ (*marau*) at the death of someone hated as ‘sadness’ (*luluvu*) or ‘anger’ (*borisi*). Participants appeared to be reporting from their personal experience more than reciting a norm.

Data on the functions of attitudes within actual relationships – their correlations, their causes, and especially their behavioral consequences – may clarify the cleavages among sentiments. Gervais and Ross (In Prep) present data that villagers readily report feeling ‘hate’ (*sevaka*) and ‘contempt’ (*beci*) towards other specific villagers, and these two attitudes are correlated within relationships, yet they track different relational affordances, and they predict divergent behaviors in different RICH economic games – ‘contempt’ predicting low rates of giving to others, while ‘hate’ predicts active spite.

## 6 General Discussion

Fijians pragmatically and intuitively, if not explicitly, distinguish between evaluations of relationships (“feelings about”, *attitudes*) and responses to relational



events (“feelings because”, *emotions*). They do not, as far as I could ascertain, explicitly lexicalize this distinction in simple terms like “emotion” and “attitude”, but it emerged in the distinct sets of terms used most frequently in the different structured interviews of Study 1. While there was no clear distinction between attitudes and emotions in Study 2 (each cluster of the HCA contained both), the clusters appeared anchored by attitudes, and the two-dimensional MDS solution appeared undergirded by social-relational axes. Study 3 provided evidence to support the hypothesized causal links among attitudes and emotions, particularly in the direction of attitudes moderating emotions across scenarios.

There was a suggestion in Study 2 that Yasawans conceptually link attitudes and emotions that are causally linked – for example, ‘love’ and ‘compassion’, ‘hate’ and ‘anger’, ‘respect’ and ‘admiration’. While Study 3 showed that attitudes are causally linked to multiple emotions, and that divergent attitudes can lead to the same emotions at different times, the *encounter* scenario suggested that particular attitudes have ‘default’ emotional dispositions that are engaged simply by the presence of another, and likely also by their thriving (e.g., *prize*). Such ‘default’ emotions correspond to the ‘latent emotions’ implicated in many treatments of attitudes by emotions researchers (e.g., Lazarus 1991; Frijda 1994), and they may be salient components of attitude concepts across societies.

The ASE framework, as an approach to the causal-functional networks underlying affective experience, ascribes a potentially universal grammar to affect that is nonetheless consistent with cultural variation in the experiences and meanings of particular affective states. Specifically, the framework can illuminate cultural variation in affective worlds as differentially salient attitude-emotion linkages across ecological, relational, and normative contexts. Attitude concepts should be more or less tinted with the particular emotions that they tend to evoke. Beyond ‘default emotions’, the emotional pluripotency of attitudes implies that the frequency of different scenarios involving particular kinds of relationships – and hence the most common experienced progressions from particular attitudes to particular emotions – will influence the experienced structure of affect, and likely the conceptual structure as well. Love may *mean* happiness or sadness, compassion or lust, depending on the prototypical situations in which relationships of dependence are involved. This may explain variation in the meaning of the nearest translations for “love” across societies, for example in the Pacific. Lutz (1988) argues that ‘love’ (*fago*) on the Micronesian atoll of Ifaluk is less about limerence, joy, and contentment, as connoted by the English term, and more about compassion, pity, sadness, and loss. From this Lutz argues for the cultural construction of affect and incommensurate affective worlds across cultures. However, as Study 3 demonstrates,

a Pacific term for 'love' (*lomani*) can be associated with happiness, compassion, and sadness across different situations, even if its closest association is with 'compassion' (*loloma*). Indeed, across Polynesia, 'love' is associated with a cluster of meanings including "concern, kindness, hope, sadness, care, help, gifts, sharing, and sexual love" (Morton 1996, 80). Yet as Lutz acknowledges, on a tiny coral atoll such as Ifaluk, 'love' implies separation, longing, and loss because these are the emotions most saliently mobilized in a dependence relationship when it is readily exposed to the unpredictable power of the Pacific Ocean, and tested by long travels to markets and education.

A second upshot of the ASE framework is that societies can vary in whether they emphasize the enduring evaluative core of relationships (i.e., attitudes), or more fleeting emotions as they index discrete events and influence physiology, motives, and behavior. Such a distinction is apparent in comparisons of Pacific affect lexicons and those of Western English speakers (Lutz 1982). These differences articulate with ethnopsychological differences in the salience of social-relational connections compared to subjective experience, and likely follow from socio-ecological differences in relational interdependence, as well as differences in the lived frequencies of deep-engagement relationships, and differences in the cultural valuation of independence and relational mobility (Markus & Kitayama 1991). The distinction between emotions and attitudes may thus provide a fruitful dimension for considering the axes along which understandings of self and other vary across cultures.

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