Quantitative Questions, Qualitative Answers:

The Cultural Meaning of Externally Oriented Thinking in a Chinese Psychiatric Sample

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ABSTRACT

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Jie Chang

Adaptive emotional norms are frequently assumed, and often go unexamined, when emotional constructs originating from the West are exported to other cultural contexts. The current study uses a mixed-methods design to examine alexithymia, whose underlying normative assumptions may be leading to over-pathologization and psychometric difficulties in cross-cultural usage. The externally oriented thinking (EOT) component of alexithymia, measured by the 20-Item Toronto Alexithymia Scale (TAS-20), shows well-recognized poor psychometric properties and potentially different but adaptive normative levels in non-English samples. In this two-part study, I first replicate and demonstrate past findings of poor internal consistency and weak model fit of the EOT subscale of the TAS-20 in a Chinese clinical sample ($N = 276$). To explain the quantitative observations, I then conduct a thematic analysis of audio-recorded interview responses using a subset of the sample ($n = 23$), who were administered the Toronto Structured Interview for Alexithymia. The qualitative results reveal that Chinese respondents demonstrated EOT tendencies such as organizing and analyzing experiences based on factual attributes, as well as engaging in more consideration of norms and less mentalization of feelings than normatively expected for Euro-Canadians. These findings provide explanations for EOT measurement issues from both task and conceptual levels. Integrating cultural emotion theories, I also consider the relative adaptiveness of EOT in service of specific cultural goals while challenging the appropriateness of its original 'Western' pathological assumptions. Implications of current findings for clinical practise, acculturative adjustment, and future empirical studies of attention to emotions are discussed.

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People in "Western" cultural contexts tend to value internal attributes such as emotions and thoughts, and display great interest in seeking and utilizing this information in daily life (Suh, Diener, Oishi & Triandis, 1998). Rooted in these traditions, psychologists of emotion tend to adopt a similar perspective, which subsequently informs the constructs they develop and apply. One such construct is alexithymia. People with alexithymia are limited in their ability to recognize and express their feelings, and also tend to have low interests in their internal, emotional states (Taylor, 2018). The consequence is that low interest in emotional states is considered maladaptive by alexithymia researchers and by clinicians familiar with this literature.

However, the assumption that low interest in emotions reflects pathology rests on 'Western' cultural beliefs. Cultural psychology research suggests that people from other cultural contexts may not share this high normative interest in emotional states (Dere et al., 2013; Gendron, 2017; Wang, 2001). Therefore, when 'Western' conceptions of alexithymia are exported to another cultural context with different local norms about emotions, inattention to the cultural variation might lead researchers and clinicians to mistakenly identify pathology when none exists. Cultural research on alexithymia is needed to address this concern and, in so doing, might also help resolve the cross-cultural psychometric difficulties endemic to this literature. This thesis will seek to address the above mentioned cultural and psychometric concerns through describing quantitative and qualitative findings of alexithymia in a non-Western sample.

Alexithymia

History of Alexithymia

Characteristics of alexithymia were first described in Sifneos and Neimah's work with psychosomatic patients who showed marked difficulties with expressing and understanding their

feelings (as cited in Taylor, 2018). Sifneos coined the term “alexithymia”, literally meaning “no words for feelings” (De Gucht & Heiser, 2003). Sifneos and colleagues proposed alexithymia to be characterized by four facets: (1) difficulty identifying feelings; (2) difficulty describing feelings; (3) reduced imagination with scarce fantasies; and (4) an externally oriented thinking style with focus on concrete stimuli (as cited in Luminet, Rimé, Bagby, & Taylor, 2004).

Although originating from psychoanalysis, the construct of alexithymia has garnered wide attention and stimulated research from cognitive, biological and psychopathological perspectives. It has been linked to physical illnesses, mood and substance abuse disorders, and social and interpersonal difficulties (Luminet et al., 2018). The large and expanding database of alexithymia has been facilitated by the development of the Toronto Alexithymia Scale-20 (TAS-20) (Bagby, Parker, & Taylor, 1994). Since its development, the TAS-20 has been one of the most utilized instruments for measuring self-reported alexithymia with generally strong validity and reliability (Sekely, Bagby & Porcelli, 2018).

Instruments for Measuring Alexithymia

The availability of the TAS-20 has facilitated widespread research on alexithymia. I will first briefly review this instrument’s design and psychometric properties, and also introduce a related, observer-rating measure of alexithymia: the Toronto Structured Interview for Alexithymia. Both tools are used in the current study.

Toronto Alexithymia Scale (TAS-20). The TAS-20 is a 20-item self-report measure originally developed and validated in English (Bagby, Parker, & Taylor, 1994). Items are rated on a five-point Likert-type scale, with five negatively-keyed items; higher scores indicate higher levels of alexithymia. The original validation and most cross-cultural validations support a three-factor structure: Difficulty Identifying Feelings (DIF; 7 items; e.g. I am often puzzled by

sensations in my body.), Difficulty Describing Feelings (DDF; 5 items; e.g. I find it hard to describe how I feel about people.) and Externally Oriented Thinking (EOT; 8 items; e.g. Being in touch with emotions is essential.). The imaginal processing factor was discarded due to problems developing a set of items meeting pre-established psychometric standards. In addition to this standard three-factor solution, subsequent validations of the TAS-20 have at times also found evidence for a two-factor model (Kooiman, Spinhoven, & Trijsburg, 2002), an alternative three-factor model (as cited in Müller, Bühner, & Ellgring, 2003), and a four-factor model (Müller et al., 2003).

Toronto Structured Interview of Alexithymia (TSIA). The Toronto Structured Interview of Alexithymia (TSIA) (Bagby, Taylor, Parker, & Dickens, 2006) was developed in response to critiques of self-reported alexithymia, which argues that valid reports of alexithymia depend on adequate insight to one's feelings—in direct contradiction to alexithymia. Since having the trait itself weakens insight (Lane, Ahern, Schwartz, & Kaszniak, 2002), external raters may provide more valid alexithymia ratings.

The 24 questions on the TSIA prompt respondents to provide examples of when they engaged with their internal states, for example, when they identified, expressed or reasoned with their feelings. An interviewer rates each response on a scale of zero to two, with higher scores indicating higher levels of alexithymia. The questions load onto a four-factor model, namely DIF, DDF, EOT, and Imaginal Processes (IMP). In its Canadian development, the TSIA demonstrated good model fit and parameter loadings (Bagby et al., 2006). It also showed reliability and validity in several European languages (Caretti et al., 2011; Grabe et al., 2009), and measurement equivalence across language group, gender and clinical status (Keefer, Taylor, Parker, Inslegers, & Bagby, 2015).

Psychometric Issues with the EOT Factor

The TAS-20 has been translated into more than twenty languages and cultural groups (Ryder, Sunohara, Dere, & Chentsova-Dutton, 2018; Taylor, Bagby & Parker, 2003). The three-factor structure of the TAS-20 generally fits well in most samples (Kooiman et al., 2002; Müller et al., 2003; Taylor et al., 2003). However, research has consistently identified significant psychometric issues with the EOT subscale. Despite having a higher number of items, this subscale has shown low reliabilities and non-significant parameter estimates in most translations (Taylor et al., 2003).

Chinese-heritage samples well demonstrated shortcomings of the EOT factor, namely, high subscale scores, low internal consistency, and poor parameter loadings. Chinese psychiatric and student samples showed elevated EOT levels relative to Euro-Canadian samples (Dere et al, 2012, 2013). Mandarin TAS-20 validation studies in Taiwan and Mainland China showed unacceptable to low internal consistencies, and poor test-retest reliability on the EOT subscale. In one validation study, three out of eight EOT items did not exceed the conventional acceptable confirmatory factor loading of 0.3 (Brown, 2015, p. 115), while all EOT items in the original Euro-Canadian validations did (Bagby et al., 1994; Zhu et al., 2007); factor loadings for the other Chinese validation was not reported.

Cultural Issues with the EOT Factor

The EOT construct came from the French concept *pensée opératoire,* which is characterized by utilitarian thinking and a focus on concrete, external events (Taylor, 1984). High EOT corresponds to placing more importance on external and concrete facts and less on one's internal emotional experiences (Dere et al., 2012). Sample items from the TAS-20 EOT

subscale are “I prefer talking to people about their daily activities rather than their feelings” and “I find examination of my feelings useful in solving personal problems” (reverse coded).

Various researchers have criticized the alexithymia construct for depending on Western-based psychological ideals and for imposing these ideals on other cultural contexts (Dion, 1996; Kirmayer, 1987). Specifically, the Western, culturally desirable emphasis on internal states (i.e., “internally oriented thinking”) was criticized for not generalizing to other cultural contexts (Dere et al., 2012). This led to the argument that EOT elevations in at least some other cultural contexts may be culturally meaningful for normative, rather than pathological, reasons (Ryder & Chentsova-Dutton, 2012; Ryder, Yang, et al., 2008). In contrast to DIF and DDF, EOT reflects a general preference to engage with emotions. While this preference can be modulated by social factors and occur in various levels, it reflects a personal or socially-shaped choice rather than an inability (Coffey, Berenbaum, & Kerns, 2003; Dere et al., 2012; Ryder et al., 2008). From this perspective, EOT may be more aptly characterized as a “cognitive style rooted in cultural values about emotion” (Ryder et al., 2018, p. 41).

To date, studies of EOT from an explicitly cultural standpoint have only been conducted in Chinese cultural contexts. Dere and colleagues (2012, 2013) found that cultural values such as modernization and Euro-American values negatively predict EOT levels. These findings raise the possibility that high EOT levels in Chinese cultural contexts reflects adherence to (1) cultural norms of less attention to internal experiences, and (2) cultural priorities among subjective versus objective descriptions of experience (Ryder et al. 2018). Given the limited research in this field, the impact of cultural context on the conceptual and psychometric problems with EOT would benefit from further investigation.

Cultural Differences in Emotional Norms

Differences in tendencies and beliefs related to normative emotional life have been noted across cultural dimensions. Chinese cultural contexts are considered to be collectivistic whereas Canadian cultural contexts (where the original TAS-20 was developed and validated) are considered to be individualistic (Triandis, 1993); consequently, they have different social goals, and hence different social needs. People from individualistic cultural contexts tend to pursue a *unique* self, and thus prioritize internal emotional goals, as such experiences are central to one's identify and self-esteem. In contrast, people from collectivistic cultural contexts tend to pursue a *socially-connected* self, and thus prioritize instrumental goals such as having good social connections and stable social status; internal preferences may be sacrificed in pursuit of these goals (Kim & Lawrie, 2019; Markus & Kitayama, 1991).

When making judgements with these respective cultural goals, the individualistic self values internal information such as emotions and thoughts, whereas the collectivistic self values external information such as social roles and public images (Suh et al., 1998). Although collectivistic selves, including in Chinese cultural contexts, are aware of their internal states, they judge this information as irrelevant to important decisions (Potter, 1988; Suh et al., 1998). They also rate self-centered emotions are as less useful and to prompt less emotional reactivity (Chentsova-Dutton & Tsai, 2010; Chow & Berenbaum, 2012).

Beliefs about the nature of emotions also follow from salient cultural goals. Collectivistic emotions are situated in social relationships – emotions are believed to reflect an objective reality which all others are expected to share if in similar circumstances. By contrast, individualistic emotions are situated subjectively within oneself, and are believed to reflect a subjective experience not shared with others (Mesquita, 2001). Documentations of cultural differences in

many aspects of emotional processes have only began to emerge within the last two decades, setting the stage for more to be uncovered (Kitayama et al., 2006; Tsai, Knutson, & Fung, 2006).

The Current Study

This research is presented in two parts. The first, quantitative study is a confirmatory factor analysis of the TAS-20, that seeks to replicate the previously noted psychometric shortcomings of the instrument. The second study is a thematic analysis of TSIA responses from Chinese psychiatric outpatients, where I qualitatively explore patterns in Chinese respondents' data to demonstrate on facets of alexithymia. The inductive nature of this qualitative inquiry, independent from existing empirical frameworks, allows the possibility of uncovering novel, ecologically valid response patterns unaccounted for in current alexithymia research. The overall mixed methods approach allows for establishing convergence between quantitative and qualitative findings, and utilizes qualitative findings to inform and explain the quantitative observations.

Quantitative Study

In this study, I examine the factor structure and reliability of the TAS-20 in a Chinese psychiatric sample. I expect to demonstrate the previously reported psychometric weaknesses of the TAS-20, particularly, low reliability and model fit for the EOT subscale.

Method

Participant recruitment. Detailed descriptions of the recruitment sites and process has been described in another published study (Dere et al., 2013). To briefly summarize, participants were recruited from three hospital-affiliated psychology outpatient clinics in Hunan province, China, in 2008. Two clinics were located in the city of Changsha and served an urban population. One clinic was located in the city of Huaihua, a medium sized city, and served

mostly rural populations. This arrangement ensured that the final sample consisted of individuals with various levels of modernization and urbanization. The study received institutional approval from all involved sites.

The initial sample of participants were 308 psychiatric outpatients presenting with a variety of psychological symptoms, and were referred by their treating clinician to the study. Participants were informed that their decision to participate will not affect their care. Exclusion criteria are having past or present psychosis, mania, or neurocognitive deficits. Participants completed a package of questionnaires; I will only discuss those relevant for the present study.

Instruments. Participants answered basic demographic questions and completed the Chinese TAS-20. The Chinese TAS-20 used in the present study was validated in Chinese student and clinical samples by Zhu and colleagues (2007) (see Appendix A). The Chinese TAS-20 replicated the original three-factor structure, but showed low internal consistencies on the DDF and EOT subscales, and a higher EOT score compared to Euro-Canadian means. The latter findings replicate previous literature.

Analyses. All analysis was performed using R (*R core team, 2017)*. Psychometric analyses were performed using the *Psych* package (Revelle, 2017); confirmatory factor analysis was performed using the *Lavaan* package *(*Rosseel, 2012), with maximum likelihood (ML) procedures. In the confirmatory factor analysis, I follow the recommendations of Brown (2015) and report fit indices assessing absolute fit (χ^2, SRMR), parsimony correction (RMSEA), and comparative fit (CFI and TLI). Cutoffs of adequate fit (SRMR < .10, RMSEA < .08, TLI/CLI > .90) and excellent fit (SRMR < .08, RMSEA < .06, TLI/CLI> .95) were used (Brown, 2015; Hu & Bentler, 1999; Vandenberg & Lance, 2000).

Following Müller and colleagues' (2003) work testing competing TAS-20 factor structures, and Zhu and colleagues' (2007) subsequent examination of these models in Chinese samples, I test the following five models:

a) One factor model: All items load onto a single alexithymia factor.
b) Two factor model: Items load onto DIDF factor (items 1, 2, 3, 4, 6, 7, 9, 11, 12, 13, 14, 17), or an EOT factor (items 5, 8, 10, 15, 16, 18, 19, 20). For simplicity, I use DIDF – "difficulties identifying and describing feelings" to refer to a combined DIF/DDF factor.
c) The standard three factor model (Bagby et al., 1994): Items load onto a DIF factor (items 1, 3, 6, 7, 9, 13, 14), a DDF factor (items 2, 4, 11, 12, 17), or an EOT factor (items 5, 8, 10, 15, 16, 18, 19, 20).
d) An alternative three-factor model: Items load onto a DIDF factor, a pragmatic thinking factor (PR) (items 5, 8, 20), or a lack of subjective significance or importance of emotions factor (IM) (items 10, 15, 16, 18, 19).
e) Four factor model: Items load onto one of four factors, DIF, DDF, PR or IM factors.

Results

Preliminary screening. The full sample consisted of 308 psychiatric outpatients. Two participants did not complete the TAS-20 and were excluded. Skewness and kurtosis of each TAS-20 item were satisfactory according to criteria proposed by Kline (2011, p. 76). No bivariate or multivariate collinearities were observed. Univariate outliers were not truncated because the rating scale only ranged from one to five, which would result in the removal of legitimate responses. Following recommendations of Leys and colleagues (2018), 28 multivariate outliers were identified using a robust minimal covariance determinant approach with a breakdown point of .25; these outliers were removed. The final sample for analysis

consisted of 276 participants (60% women), with a mean age of 33 (standard deviation: 11.8). Demographics information is presented in Table 1.

Psychometric properties. Table 2 presents the descriptive and internal consistency statistics of the explored factors. Internal consistency for the full scale was .83. Factors related to EOT had poor coefficient α and interitem correlations. Contrary to expectations, mean scores for the full TAS-20, and DIF and DDF subscales were significantly higher in the urban (Changsha) site than the rural site (Huaihua), *t*s ≥ 2.69, *df* ≥ 200, $p \leq .005$. Males scored higher than females on the DDF subscale, $t = 2.12$, $df = 237$, $p = .04$. Weak but significant negative correlations were observed between the full scale TAS-20, DIF and DDF with age, and EOT with education level, with *r*s < -. 194, *p*s < .01.

Confirmatory factor analysis.

Model fit and factor loadings. Goodness-of-fit indices of the standard three-factor model suggested poor fit with the data: $\chi^2(167) = 369.838$, $p < .001$, CFI = .871, TLI = .853, RMSEA = .066 (90% CI: [.057 – .075]), SRMR = .061). In this model, all items of the DIF and DDF subscales significantly loaded on and exceeded the conventional salient factor loading of .30 (Brown, 2005), indicating adequate loading onto their respective factors. In contrast, only two out of the seven items significantly loaded onto the EOT factor, with only one (item 8) having a salient loading. Inspection of residuals revealed that item 8's error variance did not differ significantly from zero, suggesting that it likely drove estimation of the entire EOT factor. Contrary to theoretical expectations, loadings for two of the EOT items were also negative.

Other tested models also showed inadequate fit. The two-factor model was a better fit than the one factor model, $\chi^2 = 13.10$, $df = 1$, $p < .001$. The standard three-factor model did not show significantly better fit compared to the two-factor model, $\Delta\chi^2 = 4.30$, $df = 2$, $p = .12$, but

the alternative three-factor did so, $\Delta\chi^2 = 11.36$, *df*=2, $p = .003$. The four-factor model was a significant improvement over both the standard and alternative three-factor models, $\Delta\chi^2 \geq 17.43$ 24.49, *df*=3, *p*s <. 001. Model fit indices are presented in Table 3.

Consistent with the loadings for the standard three-factor model, factor loadings of the remaining models also showed patterns of: (1) large and significant loadings onto the DIDF-related factors; (2) small and non-significant loadings onto the EOT factors with some atheoretical negative loadings (items 18 and 19); and (3) one exceptionally large loading (> .90) onto the EOT factor which may have driven factor estimation. Parameter estimates for all tested models are shown in Table 4.

Factor scale correlations. Factor correlations in the tested models are shown in Table 5. In models with separate DIF and DDF factors, DIF and DDF were indistinguishable. The IM factor was minimally and non-significantly correlated with other factors. EOT and PR both moderately correlated with DIDF factors. Absolute correlations ranged from .02 (IM-DIF) to over 1.00 (DIF-DDF).

Post hoc ancillary analysis. In light of the poor fit of the investigated models and greater-than-one correlations between the DIF and DDF factors, the standard three factor model (c) was further explored in order to characterize areas of model misfit. Modification indices showed potential correlated errors between items 1 and 2, loading onto DIF and DDF, respectively. Closer investigation of item content (*1. I am often confused about what emotions I am feeling; 2. It is difficult for me to find the right words for my feelings*) showed a potential causal relationship between the two items, such that endorsing item 1 will logically lead to endorsing item 2. Thus, these two items were allowed to covary. This new model (f) was a better fit than the standard three factor model, $\Delta\chi^2 = 34.784$, *df*=1, $p < .001$, and the correlation

between DIF and DDF was below one. However, it still did not meet criteria for satisfactory fit based on fit indices, and DIF and DDF were still too highly correlated to be interpreted as separate factors.

Given the observation that item 8 was the only large loading on EOT, a model without item 8 was tested. In this model, four out of the remaining seven items significantly loaded onto EOT, three having acceptably salient loadings. Notably in this model, the large correlations between EOT with DIF and DDF (.60 and .53, respectively) decreased to minimal to small correlations of .06 and .17, respectively.

Discussion

Overall, divergent conclusions can be drawn for factors encompassed within the "difficulties identifying and describing feelings" (DIDF) factor and those encompassed within the "externally oriented thinking" (EOT) factor of the TAS-20. Factors making up the former showed good psychometric properties and model fit, but separate factors within it were not distinguishable; factors making up the latter showed poor psychometric and model fit.

Independent dimensions. While the authors of the TAS-20 maintain that the scale is best utilized as a total score (Sekely et al., 2018), present results support the notion that alexithymia is a multi-dimensional construct (Dere et al., 2013; Müller et al., 2003). Factor analysis of the TAS-20 with other emotional ability instruments found DIDF and EOT to load unto distinct dimensions of "clarity of emotions" and "attention to emotions" (Coffey, Berenbaum, & Kerns, 2003; Palmieri, Boden, & Berenbaum, 2009). Cluster analysis of the TAS-20 in a Chinese college sample also provided evidence for conceptually divergent dimensions as 77% of participants showed high EOT with normal DIF and DDF levels (Chen, Xu, Jing, & Chan, 2011). In the current sample, the contrast between model and psychometric fit of DIDF

and EOT suggests that one dimension may be better defined and more statistically robust than the other, at least in Chinese samples.

Psychometric issues. In the present sample, further differentiation of DIDF was not supported – high DIF-DDF correlations suggested these factors are indistinguishable. Poor construct discriminability between DIF and DDF has been reported in literature (Bressi et al., 1996; Kooiman et al., 2002; Simonsson-Sarnecki et al., 2000) and therefore a single DIDF factor may be theoretically justified (Müller et al., 2003). However, others dispute single DIDF factors (Meganck, Vanheule, & Desmet, 2008), and a previous Chinese clinical validation showed distinctions between DIF and DDF factors (Zhu et al., 2007). Despite the lack of distinction, items on these factors showed strong parameter loadings and strong internal reliability as combined or separate subscales, consistent with previous findings of good psychometric properties of these factors (Taylor et al., 2003).

In contrast, the EOT factor showed very low factor loadings with some negative loadings, low Cronbach's α, and near-zero inter-item correlations. In the literature, the EOT factor has long been criticized for its lack of item homogeneity, dismal reliability, and poor parameter estimates (Kooiman et al., 2002; Taylor et al., 2003). In our sample, poor model fit appeared to be driven by one very highly loading item (item 8), resulting in extremely low loadings for most other items. Once this item was removed, the loadings of the remaining items more closely resembled the suboptimal EOT loadings reported in literature (Kooiman et al., 2002; Zine El Abiddine et al., 2017), where around half of the items acceptably load onto EOT.

It is unclear why item 8 ("*I prefer to just let things happen rather than to understand why they turned out that way*") was such a strong estimator of EOT. However, this phenomenon was not unique to the present sample: item 8 was the only substantially large estimator of EOT in a

German TAS-20 validation, and the highest estimator of EOT in Chinese student and clinical samples (Müller et al., 2003; Zhu et al., 2007). Furthermore, post hoc removal of item 8 substantially decreased the correlation of EOT with DIF or DDF. Thus, the item seemed to be more closely associated with DIF and DDF than with other EOT items, which could lead model estimation to favour its contribution to the EOT factor. However, estimation of EOT favouring item 8 may also lead to poor fit for the overall model given the low internal consistency among EOT items. Nevertheless, the strong contribution of this item to EOT in non-English samples, and its influence on EOT's relationship with DIF and DDF, clearly indicates that this item plays a key role in EOT model fit. Future research should explore the content of this item qualitatively for potential cultural nuances which may inflate its influence to the EOT factor.

When EOT was split into pragmatic thinking (PR) and lack of importance of emotions (IM) factors, the associations between the IM factor and the rest of the TAS-20 factors were minimal; this finding is consistent with literature (Müller et al., 2003). The lack of association may be due to IM's low item homogeneity, or perhaps IM is truly orthogonal to the DIDF dimension. In contrast, the PR factor was strongly associated with DIDF but, similar to the EOT factor, suffered from inflated item 8 loading. Of note, while both PR and IM had some items with salient parameter loadings, the loadings for the majority of their indicators remained low. Together, these results suggest PR and IM are incoherent as independent constructs.

Summary and sample specific issues. Considering model fit indices and parameter estimates, the results indicated that the alternative three-factor model (d) provided the best approximation to the data. However, none of the models reached the standard for good model fit. While there is questionable divergent validity, DIF and DDF factors in the present sample supported the conceptual model of alexithymia. In contrast, various psychometric issues were

observed for the EOT factor, namely, it had poor parameter estimates, low internal consistency and certain items disproportionally affected model estimation and its relationship to other TAS-20 factors. The extent of EOT psychometric issues in the present sample also appeared to be more severe than those previously reported in literature.

In addition to a possible publishing bias for TAS-20 validations with adequate results, one reason for the particularly poor psychometric properties of the EOT factor in the current sample may be that this sample uniquely included a small-city/rural recruitment site. Higher overall alexithymia has been found in individuals with lower social economic status and education (Ryder et al., 2018), and is significantly associated with rural upbringing (Joukamaa et al., 2003). Inclusion of rural participants also implies that the overall sample will be less modernized, which has been shown to affect EOT (Dere et al., 2013). Past TAS-20 validations occurred in college samples, or in psychiatric samples from cities with a university, both of which indicate city-dwelling demographic characteristics and adequate modernization. In the current TAS-20 administration, it may be that having a mixed urban and rural sample led to more variability in the EOT factor, making it even less internally consistent.

Replicated issues and potential cultural explanations. In addition to explaining the particular issues which occurred in the present sample, the more interesting and broadly applicable question is why the psychometric properties of the EOT subscale are frequently poor. Our results exemplified some common reported flaws of the EOT factor. Given that these shortcomings are particularly prominent in non-English translations of the TAS-20 (Dion, 1996; Taylor et al., 2003, book p. 35), there may be a cultural explanation.

Despite clear characterizations of EOT's psychometric issues, few explanations have been offered about why this is the case. One study which attempted to unpack this was Dere and

colleagues (2012), which found that modernization and European-American values mediate the effect of cultural group membership (Chinese or Euro-Canadian) on EOT. This offers a culturally-shaped and non-pathological interpretation of EOT, a departure from its original maladaptive conceptualization (Bagby, Taylor, & Ryan, 1986). Challenging the pathological assumption of EOT concurrently challenges assumptions underlying what constitutes normal and deviant emotional behaviour. Many aspects of emotions differ across cultures (Kitayama et al., 2006; Tsai et al., 2006), and it may well be that some underlying assumptions of EOT are unique to the Western cultural settings where the construct was conceived and first studied. Subsequently, we might anticipate poor internal consistency and construct validity in cultural contexts where these assumptions do not hold.

Unfortunately, existing research offers very few clues on what these assumptions might be. Since EOT is associated with an "attention to emotions" dimension (Coffey et al., 2003; Palmieri et al., 2009), the assumptions may be related to the cultural focus placed on emotions (Dere et al., 2012). Very limited information can be glimpsed from quantitative explorations on this topic, and there is a lack of available hypotheses to pursue. This makes a clear case for the necessity of qualitative investigations. Qualitative studies of alexithymia in, cultural contexts dissimilar from the construct's Western roots, have the potential to characterize and challenge its hidden and untested assumptions, particularly with regard to externally-oriented thinking. In the next study, I focus on qualitative reports of externally-oriented thinking in the present Chinese sample in order to explore the validities of certain 'Western' assumptions about alexithymia.

Qualitative Study

Given the poor psychometric properties observed on the TAS-20, in this qualitative study I analyze the responses provided by a subset of sample participants on the TSIA and explore

their propensities to engage with emotions. With these portrayals, I hope to (1) generate explanations of the poor psychometric properties, and (2) characterize popular tendencies of how Chinese respondents engage with their emotions, and explain those tendencies in the context of cultural emotion theories and research.

Method

Epistemological Stance. The epistemological stance underlying this study is that of critical realism, which states that access to reality is mediated by socio-cultural meanings, and that interpretation of reality is influenced by the context (Chirkov, 2016; Clarke, Braun & Hayfield, 2015). In this view, sociocultural meanings are important constituents in explaining a phenomenon of interest, and they promote adopting a variety of methods in addressing the research question (Chirkov, 2016). Therefore, this stance favours placing emphasis on cultural meanings of the observed data patterns, interpreting these patterns in the socio-cultural context, and integrating a variety of evidence, both qualitative and quantitative, in order to understand and explain the phenomenon in depth.

Instrument development and participant selection. The instrument and manual for Toronto Structured Interview of Alexithymia (TSIA) (Bagby et al., 2006) was translated into simplified Chinese by Dr. X. Zhu in discussion with Drs. S. Yao and A. Ryder, and back translated by Dr. J. Yang. Developers of the original TSIA, Drs. G. Taylor and M. Bagby, were consulted on the development of this Chinese translation, which has not yet been formally validated. In this phase of the research, participants from the quantitative sample who have high

alexithymia, as measured by scoring over 50 points on the TAS-20, were additionally interviewed, in order to explore the manifestation of alexithymia in Chinese psychiatric patients.

Data collection and preparation. Thirty respondents participated in this phase of the research; doctoral clinical psychology trainees administered the TSIA, taking approximately an hour, with respondents at the hospital sites. As with the original English instrument, the items prompt respondents to provide examples on their behavioural tendencies related to the identification, communication and utilization of feelings, which the interviewer rates on a scale of zero to two. Some TSIA items have the same wording as items from the TAS-20, which allows direct examination of the respondents' understanding of some items. In this analysis, I did not compile or use TSIA scores as the idea was to analyze the responses independent of the established criteria for alexithymia.

Audio-recording of the interviews were transcribed by two Chinese speaking research assistants and myself. Of the thirty participants, seven participants were excluded due to missing interview audio (n = 1), substantially incomplete interviews (n =2), poor audio quality (n = 3), and study withdrawal (n =1). Interviews from the rural site were disproportionately affected by poor audio quality, which included strong rural accents preventing accurate data transcription. Poor audio quality and accented speech also resulted in small sections of missing data for other participants; therefore, responses were not analyzed if the missing data affected understanding of the full response. In the end, 23 participants were included in the final analysis. Complete transcripts were reviewed, but only items pertaining to the EOT factor were analyzed and coded, given the substantial problems with EOT raised by the quantitative phase of the study. These items are presented in Appendix A.

Data analysis strategies. The structured nature of the current dataset limited the potential approaches one could take. I decided to conduct a thematic analysis (TA) of the data, because TA is flexible for working with structured data and it approaches the analysis using systematic steps (Clarke et al., 2015). TA is a well-accepted qualitative method in psychology; its goal is to identify meaningful patterns across a dataset, independent of theoretical and epistemological frameworks (Braun & Clarke, 2006).

I conducted inductive TA, which uses raw data to drive the development of themes. This is done in order to maintain openness when characterizing the participants' description of their emotional experiences, while also recognizing that for such an analysis, it is impossible to be truly free of theoretical assumptions and prior knowledge in the content domain. I also analyze the data at a latent level, where I interpret identified patterns in the broader sociocultural context of China, Chinese psychiatric care, and the wider literature on culture and emotion in non-Western settings. As Chinese cultural settings tend to be 'high context', with less information explicitly said and more meaning derived from the interpretation of context (Kim, Pan, & Park, 1998), reasonable interpretation of meaning is also warranted for this particular population.

Development of coding scheme. Data analysis was conducted in Chinese. Responses to each EOT question were grouped under their respective questions. I read through the transcripts and developed bilingual codes following an iterative process, then categorized the codes. To ensure the reproducibility of codes, a second bilingual coder coded the data independently using this established coding scheme.

During coding, particular attention was given to how Chinese responses were similar or different from the non-alexithymic, non-pathological responses from the TSIA manual (Bagby et al., 2005). The TSIA manual consists of sample responses from real Euro-Canadian participants

to each question, which range from zero, indicating optimal and non-alexithymic behavioural tendencies, to two, indicating high alexithymia. Furthermore, zero-point responses are considered normative and adaptive in Euro-Canadian cultural contexts by alexithymia researchers. As my study did not have a Euro-Canadian comparison group, I used zero-point TSIA responses to represent typical and optimal Euro-Canadian tendencies. While this extrapolation may be limited, it is a reasonable substitute given the ecological validity and interrater reliability of these responses in the Euro-Canadian sample.

Researcher reflection. I am a Mandarin-English bilingual who has received most of my higher education in Canada, and identify with various aspects of both Euro-Canadian and Chinese cultural contexts. Given years of exposure to European-Canadian cultural contexts, it is more challenging for me to judge what may constitute normative Chinese tendencies or the generalizability of data patterns to the Chinese population. I also personally value pragmatic thinking, which may lead me to favourably judge non-emotional reasoning. Recognizing these biases, I focus on documenting the characteristics of the reasoning surrounding reported events during data analysis, and refrain from judging the generalizability or adaptiveness of the reasoning styles without substantial literature support.

Methodological integrity. I incorporated several validity procedures to ensure methodological integrity of the qualitative analysis (Dilley, 2010). Some transcripts were cross checked (n = 7) to ensure correct transcribing. This was discontinued as there were no substantial discrepancies in content or meaning except for minor filler-word transcription differences.

A second coder verified the codes and themes generated from my coding scheme. As the sample size was too small to calculate interrater reliability (McHugh, 2012), we looked for reasonable agreement in coding specific thinking patterns and behavioural tendencies. In order to

eliminate bias, I introduced into my coding scheme codes for patterns and tendencies presented in the TSIA manual but that rarely occurred in the present Chinese responses. The second coder coded each response following this scheme and was blind to the expected frequencies of each code. We particularly focused on verifying key findings of this study, which included externally oriented reasoning patterns and mentalization behaviours.

When reporting participant quotes, the original Chinese text was translated into English by me, and then back-translated to Chinese by the second coder. We then made slight modifications to the English translations to ensure that the meaning of the original text was well-preserved. Finally, our findings were triangulated with research adopting other theories and methods; corroborating evidence came from relevant studies in cultural psychology and cultural anthropology.

Results

Classification of experiences. Chinese respondents frequently misinterpreted questions about past *emotional* experiences and provided examples of constructive, non-emotional past experiences. When asked to think of a similar past emotional experience, many Chinese respondents provided examples of similar situational experiences instead, likely showing that they classify experiences based on shared factual attributes. The following respondent provided examples of thinking about a similar past situation which did not involve shared emotions (i.e., dealing with work problems):

> "At work, the first time I encounter difficulties, every time at work when I encounter difficulties, I slowly found ways to resolve it, and next time, when I encounter problems, technical [difficulties], I can follow what I did before to resolve it."

(M, 41 y.o.)[1]

Similar events can elicit similar emotions. Some respondents provided examples of past experiences with similar factual and emotional attributes. In these cases, respondents appeared to use similar situational attributes to inform emotional coping:

> "Before I was hospitalized, when I see [my] students not study I will definitively get worried. Now I feel that I probably don't have to be so worried, it's okay, after a while [the student] will slowly get better … Now I seem to have experience, knowing that being worried is useless, he [student] slowly and surely will get better, so I don't need to be so worried, I just continue doing what I need to do, yes.
>
> (F, 36 y.o., P1)

In contrast, optimal TSIA responses portrayed situations organized by similar emotions. Participants searched for situations where alike feelings were elicited; whether these situations share similar factual attributes with the current situation was not central.

> "Yes, if I recognize I'm having a feeling, I go back to when I had a similar feeling and try to understand why I'm feeling the way I do."
>
> (Bagby et al., 2005, p. 47) [2]

Chinese respondents rarely showed this organizational pattern; when they did draw on similar past emotional experiences, it was in the context of improving negative emotional regulation, as seen in previously mentioned P1 and the following example:

> "I think about, what was done in the past, and how to control my mood now."
>
> (M, 19 y.o.)

[1] Participant sex and age are presented in parentheses following each quote. A participant code is provided if this particular quote is referred to later in the text.

[2] Note that "Bagby et al., 2005" is the scoring manual for the Toronto structured interview of alexithymia.

Analysis of events.

Salient aspects. When a significant event happens, people think and try to make sense of it. First, they form an understanding of the event based on its salient aspects. Representing the situation based on feelings elicited in the situation was expected per the TSIA:

> "For example, my friend is in a bad relationship and after something bad happens she will complain to me. I will try to understand why I feel I have to help her instead of letting it go."
>
> (Bagby et al., 2005, p. 23)

In the current Chinese sample, significant events are often stated matter-of-factly even if it is emotionally significant. Very rarely were the feelings of the speaker the central focus. The external attributes of the situation, including objective facts, descriptions of what had happened, were more important in representing the situation:

> "To find the reasons [for problems], I would think about it. For example, others say that I and my husband, our looks, ages, all matched. So what is the reason, then, that I am still this way at home."
>
> (F, 58 y.o., P2)

In other words, for Chinese participants, the most salient and central aspects of an event or experience were the facts surrounding it. This kind of fact-focused analysis was rarely represented in the TSIA, particularly for question 7 (*Do you tend to just let things happen rather than trying to understand why they turn out a certain way?).* Sample maladaptive responses from the TSIA indicated less analysis in general, including both emotional and factual aspects; it did not account for individuals who solely analyzed the factual aspects of a situation/experience.

***Focus of analysis*.** Respondents analyzed the situations they reported by forming questions about aspects of the situation that they presumably find most interesting or relevant to address. Chinese participants investigated questions best answered by focusing on factual aspects of a situation. Examples of such *fact-oriented* analysis included attempts to establish norm violation or attribute responsibility:

> "For example, me and my sister in law, we have some friction … when she sees me but doesn't say hi, I can't understand why, because she is younger than me. She should say hi, as I [had] tried to help her out in many areas of life. But she, her personality is kind of proud, so maybe something I said offended her, so she doesn't acknowledge me … I always think about it, but, I feel that for this matter what she is doing is not right."
>
> (F, 36 y.o.)

Or to identify need for self-improvement:

> (following P2 above) "…First, it's because my personality is not upbeat, I don't suit his ideals. I also feel he doesn't suit my ideals, something like this. Second, my personality is solitary, friend circle is relatively small, this is also my weakness."

In contrast, TSIA examples showed that respondents engaged in *feeling-oriented analysis*, and explored questions better answered by analyzing the feelings of the speaker:

> " For example, in dealing with arguments with my roommate, I try to examine why I am feeling angry and why I am feeling put down."
>
> (Bagby et al., 2005, p. 15)

Outcomes. TSIA questions elicited example incidents which conclude in either a decision or a self-realization. The considerations leading to these conclusions may be based on external criterion such as social obligations and factual evidence, or based on one's feelings.

Chinese respondents emphasized one's social obligations when making decisions, especially in cases where the conclusion results in subsequent actions. These include following orders of a superior, or fulfilling duties of a specific social role:

> "Um, the supervisor assigns tasks for you to complete today, so you have to find time to complete it. This way it satisfies the supervisor's wishes, my own wishes should be put aside."
>
> (M, 41 y.o.)
>
> "I don't want to do [something] but I still need to; I need to do it by myself, there are no other ways, this is what should happen after you have a child."
>
> (F, 38 y.o.)

The following quote from the interviewer nicely summarized the importance of norms for decision-making in Chinese cultural contexts. It likely also reflected the lived experience of the interviewer as a member of this cultural group:

> Participant: "I have to do it. I need to do it, usually it should be done this, and this, way."
>
> Interviewer: "It's because you must do it this way, normally the society requires you to do it this way, you have responsibility to do it this way?"
>
> P: "Yes."
>
> (M, 22 y.o.)

Reflection of feelings. Participants also described integrating their feelings when making decisions, although this was less common. On these occasions, Chinese respondents described a

distinct style of emotional reasoning. In TSIA examples, feelings were explicitly reflected upon and how a particular feeling led to a decision was clearly articulated:

> "For example, in dealing with arguments with my roommate, I try to examine why I am feeling angry and why I am feeling put down. I use this to make the situation better. I realize that I don't have to be angry and I try to create a better conversation and arrive at a conclusion. I also consider why my roommate wants to make me angry."
>
> (Bagby et al., 2005, p. 15)

In Chinese respondents, feelings were almost never discussed in such clear ways for action related outcomes. Instead, feelings were used more intuitively – the contribution of feelings to decisions was acknowledged but its integration was less reasoned or reflected upon. Identification of emotions also appeared to be more generic:

> "When my mood is good I will do a little more; when it's not good I don't do as much"
>
> (P3007, M, 31 y.o.)
>
> "Sometimes I think about things I want to do. For example, when I am unhappy, I would go out and take a walk, surf the internet, kill some time. Or when I am happy, I will treat my classmates, roommates, to meals."
>
> (P2052, M, 22 y.o.)

The perceived importance of the situation may moderate whether respondents use feeling or fact-based reasoning strategies. Participants were more willing to use feelings to guide less consequential decisions.

> "For key things I don't follow my feelings. For example, when doing electives for Physical Education classes, which type of ball sport to choose. Normally I don't exercise

> regularly, but I needed to choose one as an elective. I watch basketball a lot, I have more feelings for basketball, I chose basketball."
>
> (P2085, M, 22 y.o.)

However, this is not to say that Chinese respondents do not explicitly reflect on feelings. They clearly reflected and drew conclusions based on their feelings when asked how they learn about themselves. There may be an increased propensity to use feelings for this question because the question specifically pertains to the respondents' own internal states, for which is little external information available. The perceived importance of the situation may also moderate this pattern, as opinions about oneself has fewer social consequences than taking an action:

> "Yes, I would understand myself [on the basis of feelings]. Um, when I see somebody succeed, I feel, more of a jealousy. I always think that I am still someone, someone not so noble."
>
> (P3035, F, 31 y.o.)

Data impressions. Original translators of the TSIA (X. Yao, personal communication, summer, 2007 X. Zhu, personal communication, summer, 2007), transcribers and coders of the present study (J. Weng, personal communication, June, 2018; Y. Yu, personal communication, July, 2019), and myself, had all spontaneously commented on the strange wording and logic of the TSIA items when applied to Chinese cultural and linguistic contexts. Some also noted unusualness of TSIA 0-point-responses in Chinese cultural contexts. Participants complained that questions were "peculiar" and "abstract", and many showed persistent confusion despite examples. In addition, some interviewers provided leading and restrictive examples that described, in our opinion, impulsively acting on, rather than thoughtfully considering emotions. Subsequently, study respondents rejected the impulsive examples and as a result, likely reported

more fact-oriented reasoning. However, this bias did not substantially impact our findings, as we took this bias into account and only categorized participant responses that demonstrated reasonably substantial analysis processes.

Verification with a second coder showed satisfactory agreement in categorizing reasoning patterns and mentalization behaviours. I and the second coder agreed on whether a response was feeling and/or fact-oriented most of the time. The second coder saw more examples to reflect simultaneous analysis of feelings and facts, more examples to reflect tendencies of self-improvement, and less examples to reflect social responsibility. Upon discussion, we reached agreement on all examples, and the frequency of self-improvement goals was recognized.

Discussion

While feeling-focused thinking was not absent, Chinese respondents preferred to classify and analyze situations using its factual attributes. When analyzing and making decisions on more important situations, they considered social norms or role responsibilities, and reserved consideration of feelings for less-consequential scenarios. Compared to explicitly reflected feelings in Euro-Canadian examples, Chinese respondents integrated feelings more intuitively when reasoning, although they may also explicitly reflect for inconsequential situations. Difficulties with understanding TSIA questions also suggested cultural unfamiliarity with item content, which appeared to extend beyond any translation issues.

Attention to factual information. It was not surprising to see that factual information is salient to Chinese respondents, both in recounting and classifying their experiences. Socialization in early Chinese childhoods has been shown to minimize discussion of emotions and instead to emphasize behaviours. American mothers were found to explain and elaborate on their three-year-old child's emotions, while Chinese mothers represented emotions as

consequences of behaviours and thus explained less about emotions to their children. The youngsters were already adapting their mothers' respective communication styles (Wang, 2001). Relatedly, European American mothers referred more to internal states such as thoughts and emotions when reading stories with their child, compared to Chinese mothers who referred more to behaviours (Doan & Wang, 2010). These socialization experiences likely established a preference for emotional information in European Americans, and a belief that emotional information is non-essential in the Chinese. Historical influences such as the Cultural Revolution may also have also weakened the role of emotional thinking in Mainland Chinese cultural contexts (as cited in Ryder & Chentsova-Dutton, 2012).

In adult samples, a Chinese-heritage group has been found to use more somatic and social words than an American group when talking about emotional events (Tsai, Simeonova, & Watanabe, 2004). Chinese psychiatric outpatients have shown higher spontaneous reports of somatic symptoms than Euro-Canadian outpatients (Ryder et al., 2008) – emphasizing somatic symptoms is also an example of focusing on tangible attributes of a condition. These findings corroborate the preference for factual information in the present Chinese sample.

Furthermore, studies show that such preferences may be culturally meaningful (Ryder & Chentsova-Dutton, 2012). Emphasis on somatic, rather than emotional, distress elicits more sympathy and support in Koreans (Choi, Chentsova-Dutton, & Parrott, 2016). When providing support, Japanese and Euro-American participants respectively offered more problem-focused and emotional-focused supports, suggesting cultural differences in the type of information one considers useful in times of distress (Chen, Kim, Mojaverian, & Morling, 2012). Taken together, in collectivistic contexts there may be pragmatic communication benefits to attending to factual aspects of a situation, which in turn shapes a preference for such information.

Social norm considerations. When thinking about a situation, Chinese respondents frequently considered social norms and obligations. These factors can also be considered as 'external information' as they are not internal to one's desires and have a relatively clear objective standard (Taylor, 2018). Respondents in the present sample incorporated hierarchical relationships and social obligations in their decision-making process. This is consistent with the Confucian ideal of correct behaviour with focus on rights and responsibilities of each interlocuter, and the emphasis on vertical relationships and conformity to norms typical of collectivistic contexts (Triandis, Bontempo, & Villareal, 1988, Bond, 1986). Referring to the needs and expectations of others, particularly superiors, are also typical of interdependent self-construal and has been observed in Chinese cultural contexts (Markus & Kitayama, 1991). The cultural need for attending to these external standards and obligations raise possible conceptual limitations underlying the TSIA; specifically, integration of select types of external information are necessary and adaptive in some contexts.

Mentalization. Concurrent to Chinese respondents preferring factual information, there is a preference for emotional information in Euro-Americans. This preference is demonstrated by the explicit reflection and reasoning of one's emotions in the TSIA manual. As such, the process of *mentalization*, or the "capacity to reflect on our mental states" (Jurist, 2005), is likely more normative and valued in Euro-American than Chinese cultural contexts.

There is scattered evidence for higher levels of mentalization in the West. 'Western psychologization' has been identified as a part of the Western cultural script for depression symptoms (Ryder et al., 2008). A study comparing United States and Himba ethnic participants found that compared to American participants who labelled expressions using mentalized states (e.g. 'angry'), Himba participants more often labelled facial expressions as physical actions (e.g.

'*looking at something'*) (Gendron, Roberson, van der Vyver, & Barrett, 2014). Furthermore, when free-sorting facial expressions, American participants used mental state distinctions such as anger or sadness while Himba participants used behavioural distinctions such as smiling or looking. This finding echoes the situation classification patterns found in my sample, where people classified situations based on similar situational rather than emotional attributes. In addition, discussion of emotions was described as 'peculiar' by Chinese rural people (Potter, 1988), suggesting a wary attitude toward explicit emotional talk; however, there has been a shift in many Chinese cultural contexts towards more emotional expressivity in recent years (Sun & Ryder, 2016). Nevertheless, construing emotions as mentalized states may remain substantially more normative to Western cultural contexts, thus, calling the assumed cross-cultural normalcy of 'internally oriented thinking' into question.

Adaptive values in a collectivistic society. To explain the deviance of the Chinese responses from the TSIA, it is necessary to situate the Euro-Canadian culture, from which the TSIA originated, and the Chinese culture, where the current dataset was collected, into their respective cultural dimensions of individualism and collectivism. We then consider how the preferred emotional tendency observed in this Chinese sample may be adaptive given the distinct cultural demands of a collectivistic society.

In the Chinese cultural context, collectivistic goals of fostering stable social connections and maintaining relational harmony are at the center of people's actions (Markus & Kitayama, 1991; Triandis, 1989). These goals may be satisfied by conforming to external guidelines such as social norms and responsibilities, and adopting a less threatening communicating style focused on factual information. More attention to facts and less mentalization of feelings are also

consistent with the expected insignificance of internal feelings in collectivistic cultural contexts (Chow & Berenbaum, 2012; Potter, 1988; Suh et al., 1998).

Fact-preference and mentalization may also be explained by distinctive cultural beliefs about emotion. Emotions are seen as objective realities in collectivistic cultures but subjective experiences in individualistic cultures (Mesquita, 2001). People who believe that emotions are objective realities may expect everyone to feel the same way when undergoing similar events. Therefore, in collectivistic cultural contexts, a description of the situation may be assumed sufficient for others to understand its emotional sequalae. This may explain why Chinese respondents only described the situation and reported seemly intuitive feelings without extensive explanation. In contrast, individualistic cultural contexts foster the view that emotions are subjective. It is then necessary, in these cases, for people to explain their mental activities and reasoning, in order to accurately represent their feelings to others. Thus, optimal TSIA response expected explicit reflection of feelings, likely because this process is key in ensuring accurate communications in the Euro-American cultural contexts.

Most importantly, empirical evidence suggested no repercussions for engaging in EOT behaviours in Chinese cultural contexts. Chronic emotional suppression is unrelated to negative psychological well-being for Hong Kong Chinese, suggesting no notable benefits for emotional expression (Soto, Perez, Kim, Lee, & Minnick, 2011). Emotions and norms were found to both influence life satisfaction in collectivistic cultural contexts, providing evidence that emphasizing external information also enhances personal well-being (Suh et al., 1998).

Taken together, one starts to see the value of engaging in externally oriented thinking processes in response to collectivistic cultural demands. The adaptiveness of EOT may speak to the normalcy of such tendencies in Chinese cultural contexts. Contrary to the pathological

assumptions of EOT in its original Euro-Canadian conceptions (Taylor, 2018), the present research advocates that EOT may be adaptive in response to particular cultural demands.

General Discussion

Consistent with the literature, a quantitative analysis of a Chinese psychiatric sample showed poor model fit of the TAS-20 three-factor solution, with especially inadequate parameter estimations and internal consistency for the EOT factor. Exploring the qualitative responses to EOT items on the TSIA, Chinese respondents appeared to take a factual focus when classifying, representing, and analyzing situations; they showed more consideration of social norms and obligations and less explicit mentalization than expected for Euro-Canadians. Both studies revealed conceptual and psychometric issues with the EOT factor.

Task Level Considerations

Qualitative explorations offered several clues for the poor construct coherence of EOT, and identified limitations in both the TAS-20 and TSIA. First, the TAS-20 failed to account for several common indigenous reasoning strategies in Chinese cultural contexts. For example, some items refer to “analysis” of a situation (TAS-20 item 5, item 8). “Analysis”, exemplified in the TSIA, often centers on one’s internal feelings of a situation. This is presumably a common Euro-Canadian approach to analysis, which Euro-Canadian alexithymia researchers expect participants to engage in to some extent. However, Chinese respondents engaged in a different style of “analysis”, where their thinking centered on analyzing external situation attributes such as norms violations and social obligations. Thus, Chinese respondents may be interpreting some items in an entirely different context than intended, consequently making their answers less consistent with other items explicitly referring to engagement with feelings (TAS-20 items 10 and item 18).

Second, researchers and respondents alike noted the obscurity of TSIA questions and the unusualness of optimal TSIA responses in Chinese cultural contexts, reflecting cultural unfamiliarity with scale contents. This critique similarly applies to the TAS-20 as some items have the exact wording. Why might some TAS-20/TSIA items be considered peculiar in Chinese cultural contexts? The qualitative results suggest that Chinese respondents may be less likely to explicitly reflect and mentalize feelings than Euro-Canadians. Therefore, when items refer to incidences of emotional reflection (TAS-20 item 18, item 19), it may be harder for Chinese respondents to generate relevant experiences on which to base their answers. The TAS-20 was confusing for Chinese respondents, because it assesses atypical behaviours in their cultural contexts. Moreover, the inappropriateness of some TAS-20 items in Chinese cultural contexts may also reflect some untested conceptual assumptions of EOT.

Conceptual Level Considerations

Empirical studies of alexithymia has found higher levels of alexithymia, driven by higher levels of EOT, in Chinese samples (Ryder, Yang, et al., 2008). In interviews with Chinese respondents, I observed a tendency to use factual information when reasoning and analyzing situations, which provided qualitative confirmation for higher levels of EOT in Chinese cultural contexts. These findings make the case for understanding the cultural contributions of EOT, because without it, the field of alexithymia may be operating under the culturally inappropriate assumption that emphasizing feelings is normative and even optimal for well-being. Unfortunately, there is a scarcity of mechanism research into the cultural shaping of EOT, a void that needs to be addressed.

The key assumptions EOT are grounded in individualistic values. In this cultural context, prioritizing one's internal feelings (Suh et al., 1998) and understanding emotions as subjective

(Mesquita, 2001) serve the need for enhancing one's uniqueness, and consequently shape people to focus on their internal experiences. Not doing so leads to social and psychological repercussions (Mesquita, 2001; Vanheule, Meganck, & Desmet, 2011). Thus, it is reasonable to expect EOT tendencies to be undesirable and maladaptive in individualistic cultural contexts.

Contrary to the above assumptions of EOT in individualistic cultural contexts, EOT tendencies actually match beliefs of the non-essential nature of internal experiences in collectivistic cultural contexts (Suh et al., 1998). Tendencies such as following social norms or being less reflective of one's feelings promote collectivistic cultural goals with no psychological repercussions. The overall utility of EOT tendencies in Chinese cultural contexts likely explains the higher level of EOT in Chinese samples (Ryder, Yang, et al., 2008; Zhu et al., 2007). Most importantly, higher incidences of EOT, and its facilitative roles to collectivistic cultural needs, suggest that EOT may likely be normative, or even desired, in Chinese cultural contexts.

Limitations

This study has two major limitations. First, only participants scoring high on the TAS-20 were selected for the qualitative study. It can be argued that the qualitative findings reflect the anticipated high EOT levels unique to this group, and thus cannot be generalized to the Chinese population. While this is a valid concern, I have detailed corroborating evidence for my findings from studies based on healthy Chinese, or other collectivistic, participants. Therefore, I would argue that the study conclusions can be generalized beyond our sample.

Second, in the qualitative study, I have taken example responses in the TSIA manual as typical, ideal Euro-Canadian responses. However, mean scores for the TSIA EOT-subscale in the Euro-Canadian validation sample ranged from 4.46 to 5 (out of a maximum of 12) (Bagby et al., 2006), suggesting that normal Euro-Canadian people do not always emphasize feelings to the

extent suggested by the TSIA. Since the analysis considered the content of the responses independently from the TSIA ratings, this concern does not affect the conclusions on Chinese emotional tendencies. Although I am comparing behavioural tendencies in my sample against inflated and idealistic inclinations to use feelings, these inclinations are agreed to be the most optimal by Western alexithymia researchers, and realistically occur in Euro-Canadian contexts (Bagby et al., 2006). Future research should explore discrepancies between the ideal and actual propensities for internal / externally oriented thinking, and also contrast normative levels of these tendencies across a wide range of cultural groups.

Practical Implications

While this study focused on evaluating the assessment of alexithymia, its conclusions can be applied more broadly. The research first showed that despite excellent translation efforts, an assessment tool can still be deeply rooted in cultural assumptions. Therefore, cross-cultural users of assessment tools need to carefully question the underlying cultural assumptions when using and interpreting assessment results. Secondly, the finding of different culturally normative levels of EOT have implications for migrants and clinicians working with multicultural groups. Distinct preferences and expectations for engaging with emotions may create struggles for acculturating migrants, who may find their emotional needs unmet or overly intruded in when interacting with the mainstream society. Clinicians should think about the cultural and social purposes of certain emotional tendencies that are atypical from the mainstream culture. Subsequently in their work, clinicians should judiciously consider the suitability of strategies extensively relying on the introspection of feelings, and if necessary, introduce other problem-solving approaches more identifiable to the client's specific cultural needs and beliefs. By recognizing the cultural

purposes in certain emotional tendencies, clinicians respect the client's own social and cultural needs, and provide more relevant and effective intervention.

Conclusions and Future Directions

Findings of potentially higher incidence and higher utility of EOT in Chinese cultural contexts reaffirm the notion that the EOT component of alexithymia can be shaped by cultural contexts and may reflect cultural norms (Ryder et al., 2018). Both conceptual and task level issues may be contributing to the poor psychometric properties of the EOT subscale, replicated in the current study. These issues include Chinese respondents valuing different features of a situation when analyzing it, or engaging in less mentalization behaviours than assumed in Euro-Canadian cultural contexts. Finally, these distinct behavioural tendencies may reflect specific cultural needs of collectivistic societies.

Despite its aforementioned weaknesses, EOT remains a cross-culturally useful construct although cultural contexts may modulate its optimal level and adaptiveness. Better measurement of EOT should seek to integrate its cultural-specific normative level and specific behavioural manifestations. Furthermore, future studies should seek supporting evidence for higher EOT tendencies in Chinese cultural contexts using measures other than the TAS-20. On the conceptual level, unpacking factors which make EOT adaptive in certain cultural contexts can broaden the literature by highlighting the double-sided, contextual nature of EOT.

To do this, it will be beneficial to connect the constructs of alexithymia and EOT with findings from the culture and emotion literature. There is growing research documenting cultural differences in various aspects of emotions, from expression and valuation, to appraisal and action tendencies associated with emotional experiences (Boiger et al., 2018; Tsai & Clobert, 2019; Tsai et al., 2006). In this study, I show that EOT, the tendency to discount the internal emotional

aspects of experiences and focus on exterior attributes, can be considered pathological in one cultural context but adaptive in another. As EOT loads onto the higher dimension of attention to emotions (Coffey et al., 2003; Palmieri et al., 2009), I argue that the importance placed on emotional content in general, beyond specific emotion types or mechanisms, also may vary across cultures. This is a preliminary proposition that necessitates further research. However, if true, it has important implications for interpreting the findings of culture and emotion research.

As has been increasingly recognized, emotions are purposeful and help people achieve their cultural mandates (Mesquita, Boiger, & De Leersnyder, 2017). Preferences for whether to focus on, or discount, emotions in different cultural contexts is a prime example of the purposeful nature of emotions, where its specific form is shaped by the need to achieve certain cultural needs. A better understanding of the patterns of and reasons for these culturally varying preferences would be helpful for researchers and clinicians alike. Doing so would promote the development of culturally and psychometrically sound assessments, and would reduce the over-pathologization of normative behaviours. Most importantly, this knowledge allows one to deeply understand the person or group they work with, ultimately leading to more accurate and empathetic characterizations of the human experience.

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Table 1
Demographic characteristics for the quantitative and qualitative sample

Variables	Quantitative sample (*n* = 276)		Qualitative Sample (*n* = 23)	
	Cases	Percentage	Cases	Percentage
Sex	111 males	40.22 males	14 males	60.87 males
Mean age (SD)	33.46 (11.78)		33.47 (11.41)	
Site				
Changsha	170	61.59	14	60.87
Huaihua	106	38.41	9	39.13
Education				
Less than elementary	11	3.99	0	0.00
Elementary	15	5.43	3	13.04
Secondary	91	32.97	7	30.43
Vocational training	65	23.55	5	21.74
Undergraduate university	80	28.99	6	26.09
Post-graduate degree	12	4.35	2	8.70
Missing	2	0.72	0	0.00

SD = Standard deviation.

Table 2
TAS-20 full scale and subscale summary and reliability statistics

TAS-20 Factors	Number of items	Mean	SD	Range	α	MIC
Full scale	20	54.20	11.16	28 - 84	.83	.18
DIDF	12	32.49	9.78	12 - 56	.89	.40
DIF	7	18.73	6.23	7 - 35	.86	.46
DDF	5	13.75	4.17	5 - 24	.71	.33
EOT	8	21.72	3.43	12 - 33	.28	.05
PRG	3	8.57	2.07	3 - 14	.17	.06
IM	5	13.15	2.47	7 - 20	.21	.06

SD = standard deviation. MIC = mean interitem correlation.
DIDF – Difficulties identifying and describing feelings; DIF – Difficulties identifying feelings; DDF – Difficulties describing feelings; EOT – Externally oriented thinking; PR – Pragmatic thinking; IM – Lack of subjective importance of emotions.

Table 3
Model fit indices for models of the TAS-20

Model	χ^2	*df*	CFI	TLI	SRMR	RMSEA	90% CI
(a)	387.238	170	.862	.845	.062	.068	[.059, .077]
(b)	374.135	169	.869	.853	.061	.066	[.057, .075]
(c)	369.838	167	.871	.853	.061	.066	[.057, .075]
(d)	362.773	167	.875	.858	.060	.065	[.056, .074]
(e)	345.35	164	.884	.866	.059	.063	[.054, .073]
Revised Models							
(f)	335.054	166	.892	.877	.060	.061	[.051, .070]

CFI = Comparative Fit Indices; TLI = Tucker-Lewis Index; SRMR = Standardized root mean square residual; RMSEA = Point estimate of root mean square error of approximation. *df* = degrees of freedom.
Models: (a) one-factor model, (b) two factor model with DIDF (difficulty identifying and describing feelings) and EOT (externally oriented thinking) factors, (c) standard three factor models with DIF (difficulty identifying feelings), DDF (difficulty describing feelings) and EOT factors, (c) three factor model with DIDF, PR (pragmatic thinking) and IM (lack of subjective importance of emotions) factors, (e) four factor model with DIF, DDF, PR and IM factors, (f) modified standard three factor model with correlated uniqueness.
Models (a), (b), (c), (d), (e) are described in detail in the quantitative Methods section; Model (f) is described in detail in the quantitative Results section.

Table 4
Standardized parameter estimates for factor loadings on the TAS-20

TAS 20 items	Models												
	(a)	(b)		(c)			(d)			(e)			
	F1	F1	F2	F1	F2	F3	F1	F2	F3	F1	F2	F3	F4
tas01	.76*	.76*		.76*			.76*			.76*			
tas02	.78*	.78*			.78*		.78*				.78*		
tas03	.60*	.60*		.60*			.60*			.60*			
tas04	.47*	.47*			.47*		.47*				.47*		
tas05	.18*		.25*			.25*		.25*				.26*	
tas06	.66*	.66*		.66*			.66*			.66*			
tas07	.59*	.59*		.59*			.59*			.59*			
tas08	.57*		.99*			.99*		.98*				.95*	
tas09	.84*	.84*		.84*			.84*			.84*			
tas10	-.06		-.04			-.04			.13				-.001
tas11	.72*	.72*			.71*		.72*				.71*		
tas12	.35*	.35*			.34*		.35*				.35*		
tas13	.72*	.72*		.72*			.72*			.71*			
tas14	.59*	.59*		.59*			.59*			.59*			
tas15	-.03		-.01			-.01			.36*				.03
tas16	.01		.09			.09			.51*				.11
tas17	.51*	.51*			.50*		.51*				.51*		
tas18	.02		.06			.06			-.15				-.84*
tas19	.02		.05			.05			-.10				-.27*
tas20	.06		.10			.10		.10				.10	

Notes. (a) one-factor model, (b) two factor model with DIDF (difficulty identifying and describing feelings) and EOT (externally oriented thinking) factors, (c) standard three factor models with DIF (difficulty identifying feelings), DDF (difficulty describing feelings) and EOT factors, (c) three factor model with DIDF, PR (pragmatic thinking) and IM (lack of subjective importance of emotions) factors, (e) four factor model with DIF, DDF, PR and IM factors, (f) modified standard three factor model with correlated uniqueness. Models (a), (b), (c), (d), (e) are described in detail in the quantitative Methods section.

*$p < .05$

Table 5
Estimates of TAS-20 factor correlations

Model	Factors	F1	F2	F3	F4
(b)	F1 (DIDF)	-			
	F2 (EOT)	.58*	-		
(c)	F1 (DIF)	-			
	F2 (DDF)	1.01*	-		
	F3 (EOT)	.59*	.53*	-	
(d)	F1 (DIDF)	-			
	F2 (PR)	.58*	-		
	F3 (IM)	-.04	.07	-	
(e)	F1 (DIF)	-			
	F2 (DDF)	1.01*	-		
	F3 (PR)	.62*	.55*	-	
	F4 (IM)	.02	-.12	-.08	-
Revised Models					
(f)	F1 (DIF)	-			
	F2 (DDF)	.98*	-		
	F3 (EOT)	.61*	.54*	-	

Notes. (a) one-factor model, (b) two factor model with DIDF (difficulty identifying and describing feelings) and EOT (externally oriented thinking) factors, (c) standard three factor models with DIF (difficulty identifying feelings), DDF (difficulty describing feelings) and EOT factors, (c) three factor model with DIDF, PR and IM factors, (e) four factor model with DIF, DDF, PR (pragmatic thinking) and IM (lack of subjective importance of emotions factors, (f) modified standard three factor model with correlated uniqueness. *$p < .05$

Appendix A

Instruments Used in the Study

The Toronto Alexithymia Scale (TAS-20)

1. I am often confused about what emotion I am feeling.
2. It is difficult for me to find the right words for my feelings.
3. I have physical sensations that even doctors don't understand.
4. I am able to describe my feelings easily. (R)
5. I prefer to analyze problems rather than just describe them. (R)
6. When I am upset, I don't know if I am sad, frightened, or angry.
7. I am often puzzled by sensations in my body.
8. I prefer to just let things happen rather than to understand why they turned out that way.
9. I have feelings that I can't quite identify.
10. Being in touch with emotions is essential. (R)
11. I find it hard to describe how I feel about people.
12. People tell me to describe my feelings more.
13. I don't know what's going on inside me.
14. I often don't know why I am angry.
15. I prefer talking to people about their daily activities rather than their feelings.
16. I prefer to watch "light" entertainment shows rather than psychological dramas.
17. It is difficult for me to reveal my innermost feelings, even to close friends.
18. I can feel close to someone, even in moments of silence. (R)
19. I find examination of my feelings useful in solving personal problems. (R)
20. Looking for hidden meanings in movies or plays distracts from their enjoyment.

Notes. from Bagby, Parker & Taylor (1994).
Respondents rate items on a Likert scale with the following labels: Completely disagree, disagree, neutral, agree, completely agree
Items noted with (R) are reverse scored.

Externally oriented thinking subscale items in the Toronto Structured Interview of Alexithymia

3. Do you find examining your feelings useful when attempting to solve personal problems?

7. Do you tend to just let things happen rather than trying to understand why they turn out a certain way?

11. Do you tend to talk to others more about daily activities rather than feelings?

15. Do you often rely on your feelings to help guide your actions?

19. Do you think about past emotional experiences to help you cope with more recent emotional problems?

23. Do you learn much about yourself on the basis of your feelings?

Notes. from Bagby, Taylor, Parker & Dickens (2006).