

Causal Attributions, Expressed Emotion, and Patient Relapse: Recent Findings and Application to Chinese Societies

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Abstract

For more than 30 years, a measure of the family environment termed expressed emotion has enhanced our understanding of how family psychosocial factors influence psychiatric relapse. This article reviews research addressing relatives' causal attributions, expressed emotion, and patient relapse, which support a model in which relatives' attributions are causally related to expressed emotion. A mediational model of attribution-expressed emotion outcome is evaluated as a theoretical framework to understand how attributions and expressed emotion contribute to patient relapse. Research addressing this topic in China, where relatives' behaviours towards patients differ greatly from their western counterparts, is reviewed. Relatives of patients with schizophrenia in China demonstrated a more situational attribution bias than relatives of patients from western cultures, yet Chinese relatives' controllable and personal attributions still related to high expressed emotion types of criticism and hostility. Expressed emotion partially mediated controllability attributions in predicting relapse. Contrary to expectations, personal attributions, particularly relatives' causal beliefs of 'xiao xin yan' ('narrow-mindedness'), protected against relapse in a manner unexplained by expressed emotion. These results further support the hypothesised causal relation between attributions and expressed emotion, and provide a new pathway to explore how relatives' behaviours ameliorate patient illness course. Future directions for research utilising attributions and expressed emotion in Chinese societies are provided.

Key words: Causal attribution, Expressed emotion, Schizophrenia

Overview

For more than 30 years, a measure of the family environment termed expressed emotion (EE) has generated a great deal of research into how relatives' emotional attitudes influence the course of mental disorders. Yet far less is known about what the construct of EE is and what causes its manifestations. More recently, attention has been paid to how relatives' causal explanations of the mental illness relates to EE and patient relapse. Assessing the relative's causal attributions has been valuable in understanding a potential

causal factor of the differing types of EE. Also discussed is the mediational model of affect-emotion outcome, a framework used to understand how relatives' attributions and EE predispose patient relapse. Research of attributions and EE in Chinese societies, where these 2 familial factors are expected to differ due to distinct cultural norms governing family interaction, is discussed next. Lastly, conclusions are drawn from the literature and future directions of exploration in Chinese populations are suggested to further this informative line of research.

Expressed Emotion and Patient Relapse

EE has provided the basis for a great deal of research exploring how family factors impact the course of psychiatric illness. First conceived of during work by Brown in England, this author noted that male patients with schizophrenia discharged from hospital to live either in lodgings or at home with siblings showed a better course of illness over a 12-month period than those patients who lived in large hostels or returned to live at home with parents or spouses.¹ From these retrospective findings, Brown et al then conducted a prospective study in which they interviewed 128 male patients with schizophrenia and their key female relative on

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3 occasions within the first year of discharge from a psychiatric hospital.³ Ratings of the relatives were most useful in predicting patient relapse, and those patients who returned to homes of relatives who were rated as high on expressed emotion or high hostility were more likely to relapse during 1 year of follow up.

A relative is considered to be high in expressed emotion if he or she scores high on the criticism, hostility, or emotional overinvolvement (EOI) dimensions during the Camberwell Family Interview (CFI),³ the measure for EE that eventually emerged from Brown's work. The CFI is a 90-minute semi-structured interview, given to the patient's key relative, that asks about the emotional atmosphere in the home 3 months before the patient's admission to the hospital. A number of studies in addition to Brown's have shown that patients with schizophrenia relapse more frequently when relatives are high in EE.⁴⁻⁶ EE has also been linked to elevated rates of relapse in unipolar depressed patients⁷ and recent onset mania.⁸ Such findings are further bolstered by results from family interventions aimed specifically at reducing EE, which, in conjunction with psychotropic medication, generally reduce relapse rates.^{9,10} These results indicate that the emotional atmosphere of the family environment (as measured by EE) plays a significant role in the outcome of a variety of mental illnesses and that interventions addressing family affective patterns can lead to lower rates of relapse for psychiatric patients.

Causal Attribution of Illness and its Relation to Expressed Emotion

Although researchers have empirically demonstrated the use of EE as a construct in predicting the course of mental illness, much less is understood about what exactly EE is and how it originates. Research on relatives' causal attributions has given investigators a framework to explore one potential causal factor of EE. From this perspective, relatives' cognitive beliefs (their causal attributions) about what caused the patients' negative illness behaviours are hypothesised to determine what type of emotional attitudes (EE) relatives manifest.

Hooley first hypothesised that when relatives attributed the symptomatic behaviours to an aspect internal to patients and under their control, these relatives were predicted to be critical (and thus high EE).^{11,12} Conversely, when symptoms were attributed to factors outside of the patients' control or to legitimate illness, relatives were predicted to be low EE. Hooley further suggested that if high EE relatives perceived the patient's negative behaviours as controllable by the patient, these relatives would initiate efforts to modify these problem behaviours, thus resulting in more criticism and higher levels of EE.

Recent studies have extended Hooley's initial hypothesis and applied Weiner's influential attribution model¹³ to examine how relatives' beliefs about the causes of the patients' illness behaviours give rise to the relatives' subsequent emotional reactions. Weiner proposed that when a negative event is attributed to a cause that is internal (e.g.

"she likes to lie around and not work") and controllable ("if she'd only show some willpower, she'd have a job") to that person, anger and punishing behaviours directed towards that person are elicited. Brewin et al applied Weiner's theory to the genesis of EE, hypothesising that relatives who viewed patients as having illness behaviours caused by internal and controllable factors would demonstrate negative affects that would in turn be rated high hostility and/or high critical EE during the CFI.¹⁴

Brewin et al thus proposed relatives rated high criticism and/or hostility to be alike in their attributional styles and to ascribe illness behaviours to more internal and controllable causes when compared with relatives rated high EOI and low EE.^{14*} Recent research using the Leeds Attributional Coding System (LACS),¹⁵ a system that uses spontaneous speech to identify attributions that are then coded by attributional domain, has supported this hypothesis. Brewin et al, in a study conducted in the UK, found that critical and/or hostile relatives of patients with schizophrenia, when compared with other EE groups, made more controllable rather than uncontrollable (e.g. "he was trying to get attention by acting depressed" versus "his work place for no reason fired him and he got depressed"), and personal rather than universal attributions (e.g. "he's always been lazy so he won't help around the house" versus "anyone who's sick like that wouldn't be able to help out with house chores").¹⁴ Barrowclough et al, in a replication conducted in the UK, found that high criticism and/or hostility relatives of patients with schizophrenia provided more internal and controllable causes, and gave significantly more attributions of responsibility (attributions coded internal, personal and controllable), than other EE groups.¹⁶ Licht's study, using a schizophrenia sample from the USA, found that high EE relatives (defined as high criticism and/or hostility in this study) gave more personal and controllable attributions, and also provided more attributions of responsibility, than low EE relatives.¹⁷ The above studies support the hypothesis that internal, controllable, and/or personal beliefs about the causes of the patients' illness may predispose angry emotions towards the patient among relatives of patients with schizophrenia and act as a causal factor for high hostility and/or high criticism.

Consistent differences in attributional styles, as measured by the LACS, exist across EE groups when examining relatives of other diagnostic groups as well. Hooley and Licht's study in the UK of relatives of unipolar depressed patients found that spouses rated as high-critical provided more controllable and personal causes, and gave more

* Brewin et al originally hypothesised that high EOI relatives would also differ from low EE relatives by giving even more external and uncontrollable attributions for the patients' negative behaviours. However, results from their study indicated that high EOI and low EE relatives were not significantly different in attributional style. Due to this result and arguments that high EOI relatives would exhibit similar attributions as low EE relatives towards patient controllability over their negative behaviours,¹² high EOI was moved from the high EE group to the low EE group in Brewin et al's study and most other subsequent studies of relatives' attributional style and EE.

attributions of responsibility, for symptomatic behaviour than spouses rated as low EE.¹⁸ Licht, in a study with relatives of patients with bipolar disorder in the USA, found strong trends for relatives rated high criticism and/or hostile to provide more internal and personal attributions than other EE groups.¹⁷ Tarrrier et al's study of caregivers of patients with Alzheimer's disease in the UK found criticism to be significantly and positively associated with personal and controllable attributions, and hostility to be positively associated with personal attributions.¹⁹

Three studies using a global measure of assessing the relative's degree of perceived patient controllability over the disorder as a whole²⁰ to rate the CFI lend further support to these findings. All 3 of the following studies were conducted with independent groups of relatives of patients with schizophrenia from the USA. Weisman et al demonstrated that those relatives rated as high critical and/or hostile attributed symptoms as more controllable to the patient than relatives rated low EE.²¹ In another study, Lopez et al found that degree of perceived controllability by the relative was positively associated with criticism, and negatively correlated with warmth (a measure of the relative's positive emotion towards the patient assessed by the CFI).²² In the third study, Weisman et al found that high criticism and/or hostile relatives of patients with schizophrenia demonstrated a strong trend towards making more controllability attributions for the patient's problem behaviours than low EE only relatives within the same household (i.e., data from 1 high EE relative and 1 low EE relative for each patient were obtained and compared to each other).²³

Although the above studies demonstrate strikingly consistent differences in attributional styles in relatives rated as high critical and/or hostile versus high EOI and low EE, these studies were all cross-sectional in design, thus limiting the conclusions that can be drawn about the attribution-EE link. One study examined whether changes in attributions among relatives of patients with schizophrenia were associated with shifts in EE over time. Brewin, in a study conducted in the UK, assessed relatives' attributions using the LACS both before and 9 months after taking part in interventions designed to reduce levels of expressed emotion.²⁴ Accompanying a general reduction in relatives' EE was a shift towards making more universal attributions (e.g., "anyone in 'the patient's' situation would act the same") for patients' negative behaviours and more use of attribution to illness. Reduction in level of hostility in the relatives was associated with shifts towards more universal and uncontrollable attributions. Although we cannot infer the direction of causality due to the absence of a control group, this longitudinal study demonstrates that changes in attributions are accompanied by a parallel change in EE, a prerequisite to evaluating whether changes in relatives' causal attributions over time actually produce changes in EE.

In sum, these studies consistently illustrate that, among differing subject samples and diagnostic groups, those relatives who display more internal, controllable, and personal attributions also tend to exhibit negative emotions

during the CFI that are coded as high criticism and/or hostility. However, the correlational nature of the findings to this point have not allowed for determination of whether change in causal attributions in fact precedes change in EE. It is possible that emotional differences among relatives may bias their cognitive perception towards certain types of causes of illness behaviours among patients.¹⁸ Yet the preceding studies all demonstrate that attributions and EE are associated in the hypothesised direction, and the number of experiments that support the attribution-emotion behaviour pathway across numerous social situations^{13,25} provide a basis for support that attributions would also have a causal relationship to EE. Although yet to be definitively determined, the results are consistent with the theory that attributions play a formative role in the manifestation of EE.

A Mediation Model of Attribution-affect-outcome

Since the above results suggest that relatives' causal attributions may play a causative role in type of EE, and EE has reliably predicted patient-relapse, it is of interest to examine how relatives' causal attributions and EE, both independently and in relation to one another, predict patient outcome. By doing so, we can better understand the process by which family variables influence the course of the illness.

Four of the previously mentioned studies followed up measurement of EE and attributions with assessments of the patient's clinical outcome. Lopez et al's²² adaptation of Weiner's²⁶ mediational model of attribution and affect allows us to organise the findings in a framework provided by attribution theory. For a mediational model of attribution-affect-relapse to be realised, 4 conditions must be fulfilled:

1. relatives' attributions are associated with relapse
2. relatives' attributions are related to EE
3. EE is correlated to patient outcome
4. EE explains a significant portion of the attribution-outcome relationship (i.e. once EE is controlled for, attributions should no longer predict patient outcome).*

According to this model, attributions may give rise to EE, but EE is a more proximal determinant of relapse than attributions.

The studies mentioned in the preceding sections provide support for conditions 2 and 3, that attributions are related to EE and that EE is related to outcome. In the 4 studies reviewed below that included an outcome measure of patient status, criteria were met in each study for conditions 1 to 3 (i.e., attributions were related to relapse, attributions were related to EE, and EE was related to relapse in each group).^{16-18,22} Yet differences among these 4 studies emerged in condition 4, where EE is proposed to entirely mediate the relationship between attributions and relapse.

* As one anonymous reviewer noted, EE is used to approximate but is not exactly identical to emotion in the attribution-emotion-outcome model. While EE captures affect exhibited by the relative during the CFI, the relatives' emotional experience may include subjective, unexpressed feelings which would remain untapped by EE.

Two of these 4 studies support full mediation of EE between attributions and relapse. Hooley and Licht's examination among relatives of depressed patients demonstrated that spouses' criticism (a dimension of EE) remained a highly significant predictor of patient relapse, even after taking into account all significant attributional dimensions.¹⁸ Moreover, causal explanations were not significant in explaining relapse after criticism (EE) was entered first into the logistic regression analysis. Licht examined the role of relatives' attributions and EE in predicting relapse in 2 separate diagnostic groups (schizophrenia and bipolar patients).¹⁷ After EE status was entered as the first variable in a regression model predicting relapse, attributional domains again did not significantly predict relapse for either the schizophrenia or bipolar group 9 months after discharge from hospital. EE status, however, continued to predict relapse for these 2 groups even when attributions were entered first into the model. In these 2 studies, causal attributions that relatives made about the illness did not predict relapse once level of EE was considered (i.e. EE fully mediated the impact of attributions on relapse).

Yet the 2 remaining studies do not support full mediation of the relationship between attributions and relapse by EE and demonstrate that relatives' attributions continue to impact patient relapse beyond what is accounted for by affect (EE). Barrowclough et al used a discriminant function analysis with relapse of patients after 9 months of follow-up as the dependent variable to investigate this in a sample of relatives of patients with schizophrenia.¹⁶ After controlling for participation in intervention, EE status was first entered into the model, followed by attribution domains. The discriminant function coefficients of the final model suggested that controllability attributions contributed most to relapse prediction, followed by the intervention participation, internality attributions, and finally EE status. Attributions continued to predict patient relapse even after EE was entered into the model, and did so at a magnitude larger than EE in this final model. From these results, the authors hypothesised that relatives' attributions better predicted their coping responses and actual behaviours towards the patient than EE, which in turn would lead attributions to be more sensitive predictors of relapse.

A separate study by Lopez et al conducted in a group of relatives of patients with schizophrenia also did not support complete mediation of EE between attributions and outcome.²² When criticism (EE) was added to attributions into a logistic regression model predicting relapse, attributions (of controllability) no longer significantly predicted relapse. Criticism continued to be positively associated with relapse with attributions already in the model, but no longer predicted relapse at a significant level. Thus, the results only supply partial support for the attribution-affect-relapse model. Further analyses indicated that attributions and EE (criticism) jointly predicted patient outcome; when entered together as one step, these 2 constructs reliably identified those patients who later

relapsed and showed greater positive symptoms after 9 months of follow up. This study suggests that relatives' controllability attributions continued to exert an effect on patient relapse in conjunction with EE.*

These results do not allow us to arrive at a definitive conclusion regarding the proposed attribution-affect (EE) - outcome model. Two of 4 studies support a model where the beliefs that relatives have about the patients' illness behaviours give rise to relatives' affective reactions (EE) towards patients, but it is these emotional reactions (EE) that more directly influence patient relapse. This makes sense given Weiner's¹³ attribution-emotion-behaviour theory, whereby relatives' emotions (EE) are a closer predictor than attributions of their behaviour towards the patient, which may be the actual stimulus that causes patients' relapse.¹⁸ However, the other 2 studies suggest that an independent pathway may exist where attributions influence patient relapse. One possible explanation is that attributions may influence relatives' behaviours independent of the effects of EE, which may in turn impact patient outcome.¹⁶ However, such hypotheses remain speculative and more research is needed before firm conclusions can be made.

Cross-cultural Research in Causal Attributions and Expressed Emotion

All of the above studies have taken place either in the USA or the UK, utilising exclusively Caucasian populations. Until recently, only Weisman et al had examined the relationship between attributions and EE with an ethnic group other than a Western European one.²⁰ Although attribution theory has been developed with some attention to its generalisability across cultures,¹³ testing attribution theory with other ethnic populations helps establish the cross-cultural validity of the association, and hypothesised causal relation, between attributions and EE.

Previous research by Karno et al indicates that although high EE was rarer among Mexican-American families than among relatives in the UK and the USA, the presence of high EE in Mexican-American relatives significantly predicted relapse for patients with schizophrenia.⁶ These results suggest that EE has cross-cultural validity in Mexican-American culture. Weisman et al²⁰ later examined the CFI's collected from Karno et al's⁶ study using the global measure of controllability described above. Similar to the results from other studies, relatives rated as high critical and/or hostile gave significantly higher controllability ratings than did relatives rated as low EE. Relatives rated as high critical and/or hostile also reported more negative emotions

* Note that in each of these 4 studies that assessed impact of attributions on psychiatric relapse, each attribution domain that significantly impacted upon relapse did so singly (i.e. was not combined with other attribution domains to achieve influence on relapse). For example, in Barrowclough et al, each of the controllability and internality domains had independent effects on relapse.¹⁶ However, such attributional domains may tend to co-occur among attributions, as the controllability and internal domains were moderately intercorrelated in Barrowclough et al ($r = 0.57$).¹⁶

in general towards the patient, such as annoyance or disgust, than did relatives rated as low EE. Supporting attribution theory, a significant interaction existed among relatives who perceived patients as having more control over their symptoms — these relatives also generally tended to express more negative emotions regarding the patient. These studies indicate that the association, and proposed causal relation, between attributions and EE may be applicable to other ethnic groups, at least in respect to Mexican culture.

The empirical link between attributions of illness and EE has only recently been explored in Chinese societies. Acquiring confirming evidence lends support both to the cross-cultural validity of the hypothesised causal relationship between attributions and EE and for the targeting of family interventions for schizophrenia within this population. Such research is particularly pertinent as families compose the central social unit in Chinese culture and are often the primary caretakers for disabled patients. Indeed, Phillips et al's research indicated that 90% of patients with schizophrenia in mainland China resided with their families.²⁷ Before examining this relationship, however, it must be assessed whether EE, a variable conceived of using western ideology and norms, is a valid construct in Chinese culture where family attitudes and norms towards caring for an ill family member differ greatly from western cultures.^{28,29}

Schizophrenia, the Family, and Expressed Emotion in Chinese Societies

After receiving appropriate training on the Camberwell Family Interview from Christine Vaughn in London, Phillips and Xiong examined the validity of EE in predicting relapse of patients with schizophrenia in urban China.³⁰ Although Phillips did not change the anchor points for the emotional overinvolvement scale, he adapted the CFI slightly to reflect how normative it was for parents in Chinese society to behave protectively towards ill children. In China, conceptions of parental duty dictate that they act as intermediaries between the sick child and the outside world and, according to the 1981 China Marriage Law, grown children who are “unable to care for themselves” become the parents' responsibility. Further, somatic complaints were frequent among parents during patients' illnesses, so only extended somatic reactions of relatives were counted as high EOI. Phillips also modified some criteria for circumstances particular to China. For example, due to the comparatively low rate of divorce in China, spouses who attempted but were unable to separate from the patient were coded as hostile even though they had become hopeless about their situation and discussed the patient in a distant, non-critical manner during the CFI.

Using the CFI revised for the Chinese context, Phillips and Xiong found that patients from high-EE households tended to relapse sooner and more frequently than patients from low-EE households 18 months after discharge from hospital.³⁰ The mean time of relapse was 13.7 months

(standard deviation [SD], 10.4 months) for the 20 high-EE household patients who relapsed compared with 16.4 months (SD, 11.7 months) for the 24 low-EE household patients who relapsed, although this difference did not reach statistical significance. Family intervention (long-term family counselling in conjunction with medication) decreased rates of relapse for patients from high EE households. Although this latter trend was statistically non-significant, comparison of the intervention-group patients and control-group patients from high-EE families revealed a trend of decreased risk of relapse in the intervention group.

Although the above study indicates only a modest effect of EE in predicting relapse in mainland China, 2 other studies (conducted separately in Taiwan and Hong Kong) have also examined the validity of EE in Chinese societies.^{31,32} Although the conclusions from the Taiwan study are limited substantially by the coders' lack of formal EE training, the small sample size, and the absence of patient relapse measures, the results of this study do suggest that the CFI can be adapted in Taiwan to measure aspects of family members' subjective experiences and relations with the ill family member.³¹ Using a more systematised approach of measuring EE and relapse, the Hong Kong study demonstrated a powerful effect of EE on relapse; patients with high EE relatives ($n = 15$) had a greater than 5-fold chance of relapse (odds ratio, 5.4; 95% confidence interval, 1.38-21.1) when compared to patients with low EE relatives ($n = 18$).³² Although differences in the procedures in the Hong Kong study compared with Phillips et al's study* may account for the better predictive validity of EE in Hong Kong than mainland China, one may speculate that as Chinese societies undergo westernisation, EE may play a larger role in determining the patient's course of illness.³⁰ Nonetheless, the results from these 3 studies, when taken together, support the hypothesis that relatives' emotional reactions towards the ill family member play a role in determining relapse of schizophrenia patients among Chinese cultures.

Causal Attributional Patterns in the Chinese Context

Just as measurement of EE was modified for cultural influences in Phillips and Xiong's study,³⁰ types of attributions made are likely to be influenced by Chinese cultural factors. If attributions give rise to EE as proposed by attribution theory, variation in types of attributions made by Chinese may influence the distribution and types of EE manifested in Chinese societies. Research in social psychology suggests that Chinese people attribute causes of social events differently when compared with people from western cultures. Morris and Peng propose that a person's

* The Hong Kong study only included relatives who had more than 35 hours of contact per week with patients,³² while Phillips et al did not use this criterion.³⁰ In addition, the Hong Kong study used more frequent relapse assessments (every 4 weeks) than Phillips et al's study (every 6 months), and therefore may have been more sensitive to detecting patient relapses.

tendency to attribute behaviour to the actor's disposition (i.e. personal characteristics) during social events reflects an implicit theory about social behaviour that is more widespread in individualist (e.g. American) than in collectivist (e.g. Chinese) cultures.³³ In individualist cultures, where persons are defined as individual units and socialised to behave according to personal preferences, Morris and Peng propose that social behaviours more commonly express stable, global, and internal dispositions. In contrast, they propose that in collectivist cultures where persons are primarily identified as group members and are socialised to behave according to group norms, social behaviour is more prevalently shaped by relationships, roles, and situational pressures. They believe that those from individualist and collectivist cultures differ in their processing of social events, including how individuals attend to, encode, and cognitively represent social behaviours.

Morris and Peng's results from 3 studies with American and Chinese high school and graduate students support their hypotheses.³³ In the first experiment, Chinese and American students were examined as to whether they differed in attributions to internal dispositions versus external situations in a physical event (i.e. a computerised display of an object moving after collision with another object) and a social event (i.e. an analogous display of a singular fish moving from/with a group of fish). The 2 groups did not demonstrate any differences in attributions with the physical event. In the social event, however, Americans perceived more influence of internal factors and Chinese perceived more external influence (e.g. actions of the other fish) on the actor's behaviour.

In the second study, spontaneous attributions made by the reporters of 2 mass murders in an English-language and a separate Chinese-language newspaper were compared by proportion of personal dispositions (a property particular to a person) versus situational factors (factors that are tied to a particular social context). American reporters attributed more causes to personal dispositions (e.g. "he had a personal belief that guns were important means to redress grievances") and Chinese reporters attributed more to situational factors (e.g. "the murder can be traced to the availability of guns") for each murder. In the third study, Chinese and American students were given brief reports about one of the 2 murders and asked to rate the importance of 19 situational factors and 9 personal factors in causing the murder. Again, American subjects gave greater weight to personal dispositions, while Chinese subjects gave greater influence to situational factors.

These 3 studies show that Chinese tend to attribute the social behaviour of actors as situational even in the case of unusual, negative behaviours (i.e. mass murder) when compared with Americans, who tend to attribute the same social behaviour as dispositional. Hence, if the negative event of mass murder triggers the same type of attributional processes as negative behaviours associated with schizophrenia, it is expected that Chinese relatives may demonstrate rates of attributions more situational (or less dispositional)

overall compared with the rates found among western relatives. These findings may impact the relationship between attributions and EE in 1 of 2 ways in China:

1. if Chinese relatives make overwhelmingly situational types of attributions for their family members' illness behaviours regardless of circumstance, the proposed causal link between attributional styles and high criticism and/or hostility groups (who may exhibit high EE due to other causal factors such as relatives' personality type⁷ may not be manifested
2. if relatives' attributions are in fact causally related to EE and remain largely situational in nature, there should be correspondingly lower proportions of high critical and/or high hostile relatives among Chinese relative groups. Thus, how attributions differ in nature in China may potentially influence either the hypothesised relationship between relatives' attributions and EE or the types of EE that are exhibited in Chinese culture.

Relationship Between Causal Attributions, Expressed Emotion, and Relapse in Chinese Culture

To test the universality of the proposed causal relation between attributions and EE, and the mediational model of attribution-affect (EE) -outcome in the Chinese context, Yang et al examined the relationship of these variables among patients with schizophrenia in China.³⁴ A summary of this study and its results are presented here; for further detail, refer to Yang et al's published paper.³⁴ Similar to the methodology used in previous studies, the LACS was used to code attributions from the CFIs of 54 relatives of patients with schizophrenia that were collected at 2 cities in China (Shashi and Beijing). With regards to rates of types of attributions, proportions of controllable and personal attributions in the Chinese sample (7.7% and 12.1%, respectively) were found to be far lower than the rates reported in samples of relatives of patients with schizophrenia in the USA and the UK (16.4% to 41.5% and 21.1% to 72.4%, respectively).^{14,16,17} Although these disparities could be due to clinical or demographic dissimilarities between the samples, these differences remain consistent with the tendency of Chinese populations to give more situational attributions for negative behaviours than Americans.³³

Within this context of providing fewer controllable and personal attributions overall, high EE (defined as high criticism and/or hostile) Chinese relatives still gave greater proportions of controllable and personal attributions than low EE (defined as high EOI and/or low EE) Chinese relatives. This association existed even after controlling for different types of patient behaviours that high EE and low EE relatives tended to make attributions towards. These findings are remarkably consistent with the results from the studies from the USA and UK reviewed above, and argue for the cross-cultural validity of the proposed causal relation between attributions and EE.

Since controllable and personal attributions were rarer in the Chinese group yet remained related to critical and/or hostile types of EE, were there lower rates of these types of EE among Chinese relatives in general, as would be expected if relatives' attributions were causally related to EE? This appears to be the case — of the 504 relatives at the time of sampling during Yang et al's study, a mere 10 (2.0%) were rated as high critical only and 15 (3.0%) as high critical/hostile only.³⁴ This is compared with 170 (33.7%) high EOI only and 248 (49.2%) low EE only relatives (the remainder were mixed high EE cases). The rarity of pure high critical and/or hostile relatives is what one would expect if these types of EE arise from controllable and/or personal types of attributions.*

Since attributions were associated with EE in this Chinese sample, the remaining 2 preconditions for testing a mediational model of attribution-affect (EE) -relapse were then evaluated. To test the second condition, high EE (defined as high criticism and/or hostility), when entered into a logistic regression model, predicted patient relapse 18 months after hospital discharge.[†] To test the third condition, controllability and personal attributions significantly predicted patient relapse when entered as a single block into a separate logistic regression model. While an increase in controllability attributions predicted a greater risk of patient relapse as anticipated, an increase in personal attributions unexpectedly protected against patient relapse.

Since the first 3 conditions for a mediational model were met, EE was then tested as a mediator between attributions and relapse. When EE was added as the second step after controllability and personal attributions were entered together as the first block, EE became the most significant predictor of patient relapse, while controllability attributions no longer significantly predicted relapse in the final model.

From these results, it appears that EE partially mediated the contribution of controllability attributions in predicting patient relapse, thus lending some support to a mediational model of attribution-affect-outcome. However, personal attributions still remained a significant predictor of relapse even after the addition of EE, and continued to exert the unexpected effect of protecting against patient relapse.

* One could argue that the lower proportion of pure high critical and/or hostile relatives may be an artifact caused by how Phillips and Xiong adapted the CFI to measure EE in mainland China.³⁰ However, EOI was modified to be slightly less inclusive of normative protective behaviours that Chinese relatives would engage in (which should result in the coding of fewer high EOI cases) and hostility was modified to be slightly more inclusive of particular situations that may occur in mainland China (which should result in the coding of more high hostility cases). Measurement of critical comments was unchanged. Hence, the rates of pure high criticism and/or hostility among this total group of Chinese relatives should not have been underestimated by the use of Phillips' slightly modified CFI.

† Due to an average length of stay in hospital of 3 months in China, 18 months was chosen as the time to assess patient relapse. Patients, due to achieving medication and symptom stability, are able to function for extended periods of time after hospitalisation without relapse.³⁰

Hence, it appears that in this Chinese group, personal attributions had an independent effect on decreasing the risk of the patient's illness exacerbation or readmission to hospital that lay outside of the proposed attribution-affect (EE) -outcome pathway.

Since this protective effect of personal attributions had not been reported in previous studies, these attributions were subjected to further analyses to see if the coding was detecting heterogeneous constructs. Secondary analyses of the personal attributions indicated the relatives' notion of 'xiao xin yan' ('narrow-mindedness') played a special role in this dimension's protective nature.

'Xiao xin yan' is best described as someone who "is narrow-minded; overly sensitive, selfish and picky; petty and not able to let go of thoughts or feelings." Since this concept describes a character trait, it is coded as personal according to the LACS. Relatives first used 'xiao xing yan' as an aetiological explanation for mental illness — the patients encountered some type of stressor, their 'narrow-mindedness' or 'inability to express their thoughts outward' led to further mental strain, which ultimately led to the development of schizophrenia.

In a second usage, relatives attributed the patient's strange behaviours of suspiciousness and delusional rumination to a 'narrow-minded' character type who was unable to let go of a negative thought or event. In either of these cases, relatives were attempting to explain the illness using a Chinese concept that made the patient more like other normal people from the relative's perspective. This usage is at odds with what personal coding in the LACS attempted to capture, which was to describe traits that made the patient distinct from other typical people with schizophrenia (examples of characteristics typically coded as 'personal' in both the western studies and the Chinese sample include laziness, stubbornness, manipulative character, etc).

Accordingly, 'narrow-minded' attributions were hypothesised to differ from these other personal attributions in their relation to patient relapse.[‡] The statistical analyses support this hypothesis. When 'narrow-minded' attributions were subtracted from the personal attributions, 'narrow-minded' attributions remained negatively correlated to patient relapse, but the adjusted personal attribution scores (which were composed of the more typical personal attributions) no longer related to patient relapse in a protective manner.

In addition, the particular combination of low perceived controllability and one or more 'narrow-minded' attributions on the relative's part proved especially protective against patient relapse. Hence, it appears that this specific causal

‡ Typical personal attributions (such as laziness or stubbornness), as formulated by Brewin et al,¹⁴ are seen as a subset of internal attributions that are, in particular, related to the patient's character. As a subset of internal attributions, an increase in personal attributions by the relative is proposed to be positively related to high EE (high criticism and/or hostility), and therefore predictive of an increased risk of patient relapse.

belief particular to how Chinese conceptualise mental illness* exerted a protective effect on relapse, and the data suggest that its influence lay outside of the proposed attribution-affect (EE) -relapse pathway. This novel finding suggests a new causal pathway for researchers to consider how relatives may think, feel, or act in ways that protect patients from psychiatric relapse that lies outside of what is already predicted by EE.

Suggested Directions for Attribution, Expressed Emotion, and Patient Relapse Research in Chinese Societies

To summarise, a body of evidence now documents the association between specific types of relatives' attributional styles and EE. Although we cannot determine direction of causality from these findings, the consistency of these results are congruent with an attributional model where relatives' attributions give rise to EE. Replication of this association among Chinese relatives in a setting where dispositional types of attributions are rare argues strongly for the cross-cultural validity of this relationship.

In terms of understanding how a mediational model of attribution-affect (EE) -relapse predicts patient relapse, the results are inconsistent. Two previous studies support a model where relatives' attributions give rise to EE, and EE in turn predicts patient outcome in a fashion that fully mediates the impact of attributions on relapse. Yet 2 separate studies show that attributions influence patient outcome even after controlling for EE, suggesting that attributions can exert influence on patient outcome in addition to what is predicted by EE.

The results from the study in China on one hand give partial support to a mediational model of attribution-affect (EE) -outcome — relatives' controllability attributions no longer meaningfully predicted patient outcome after EE was entered into the model. Yet personal attributions, in particular those associated with 'narrow-mindedness', continued to protect against patient relapse even after controlling for EE, suggesting that these types of causal beliefs ameliorated patient relapse independent of what is predicted by EE. From the inconsistent nature of these results, it appears that more research is needed to clarify under what conditions (e.g. under which cultural contexts and with which disorders) EE mediates the influence of attributions on patient relapse, and when attributions maintain an independent effect on patient outcome.

The above findings provide a foundation from which to further explore how relatives' cognitions and emotional attitudes influence the course of psychiatric disorders in

Chinese societies.† Our understanding of how the family environment impacts upon patient relapse in Chinese societies can benefit from research in the following areas:

1. Although the above evidence suggests that relatives' attributions and EE vary in their contributions to patient relapse across certain situations, as Hooley and Licht propose,¹⁸ it is likely how relatives' attributions and EE influence their actual behaviours towards the patients that most directly impacts relapse across all cultures. EE research has identified some specific behaviours that high EE relatives from western cultures manifest such as directing more critical remarks and engaging with patients in longer periods of reciprocal negative interactions that contribute to patient stress and subsequent relapse.³⁵ Likewise, research on attributions has found that high EE relatives of schizophrenia patients in the USA who endorsed more attributions of patient controllability displayed more controlling behaviours towards patients, which may be perceived as stressful by the patient and contribute to future relapse, than low EE relatives who gave fewer attributions of controllability.³⁶ However, there is no data to confirm what types of relatives' behaviours that attributions and EE predict in Chinese populations. Since Yang et al's findings in China suggest that controllability attributions act on patient relapse through high EE, it appears of more salience to identify the specific types of behaviours that high EE relatives in China demonstrate towards their ill family members that predispose them towards relapse.³⁴

Yet Yang et al's findings also suggested that personal attributions in Chinese culture related to 'xiao xin yan' protected the patient against relapse in a manner not accounted for by EE.³⁴ Understanding what type of behaviours this causal belief may engender among Chinese relatives towards patients provides a unique opportunity to examine what type of relatives' behaviours can aid the patient in recovery. One hypothesis to explain this finding is that relatives holding such a causal belief may treat the patient with greater understanding and sympathy, thus decreasing the patient's stress levels and leading to lower levels of relapse.¹¹ Perhaps the causal belief of 'xiao xin yan' among Chinese relatives plays a similar role to the cultural belief of 'nervios' among Mexican-American relatives of patients with schizophrenia — Jenkins et al propose that the cultural syndrome of nervios gives Mexican-American relatives a ready concept by which to understand the symptoms of schizophrenia, enabling these relatives to treat the patient with more tolerance and kindness.³⁷ An alternative hypothesis is that the use of 'xiao xin yan' by Chinese

* Although 'xiao xin yan' appears to be a trait commonly used by Northern Mainland Chinese and readily expressible in Mandarin Chinese, there does not appear to be an analogous term for this characteristic in Cantonese Chinese. However, the constellation of character traits captured by the Mandarin phrase of 'xiao xin yan' may be applicable to how southern Chinese conceptualise mental illness, even though a specific term for this trait does not exist in the Cantonese dialect.

† Of course, other relevant contextual factors such as the use of traditional Chinese medicine/alternative forms of healing to treat mental illness and the severe stigmatisation that people with mental illness in Chinese societies face may also impact course of psychiatric illness. Although worth mention, a discussion of these factors and how they may influence illness course is beyond the scope of this paper.

relatives allows the patients to avoid the more stigmatising label of mental illness, thus escaping the pernicious effects of discrimination found in Chinese culture.³⁸ Avoiding the label of schizophrenia and the discrimination that limits mentally ill people's participation in society may lead to a more positive 'social course of illness'³⁹ for the patient. Such hypotheses are clearly speculative at this point, however, and more research is needed before definitive conclusions can be drawn.

2. Attribution theory has proposed a link between certain attributional styles associated with high critical and/or hostile relatives, which has been supported empirically,^{14,16-19,24,34} including in the Chinese group described above.³⁴ Yet attribution theory explains less well how high emotional overinvolvement arises in relatives. Previous findings have demonstrated no attributional differences between high EOI relatives and low EE relatives,^{14,16} instead suggesting that these 2 groups are alike in attributional style. Identifying cognitive styles associated with EOI seems particularly relevant to understanding Chinese relatives of patients with schizophrenia who, due to cultural norms and perhaps as a result of their tendency to give more uncontrollable and universal attributions, appeared to demonstrate pure high EOI (170/504 or 33.7%) more frequently in Yang et al's group³⁴ than pure high criticism or hostility (25/504 or 5.0%).
3. The attribution-EE-relapse framework can be used to explore the impact of family factors on other psychiatric disorders besides schizophrenia such as bipolar disorder or major depression. Such investigations have yet to be undertaken in Chinese societies and may yield both emic and etic findings regarding how family processes influence course of psychiatric illness.
4. The attribution-EE-outcome model can be used to explain and further explore the protective effects of other Chinese culture-specific coping attitudes towards illness, such as that of 'yuan' or 'fate'.³² Relatives who believe in 'yuan', as a belief that family relationships are inescapable and 'fated' to be may attribute the genesis of the family member's mental illness to external and uncontrollable factors, which may in turn decrease their negative emotional reactions to the patient and thus protect the patient against relapse. Further studies of whether Chinese causal beliefs other than 'xiao xin yan' (such as 'yuan') impact patient outcome in a manner other than that explained by EE can further advance our knowledge of how relatives' beliefs and behaviours shape the patient's psychiatric outcome.

In conclusion, exploration of the relative's attributions regarding the patient's illness has identified a potential causal factor of EE, and exploration of how these 2 constructs relate to relapse has aided our understanding of the family processes by which patients relapse. Research in this area has advanced our understanding of these processes in western cultures, but has not been applied extensively in other cultural settings. Examination of how attributions and

EE predict relapse of schizophrenia in China lends cross-cultural validity to the proposed causal relationship between attributions and EE, and has also led to identification of a particular causal belief that appears to protect patients against relapse in a way not explained by EE. Use of the attribution-EE-outcome perspective in Chinese societies, where cultural norms in caring for ill family members differ greatly from the West, has potentially great application for furthering our understanding of issues concerning family functioning and patient relapse both within Chinese societies and other cultural settings.

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