

Provided for non-commercial research and education use.
Not for reproduction, distribution or commercial use.



This article appeared in a journal published by Elsevier. The attached copy is furnished to the author for internal non-commercial research and education use, including for instruction at the authors institution and sharing with colleagues.

Other uses, including reproduction and distribution, or selling or licensing copies, or posting to personal, institutional or third party websites are prohibited.

In most cases authors are permitted to post their version of the article (e.g. in Word or Tex form) to their personal website or institutional repository. Authors requiring further information regarding Elsevier's archiving and manuscript policies are encouraged to visit:

<http://www.elsevier.com/copyright>



Contents lists available at ScienceDirect

Social Science Research

journal homepage: www.elsevier.com/locate/ssresearch

Unmet expectations and symptoms of depression among the Three Gorges Project resettlers

Juan Xi ^{a,*}, Sean-Shong Hwang ^b^a Department of Sociology, University of Akron, Akron, OH 44325-1905, USA^b University of Alabama at Birmingham, 460 Heritage Hall Building, 1401 University Blvd., Birmingham, AL 35294-1152, USA

ARTICLE INFO

Article history:

Received 10 May 2010

Available online 9 September 2010

Keywords:

Unmet expectations

Depression

The Three Gorges Project

Project-induced relocation

ABSTRACT

To successfully resettle 1.27 million Chinese for the construction of the Three Gorges Project (TGP), the Chinese government employed a new re-resettlement policy which emphasizes infrastructural development of the resettlement sites to assure resettlers a sustainable livelihood following resettlement. Unfortunately, many benefits the policy promised have not materialized. As a result, many resettlers have suffered an increase in depressive symptoms associated with unmet expectations. Using panel data collected before and after relocation from a sample of Three Gorges resettlers, we found that a high proportion of resettlers reported unmet expectations which were significantly associated with an increase in depressive symptoms. Our findings indicate that undeliverable promises can backfire and further aggravate the harm inflicted on the displaced caused by the project-induced displacement. From the perspective of resettlers, a sound coping strategy to minimize the harm caused by the displacement on their mental wellbeing is to expect for the worst.

Published by Elsevier Inc.

1. Introduction

While previous research on project-induced displacement has unanimously painted population displacement as a stressful process that has led to widespread depression among the displaced (Hwang et al., 2007, 2010; Scudder and Colson, 1982), there has been very little theoretical development in explaining the connection. Past studies have focused on identifying the negative social and economic consequences often associated with population displacement as explanations of elevated mental distress among the displaced (Scudder and Colson, 1982; Scudder, 2009), the possibility that the increase could actually be a result of undeliverable benefits promised to the displaced by planners of projects in order to earn their compliance has been entirely overlooked. Building on past studies in diverse fields (Crosby, 1976; Dannefer, 1984; Irving and Montes, 2009; Nelson and Sutton, 1991; Phillips, 1998; Taris et al., 2006; Walker and Mann, 1987) that unmet expectations are conducive to depression, this study tests the hypothesis that unmet expectations are expected to increase depressive symptoms among those who are displaced by developmental projects.

A recent estimate indicates that about 15 million people around the world are displaced each year (Oliver-Smith, 2009) to make way for developmental projects such as dam building, urban development, and highway construction. In 1994, China started to build the world's largest dam project—the Three Gorges Project (TGP). From 1992 to 2008, about 1.27 million residents have been relocated for this project alone (SCGPCCEO, 2009). In order to successfully resettle the people who are displaced by the TGP, China's central government employed a new relocation policy known as “development-oriented

* Corresponding author. Fax: 1 330 972 5377.

E-mail address: jx@uakron.edu (J. Xi).

relocation.” (Wang, 2002) The policy deviates from past relocation strategies by mandating the state to provide the displaced with living conditions that would facilitate long-term settlement. Thus, in addition to providing the displaced with adequate monetary compensation for their losses, the state must provide them with farm lands, jobs, and houses that are at least comparable to the ones they lost. In other words, the state is responsible for building an infrastructure that is essential for sustainable development. The ultimate goal of the policy is to promise resettlers a better life after the relocation (McDonald et al., 2008). This policy has been praised by the World Bank as a model for resettlement efforts in developing countries (Bartolome et al., 2000). It also cultivated a high expectation among those who would be relocated (Heggelund, 2004). Despite the good intentions of the new policy, evidence shows that many of the promised benefits have not been realized. For example, impoverishment prevailed in many resettled communities (McDonald et al., 2008; Hao and Feng, 2005; Heggelund, 2004; Hwang et al., 2010; Li and Rees, 2000; Li et al., 2001; Pi and Lin, 2003; Qi, 1998; Su and Xu, 2005; Xi and Feng, 2001; Yie and Lei, 2000), joblessness, landlessness, and homelessness among resettlers are also well-documented (BBC Chinese Web, 2009; Xiong, 2001).

What do unmet expectations of post-relocation life portend for the mental wellbeing of the TGP resettlers? Relative deprivation theory claims that when individuals' expected desirable things to which they believe they are rightfully entitled and these expectations have fallen through, they may feel deprived and suffer subsequent mental distresses (Walker and Pettigrew, 1984; Walker and Mann, 1987). For example, when an anticipated promotion does not occur, or when rewards promised by an employer have fallen flat, individuals are likely to display psychological distresses (Gurr, 1970; Nelson and Sutton, 1991; Wheaton, 1994). Similarly, we expect an increase in depressive symptoms among Three Gorges' resettlers following relocation when the government failed to deliver the promised benefits. Although there are studies which have pointed out that unrealistic expectations held by TGP resettlers are problematic (e.g. Feng and Wang, 2004; Heggelund, 2004; Su and Xu, 2005), there has been no empirical evaluation of the consequences of unmet expectations for the resettlers. In this study, we ask whether unmet expectations about post-relocation lives are associated with symptoms of depression among TGP resettlers. This study would contribute to the relocation literature by empirically evaluating the presumed negative effects of unrealistic expectations, a problem that has been largely ignored so far in existing assessment of impact of the TGP.

2. Background

Relocation has long been seen as a stressful life event because it entails tremendous social and economic costs but with uncertain benefits (e.g. Magwaza, 1994; Ben-Sira, 1997; Lev-Wiesel, 1998). Involuntary resettlers are often victims of powerful external forces over which they have little or no control (Cernea, 1993), a condition that is particularly prone to distress (Pearlin, 1989). The link between relocation stress and emotional distress has been well established by involuntary relocation studies, such as refugee studies (e.g. Porter and Haslam, 2001). The negative mental health impact of project-induced involuntary relocation has also been well-established (Hwang et al., 2007, 2010; Scudder and Colson, 1982). Unlike refugees who are often driven out by traumatic events such as natural disasters or political conflicts, project-induced relocatees are usually forced to move by the power of state through a planned process. For project-induced relocatees, relocation stress comes from anticipating a forced relocation, traumatic moving process, and from demanding post-relocation adjustment (Xi et al., 2007; Scudder and Colson, 1982).

After 60 years of debates, investigations, and planning, the construction of the TGP was approved in 1992 by the national Congress of China and formally launched in 1994 on the Yangtze River—the third longest river in the world. Completed in 2009, the TGP has the greatest hydropower generating capacity and has been recognized as one of the top renewable energy projects in the world (People's Daily Online, 2009). Because the TGP created a reservoir about the size of the Lake Superior in a populated area, the number of people who have been relocated to make way for the TGP was unprecedented. Among the 1.27 million resettlers, about 40 percent were rural residents, more than one thirds of them had to move afar because of the land limitation in the Three Gorges area (China News Week, 2009). Although some long-distance resettlers moved with their co-villagers, a large majority of them were divided into smaller units at the receiving area because of limitation of farmland and accommodation challenges (Guo and Wang, 2010; Hwang et al., 2007). The reservoir has totally or partially submerged 12 cities and 114 townships. By 2009, all the affected urban residents had moved to corresponding new cities and towns constructed on higher ground near the old sites (SCGPCCEO, 2009).

For a long time, populations to be relocated for development projects have been seen by planners as an obstacle (Cernea, 1997; Li et al., 2001; Jing, 2000) or a nuisance (Heggelund, 2004) in China and in other developing countries. The major task of resettlement was to move people out of the affected area with little concern for the restoration of their livelihood after relocation (Cernea, 1997; Duan and Steil, 2003; Li et al., 2001; Jing, 2000). Although resettlers were usually paid a lump-sum monetary compensation, it was often not adequate to recoup their losses (Cernea, 2009; Heggelund, 2004; Jing, 2000). Therefore, although development programs usually aim to boost the economic development of a region, they also bring unintentional negative impact to the displaced (Cernea, 1997). In 1980s, the World Bank suggested a policy which moved beyond compensation and emphasized restoration and development of the livelihood of the displaced population (Brand, 2001). The policy stressed that project-induced resettlement “should be conceived and executed as a development program, providing sufficient opportunities to assist resettlers in their efforts to improve their former living standards and earning capacity.” (Cernea, 1993, p. 17) The TGP was among the first to adopt a development-oriented resettlement policy

(World Bank, 2000). It mandated the state to build an infrastructure and create conditions for the establishment and development of resettlers' livelihood in the post-relocation phase (Heggelund, 2004; Jing, 2000). To achieve the goal, the State Council earmarked 40 billion-yuan (\$4.8 billion) for resettlement, which accounted for 45% of the total budget for the project (Wang, 2002). Farmers were promised new lands comparable to their former lands or a factory job would be arranged for them. Private and state-owned enterprises were enticed with low interest loans to invest in the resettlement areas to help create manufacturing and service jobs. The state also promised that once the project is completed, a portion of the profits from power generation would be allocated for development funds to promote the local economy in the reservoir region (State Council, 2001). Moreover, many preferential treatments were accorded enterprises which facilitate long-term development of the resettlement areas (Wang, 2002). Officials described the new policy as "blood-creating assistance", in contrast to "blood-giving assistance" of the past which relied merely on monetary compensation (Meng, 1997).

Unfortunately, the policy makers failed to anticipate many practical challenges which emerged when the policy was implemented (De Wet, 2009). For example, providing farm lands of equal quality to farmers who lost their lands as a result of relocation was easier said than done. The lands they lost were mostly fertile farmlands down in the basins (Heggelund, 2004), but the replacements were infertile rocky slopes located on steep hills which were prompt to erosion (Li et al., 2001). The rising water level also brought with it many unanticipated landslides and made many places uninhabitable (BBC Chinese Web 2009; People's Daily Online, 2010). Although the government promised to provide factory jobs to farmers who lost their farm lands, the likelihood that ousted farmers would be absorbed by non-farm industries was slim not only because they generally lacked skills and qualifications (Jing, 2000), but also because factory jobs were scarce in this region and many existing enterprises were operating at a loss (Jing, 2000; Li et al., 2001; Tao, 1994; Wei, 1999; Zhu, 1996).

In anticipation of the TGP, the central government has withheld investment to the area for decades. As a result, the Three Gorges area has long been underdeveloped (Wei, 1999). For example, in 1998, a few years into the construction of the TGP, the GDP per capita for Wanxian Relocation and Development Region (WRDR) was less than half of that for the nation as a whole and was about one fourth of that of costal region (Ouyang and Jiang, 2002). Although the central government has had some success in bringing in some enterprises to the region during the early days of the TGP, over two-thirds of them have left or claimed bankruptcy by 2009 when relocation completed (SCGPCCEO, 2009), producing a large number of laid-off workers. Although the influx of resettlement funds has greatly improved the basic infrastructure of the region, especially in the cities (Qi, 2002), the hollowness in many non-agricultural industries in the region has become a well-recognized problem (Chun Yu, 2010; Deng, 2007). Many scholars have also worried about the adequacy of sustainable funds for the long-term economic development once earmarked construction funds diminishes after the completion of the TGP (Chun Yu, 2010). Creating adequate conditions for the development of resettlers' livelihood is again easier said than done. In addition, there were many other documented problems such as delays in delivering compensation, improper use or outright embezzlement of relocation funds, and inefficiency resulting from poor coordination among many layers of governmental bureaucracies (Chun, 2010; Heggelund, 2004; Jing, 2000; Tanner, 2005).

Clearly, although the new policy represents a major progress in project-induced population resettlement (Cernea, 2009), the TGP relocation is not as promising as the government wanted the resettlers to believe. Like another project in China employing a similar resettlement policy (i.e., the Xiaolangdi project on the Yellow River), post-relocation impoverishment remains a prevailing problem, although to a lesser degree compared to earlier efforts (Webber and McDonald, 2004; Duan and Steil, 2003; Heggelund, 2004). Empirical research has repeatedly shown that many of those who were displaced in the TGP have suffered decreases in income (Cheng, 2003; McDonald et al., 2008; Hao and Feng, 2005; Heggelund, 2004; Hwang et al., 2010; Li and Rees, 2000; Li et al., 2001; Pi and Lin, 2003; Qi, 1998; Su and Xu, 2005; Xi and Feng, 2001; Yie and Lei, 2000), as well as social isolation, and maladjustment (Feng, 2006; Liu and Lei, 1999) following relocation. Cases of landlessness, joblessness, and homelessness have also been reported by less systematic observations (BBC Chinese Web 2009; Human Rights Watch/Asia, 1995; New York Times, 1999; Wu, 1998). In sum, although the new relocation policy has been widely praised (Bartolome et al., 2000; Cernea, 2009; Heggelund, 2004), many of its promised benefits have yet to be realized.

The new policy and the accompanying government's propaganda exaggerating the project's benefits while downplaying its associated risks have instilled a false hope for a better future among the displaced reported widely in research conducted both prior to and after relocation (Ding, 1998; Heggelund, 2004; Hao and Feng, 2005; Jim and Yang, 2006; Li, 1996; Li et al., 2001; Li and Rees, 2000; Liu and Lei, 1999; Pi and Lin, 2003; Zuo, 1997). On the other hand, many resettlers were unable to foresee risks accompanying the relocation (Li et al., 2001; Xi et al., 2007).

3. Theories and hypotheses

Sociologists and psychologists have long been concerned with the implications of unrealized expectations. Several theories predict that unrealized expectations will negatively affect mental health. Porter and Steers (1973), for example, maintained that while realistic expectations of future life prepare people for coming life changes and facilitates adjustment, unrealistic expectations, on the other hand, lead to subsequent adjustment problems and distresses (Nelson and Sutton, 1991). Unrealized expectations have also been conceptualized as a deprivation of desirable things to which one feels entitled (Crosby, 1976; Reynolds and Baird, 2010; Walker and Mann, 1987). When reality is perceived as worse than expected, the gap between the expected and actual outcomes can affect mental health negatively (Walker and Mann, 1987; Walker and Pettigrew, 1984).

Although early applications of relative deprivation theory have focused on deprivation resulting from intergroup comparisons, recent research found that the feeling of deprivation can also result from within group comparisons or even intra-personal comparisons such as comparisons between ones' expectations and attainments (Walker and Pettigrew, 1984). For example, unexpected personal deprivations can result from failure to obtain an expected promotion or the infidelity of a spouse (Gurr, 1970). Thus, deprivation can originate from personal/egoistic deprivation as well as group/fraternalistic deprivation (Runciman, 1966). While discrepancies "between the position of one's own group and some other more privileged groups" motivate individuals to protest or rebel (Gurr, 1970), egoistic/personal relative deprivation, which reflects discrepancies "between personal expectations and attainments (Walker and Mann, 1987:275)," are more likely to trigger emotional distress or depression (Crosby, 1976; Walker and Mann, 1987).

Egoistic relative deprivation theory has been considered as a useful tool to understand consequences of unmet expectations (Reynolds and Baird, 2010). Theorists of egoistic relative deprivation maintain that when individuals feel that they are entitled to a reward, status, or benefit and they expect them to happen later in life, they are likely to feel deprived and distressed when such expected outcomes fail to materialize (Walker and Mann, 1987).

The negative mental health effect of unmet expectations has been confirmed in empirical studies across different research fields. For example, Carr (1997) noted that unachieved career ambitions predict mental distress. The literature on work and organizational psychology repeatedly documented that when employer's promised benefits or rewards are not delivered, dissatisfied employees are likely to withdraw (Irving and Montes, 2009; Phillips, 1998; Taris et al., 2006; Wanous et al., 1992). In migration literature, migrants' unmet expectations about new life have been identified as sources of mental stress (Berry, 1997) and are correlated with low quality of life after migration (Zhang et al., 2009). A recent study by Reynolds and Baird (2010) advanced the hypothesis that there is a causal association between unmet educational aspiration and symptoms of depression.

One way to avoid the undesirable consequences of unmet expectations is to maintain one's expectation at a realistic level. Students of work and organizational psychology has informed us that being able to meet the expectations is a critical condition for a successful work adjustment for new hires (Irving and Montes, 2009; Porter and Steers, 1973; Taris et al., 2006). Thus, although organizations are tempted to attract applicants by offering inducements, it is important that they should lower new employees' expectations to avoid negative effects associated with unmet expectations (Porter and Steers, 1973). Experimental studies (Weitz, 1956; Youngberg, 1963) have found that when individuals were provided with both positive and negative information such as difficulties in the new environment, they adjusted their expectations to more realistic levels which are more easily met, resulting in better adjustment outcomes (Weitz, 1956; Youngberg, 1963). On the contrary, information focused only on benefits would result in high expectations which are more likely to be unattainable (Porter and Steers, 1973; Weitz, 1956; Youngberg, 1963).

These same principles learned in other settings should be applicable to project-induced resettlers. Populations to be relocated usually would go through an anticipatory period before relocation actually takes place. A realistic expectation of post-relocation life would mentally prepare resettlers for the coming events and a result of "anticipatory socialization" (Merton, 1968). On the contrary, resettlers who feel they are entitled to a better life after relocation as promised by government authority are likely to be disappointed when the promises are not delivered. Relocation experts emphasize that planners should carefully evaluate possible benefits and risks in advance and honestly convey them to the resettlers to avoid unrealistic expectations of post-relocation life (Cernea, 1997).

The planners of the TGP did make an effort to inform and engage resettlers about the benefits and risks associated with the resettlement. The official relocation plan, for example, stipulates that resettlers should be involved in assessing inundation losses and be allowed to have a say in choosing the model and destination of relocation. Although not explicitly forewarning the resettlers of the risks and challenges ahead, the government propaganda called for resettlers' sacrifices for the interest of collective benefits. However, many factors have curtailed the effectiveness of the communication between government and resettlers. First, the long tradition of central planning has limited not only the capability but also the enthusiasm for resettlers to actively involve in the decision making process (Cheng, 2004; Chun, 2010; Guo and Wang, 2010). Second, the TGP resettlement is a politically sensitive issue in China. Discussion of negative side of the TGP and its relocation is suppressed and those who dared to touch the taboo are often penalized (Li et al., 2001; Su and Xu, 2005; Wei, 1999; Ying, 2001). Third, there is a built-in incentive for local officials overseeing the relocation to exaggerate the benefits of the relocation so that they can accomplish the task because their promotion is at stake (Cheng, 2003, 2004; Liu and Lei, 1999; Wei, 1999). Finally, the Chinese media, largely a mouthpiece of government policy, report only successful relocation stories. Such reporting is likely to further inflate the high expectation of many resettlers (Pi and Lin, 2003).

In addition, the overwhelming excitement about the potential benefits of the development-oriented relocation among the resettlers could also have resulted from the relocatees' hope for a better life. Because life in the Three Gorges area is miserable relative to China's more developed coastal regions, any changes in the life gives relocatees a glimpse of hope for a better future (Cheng, 2003; Feng and Wang, 2004; Heggelund, 2004; Liu, 2002; Liu and Lei, 1999; Pi and Lin, 2003; Su and Xu, 2005; Wang and Zhou, 2001). This new dimension of relative deprivation is likely to make resettlers particularly vulnerable to a fantasized future and the negative consequences associated with disappointments.

Because project-induced relocation is known to be stressful, previous studies of its negative mental health outcome have focused on demanding social, economic, and cultural adjustments as well as adverse life changes during and after relocation as the primary causes of elevated depression among the displaced (Berry, 1997; Cernea, 1997; Hwang et al., 2007, 2010; Scudder and Colson, 1982). The extent to which such elevation might also have been partially a result of unmet expectations

as suggested by relative deprivation theory has not been examined. It is possible that differences in mental health between those who encounter adverse life changes versus those who do not may also be due to the feeling of deprivation of an expected better life. Even for resettlers who did experience some improvement in their post-relocation life compared to their pre-relocation life, they might still feel frustrated if their expectation is higher than what they have actually attained. This study tests the hypothesis that unmet expectations have a harmful impact on resettlers' mental health above and beyond the effects of other relocation-induced stressors commonly included in past studies. Controlling for migration-induced adverse changes, adjustment difficulties, social psychological resources and coping, factors which are considered causal in past studies of project-induced migration (Cernea, 1997; Hwang et al., 2007, 2010; Scudder and Colson, 1982), we expect resettlers who experienced more unmet expectations would see a greater increase in depressive symptoms.

4. Data and methods

Data used in this study came from a prospective panel study involving a pre-migration and a post-migration survey spaced 3 years apart. The TGP migration provided a natural experiment-like research condition for migration studies. The construction of the dam and the reservoir required the relocation of all those who were in the way on a non-selective basis. This allowed us to measure migration consequences free of confounding selectivity. In addition, the TGP migration as a scheduled event permitted us to conduct pre- and post-migration surveys. As a result, we could gather information about expectations in a pre-migration survey and ascertain whether or not such expectations have been realized in a post-migration survey. The prospective research design enables us to measure unmet expectations accurately without depending on resettlers' memories which are expected to be distorted by their relocation experiences.

The pre-migration sample consists of 975 designated migrants and 555 non-migrants recruited from three rural and two urban residential communities randomly selected from Wanxian Relocation and Development Region (WRDR) which was formerly a part of the Sichuan Province where 80% of Chinese designated for displacement resided (Weng, 1999)¹. Face-to-face interviews were conducted in late 2002 and early 2003 by 29 sociology graduate students from two Chinese universities. The survey had a response rate of 99%, a high rate typical of face-to-face interviews in China (Feng, 2007). A follow-up survey was conducted in early 2006, in which we successfully traced and interviewed 1056 subjects, with a success rate of about 70 percent. Among those who were successfully traced, 350 respondents were non-migrants, 286 were designated migrants but had not moved², and 420 were designated migrants who had moved. This study focused on 420 resettlers whom we were able to trace successfully. The exclusion of 350 non-migrants is necessary because relocation-related depressive symptoms and unmet expectations are concepts that are relevant only to designated migrants who have been resettled. The 286 designated migrants who had not moved by the time of the follow-up survey were also excluded for the same reason.

Half of our respondents are female and the sample as a whole have an average age of 46 years and an average education attainment of 6.4 years. About 39% of the respondents were urban residents and 61% were rural residents at time 1. Resettlers in our sample have been relocated for an average time of 22 months.

To address possible biases that might result from the attrition, we conducted a sensitivity analysis by regressing a dummy dependent variable, indicating whether a respondent captured in wave 1 was missed in wave 2, on five socio-demographic variables (gender, age, urban/rural residence, education, household income) measured at time 1 using a logistic model. The results (not shown) indicated that only one of these factors (i.e., urban/rural residence) had a significant effect on the attrition, with urban residents being more likely to be missed in the follow-up survey. To detect the possible implications of the attrition, we computed the hazard rate of attrition, which was equal to the predicted probability of exclusion, minus 1, and included the hazard rate as a selection bias correction factor in the analysis (Beck, 1983).

4.1. Outcome measure

Our relocation outcome of interest was depressive symptoms, which was indicated by the 20-item CES-D scale (Radloff, 1977). While mental distress manifests itself in many forms, depressive symptoms are the most common ones (Turner and Lloyd, 1999). The CES-D scale is a survey-based measure of depressive symptoms which has known psychometric attributes and well-established reliability and validity (Vega and Rumbaut, 1991). The scale asks respondents if they have experienced any depressive symptoms from a list of 20 during the past week. The same scale was used in both the pre-migration

¹ Our sampling took place in two stages. We first randomly selected three rural and two urban communities from two strata of communities in the WRDR. The five clusters include 15 rural villages and five urban residential neighborhoods. The final selection of respondents was not random because of several reasons. First, the ongoing relocation process made it impossible to get a complete sampling frame. Second, although tried to obtain a list of resettlers from local officials, the political sensitivity of the TGP resettlement prevented the officials to co-operate with us. When the pre-relocation survey was conducted in December 2002 and January 2003, we found that many of the resettlers in selected areas have already moved. We ended up conducting census of the remaining resettlers in the 15 rural villages and systematic sampling in the five urban neighborhoods. Because our sample was not random in restrict sense, and the number of units selected at the first stage was not large, we conducted sensitivity analysis to detect possible biases. We compared the demographic profile of our sampled households with 2000 census for Chongqing Municipality as a proxy of our study population because of the availability of statistics (Chongqing Statistical Year Book 2004, Table # 3-6). The comparison indicated that our sample closely mirrored the population in terms of age, sex, nationality, educational compositions, and average family size.

² Because the timing of relocation was determined by altitude of the locations, those yet-to-be moved resettlers generally resided in location with higher elevations.

($\alpha = 0.87$) and the post-migration ($\alpha = 0.89$) survey. Although cross-cultural applications of the CES-D have aroused concerns in the past, empirical evidence shows that the scale is appropriate for samples with different cultural backgrounds (Beiser, 2005; Lai, 1995; Lin, 1989; Vega and Rumbaut, 1991). To capture the amount of depressive symptoms induced by the TGP relocation, we relied on *changes in depressive symptoms* from time 1 to time 2 as our dependent variable in the analysis. When subtracting pre-relocation CES-D score from post-relocation CES-D score, each individual served as his or her own control, an effective way to rule out pre-relocation variation across respondents (e.g. anticipatory stress) as a factor of their post-relocation differences (Allison, 1990; Firebaugh, 2008)³.

4.2. Unmet expectations

In the pre-relocation survey, respondents were asked whether or not they expect (1) improved financial condition after relocation, (2) adequate compensation, (3) receiving benefits promised by government, (4) improved housing, (5) no TGP-induced cost to their family, and (6) no personal sacrifice to the TGP. The post-migration survey asked respondents whether each of these expectations was met. For each question, a score of 1 was assigned to the respondents if s/he answered “yes” to the pre-migration survey and “no” to the post-migration survey, and 0 otherwise. The sum of the six items yielded a measure of *unmet expectations* which was used in regression analysis to estimate the effect of each additional unit of increase in unmet expectations on changes in depressive symptoms.

4.3. Control variables

Because increases in depressive symptoms could result from other factors known to affect depression, it is therefore necessary to control for them. *Relocation-induced adverse life changes* was measured in the post-relocation survey by asking resettlers to identify any negative changes they had actually experienced from the forced relocation from a list which included (1) income loss, (2) worsening of housing conditions, (3) worsening work/job environment, (4) incidences of domestic conflicts, and (5) worsening relationship with neighbors. For each question, responses were coded 1 for yes, and 0 for no. A count measure was created by summing all 5 items to indicate number of adverse life changes.

Adjustment difficulties was measured in the post-relocation survey by a set of questions asking respondents if they (1) have difficulties communicating with members of the receiving community; (2) feel that they are treated unfriendly by host community as outsiders; (3) have difficulties to integrate into the host community because of the unfamiliar customs; (4) feel that they have been assigned a worse job or inferior farmland because of their migrant status; and (5) have experienced significant changes in work schedule or regulations. For each question, responses were coded 1 for yes, and 0 for no. A count measure was created by summing all 5 items to indicate number of adjustment difficulties.

Not all displaced will be affected equally because of differential distribution of protective social and psychological resources. We control for these variables accordingly. Social support was measured by asking respondents whether or not, during the last 30 days, they had talked to or contacted with any of the following people with whom they did not share a residence: (1) parents; (2) adult children; (3) siblings; (4) other relatives; (5) good friends; (6) neighbors; (7) colleagues; (8) cadres; and (9) others? For each question, responses were coded 1 for yes, and 0 for no. The sum of the 9 items yielded a count measure which indicated magnitude of social connections. *Changes in social support* from time 1 to time 2 was used in the analysis.

Sense of control was measured at both wave 1 and wave 2 using Pearlin and Schooler's (1978) seven-item mastery scale. The first- and second-wave Cronbach's α for the mastery scale were 0.74 and 0.78, respectively. *Changes in sense of control* from time 1 to time 2 was used in the analysis.

In addition, individuals who can efficiently cope with their life problems also suffer less distress (Pearlin, 1989). Positive comparison (Pearlin, 1989) was measured by a four-item scale: “Compared to those who you know, would you say that you are (a) much worse, (b) somewhat worse, (c) about the same, (d) somewhat better, or (e) much better in terms of (1) income; (2) occupation; (3) social prestige; and (4) social connections (*guanxi*)?” Responses to the four questions were summed to form a scale with scores ranging from -4 to 20. The scale had a Cronbach's alpha of 0.79 and 0.81 for the first and second wave, respectively. *Changes in positive comparison* from time 1 to time 2 was used in the analysis. Finally, we also controlled for *time since relocation* because of its possible associations with both our dependent and independent variables.

Regression analyses were used to test the effects of unmet expectations on depressive symptoms. We used “the difference model” for our regression analysis in which difference scores were used whenever possible⁴. Using difference scores, the model focused on the within individual variations and automatically controlled for preexisting across-individual differences in measured variables and unmeasured time-invariant variables (Allison, 1994). Therefore, the difference model has a major

³ To rule out the possibility that the observed over-time changes in depressive symptoms might actually caused by some other macro-level conditions or historical events in China during the three-year study period, we conducted sensitivity analysis comparing over-time changes in depressive symptoms among resettlers, non-movers, and designated movers who have yet to be moved. While resettlers suffered a significant increase in depressive symptoms from time 1 to time 2 (4.32, $p < 0.0001$), the non-migrants and those designated migrants who have yet to be moved did not report significant increases in their symptoms of depression (1.02, $p = 0.18$; and 0.56, $p = 0.52$ respectively). The findings lent credence to viewing changes in depressive symptoms among resettlers as relocation-induced rather than an artifact of unspecified macro-social changes.

⁴ Because some variables were only relevant either at time 1 or at time 2, not every variable in the model was measured by a difference score. However, difference scores were used whenever available (Allison, 1990).

Table 1

Means and proportions at pre- and post-relocation survey for dependent and independent variables (n = 420).

	Pre-relocation			Post-relocation			Changes
	Mean/proportion	SD	Range	Mean/proportion	SD	Range	
Depressive symptoms	21.94	(10.25)	1–52	26.25	(10.21)	0–52	4.32***
Unmet expectations				1.24	(1.14)	0–5	
Adverse life changes				1.14	(0.93)	0–4	
Adjustment difficulties				0.55	(0.99)	0–5	
Social support	3.55	(1.43)	0–7	3.69	(1.58)	0–8	0.14
Sense of control	21.40	(4.78)	11–32	19.98	(4.60)	8–35	–1.42***
Positive comparison	10.64	(2.90)	3–17	10.28	(2.37)	1–17	–0.36*
Time since relocation				22.14	(11.77)	0–36	

Note. Two-tailed *t*-test.

* $p < 0.05$.

*** $p < 0.001$.

advantage over other alternatives commonly used to analyze panel data (Firebaugh and Beck, 1994, pp. 636–637): exogenous variables which affect depressive symptoms, but do not vary from time 1 to time 2 need not be included in the model⁵. This feature enables researchers to specify models more economically while greatly reducing specification errors. Allison (1994) also points out that in non-experimental data, the change-score estimator is nearly always preferable for estimating the effects of events because it automatically controls for all constant, unmeasured differences between individuals, regardless of whether or not those differences are associated with the likelihood of event occurrence.

5. Results

Table 1 reports the descriptive statistics of our sample, dependent variable, and independent variables in analysis. The mean pre-relocation CES-D score was 21.94, and the post-relocation score was 26.25, an increase of 4.32 points (a 20% increase) on average. The difference was statistically significant using *t*-test. In depression literature, a CES-D score of 16 or above is considered clinically depressed in Western society (Radloff, 1977). Compared to this standard, TGP resettlers suffered a very high level of distress even before the relocation took place.

The average number of unmet expectations experienced by TGP resettlers was 1.24 (range 0–5). With regard to relocation-induced life changes, the average TGP resettler experienced 1.14 adverse changes (range 0–4). The mean number of adjustment difficulties was 0.55 (range 0–5). There was no significant change in social support from time 1 to time 2. However, the average sense of control was reduced by 1.42 points during the period, a statistically significant decrease. There was also a significant drop in average positive comparison score following relocation.

Table 2 provides detailed descriptive analyses of the six items which constitute the unmet expectation scale. Column 1 shows the percentages of respondents who had a specific expectation at time 1; column 2 reports the percentages of those whose expectation was unmet at time 2 given they had a specific expectation at time 1. Although the percentages of resettlers who held a particular expectation were not very high, about 74% of the total sample had expected at least one of the listed expectations. However, the percentages of people who had a certain expectation at time 1 but were unable to realize it at time 2 were quite high (ranging from 65% for those who expected receiving government benefits to 94% for those who expected improved financial situation).

Table 3 reports the mental health impacts of unmet expectations by comparing the changes in depressive symptoms from time 1 to time 2 for three groups: (1) those who did not have the expectation at time 1; (2) those who had the expectation at time 1 and the expectation was met at time 2; and (3) those who had the expectation at time 1 but the expectation was unmet at time 2. It was obvious that the group with unmet expectations suffered greatest increase in depressive symptoms from time 1 to time 2. Because the numbers of those who did meet their expectations were small, we combined them with those who did not have expectations when making between-group comparisons for each of the six items. With one exception, the group with unmet expectations shows significantly greater increases in depressive symptoms than its counterpart made up of those who either did not have an expectation or the expectation was fulfilled.

Table 4 reports results from the difference model analyzing relocation-related depressive symptoms⁶. Two difference models were estimated to test our hypothesis that unmet expectations have a harmful impact on resettlers' mental health above and beyond the effects of other relocation-induced stressors such as adverse life changes and demanding adjustment.

⁵ We need to point out that the difference model is not useful for estimating the effects of observed time-invariant variables such as gender, age, rural/urban residency, and education. Assuming the effects of time-invariant variables to be stable between time 1 and time 2, they dropped off the model when taking the differences from time 1 to time 2 (Firebaugh, 2008). This assumption was confirmed to be reasonable by sensitivity analyses in which these time-constant variables were added into the model and their coefficients were non-significant (Allison, 2005). Age was treated as time-invariant because the change is a constant (3 years) for every respondent. Rural/urban residency was also treated as time-invariant because only 19 respondents in our sample have changed from rural to urban residency or vice versa during the study period.

⁶ Time constant independent variables such as age, gender, education, and rural/urban residency were differenced out of the model. Their effects were not estimated.

Table 2
Descriptive Statistics for Unmet Expectations (n = 420).

	Had an expectation at T1	Expectation unmet at T2, given had the expectation at T1
<i>Expectations</i>		
Improved financial condition	19.29	93.80
Adequate compensation	11.19	91.49
Improved housing	12.38	80.77
Receiving benefits promised by government	20.24	64.71
No TGP-induced cost to family	41.90	90.91
No personal sacrifice	42.14	77.40
At least one of the above	74.29	

Table 3
Mean changes in depressive symptoms from time 1 To time 2 for expectation groups (n = 420).

	Not expected at T1	Expected at T1, met at T2	Expected at T1, unmet at T2	t ^a
<i>Expectations</i>				
Improved financial condition	3.58 (11.65) 339	-3.00 (10.63) 5	8.36 (11.79) 76	3.29**
Adequate compensation	4.09 (11.78) 373	7.5 (8.66) 4	6.44 (12.30) 43	1.22
Improved housing	4.02 (11.71) 368	2.7 (9.07) 10	7.79 (12.89) 42	1.99*
Receiving benefits promised by government	4.14 (11.73) 334	2.10 (11.75) 30	6.98 (12.13) 55	1.77+
No TGP-induced cost to family	2.64 (11.32) 244	1.87 (7.70) 16	7.26 (12.35) 160	4.00***
No personal sacrifice	3.69 (11.99) 243	0.87 (10.85) 40	6.58 (11.43) 137	2.69**

Note: Numbers in parentheses are standard deviations. Numbers immediately beneath the parentheses are counts.

^a Two-tailed *t*-test between those who experienced an unmet expectation vs. the others.

+ *p* < 0.10.

* *p* < 0.05.

** *p* < 0.01.

*** *p* < 0.001.

Table 4
OLS regression analysis of TGP relocation-induced depressive symptoms using difference model (n = 420).

	Model 1		Model 2	
	Coef.	Beta	Coef.	Beta
Unmet expectations			1.46**	0.14
Adverse life changes	1.30*	0.10	1.40*	0.11
Adjustment difficulties	1.39**	0.12	1.31*	0.11
Changes in social support	-0.71**	-0.12	-0.65**	-0.11
Changes in sense of control	-0.86***	-0.45	-0.81***	-0.42
Changes in positive coping	-0.50**	-0.13	-0.46**	-0.12
Time since relocation	-0.04	-0.04	-0.04	-0.04
Intercept	4.83+		0.71	
Attrition correction factor	-6.27	-0.05	-1.92	-0.02
Adjust R ²	0.33		0.36	

Note. Two-tailed *t*-test.

+ *p* < 0.10.

* *p* < 0.05.

** *p* < 0.01.

*** *p* < 0.001.

In Model 1, we included adverse life changes, adjustment difficulties, social and psychological resources, coping, and time since relocation as independent variables to explain the variation in the changes of depressive symptoms from time 1 to time 2. As expected, adverse life changes and adjustment difficulties were responsible for a significant increase in depressive symptoms following relocation. On the contrary, resources and coping protected resettlers from relocation-induced depressive symptoms.

To test our main hypothesis that unmet expectations affect depressive symptoms above and beyond factors that are well known in the literature, we then added unmet expectations into the model (Model 2). As expected, unmet expectations had a significant harmful effect on depressive symptoms even after controlling for adverse life changes, social and psychological resources, coping, time since relocation, and unmeasured time-constant variables⁷. Depressive symptoms increased by 1.46 units for each additional unmet expectation. Comparing standardized coefficients of unmet expectations and the other two relocation-induced stressors, unmet expectations stood out as a stronger predictor of depressive symptoms. Adding unmet expectations into the model increased the R^2 by three percent. Clearly, unmet expectations played an irreplaceable role in accounting for the increase in depressive symptoms among the Three Gorges resettlers that was not explained by factors that were commonly included in previous analyses (Berry, 1997; Cernea, 1997; Hwang et al., 2007, 2010; Scudder and Colson, 1982)⁸.

6. Conclusion and discussion

Although the TGP relocation employed a promising new policy which emphasized the establishment and development of resettlers in their post-relocation life, many of the promised benefits have yet to be delivered. When government propaganda emphasizes the potential benefits and local relocation officials hide the potential risks from the resettlers, they instill an unrealistic expectation among the resettlers. Our findings indicated that undeliverable promises can backfire and aggravate the harm inflicted on the resettlers by the displacement. From the perspective of resettlers, a sound coping strategy to minimize the harm caused by the displacement on their mental wellbeing is to expect for the worst.

Our results also support the policy guidelines recommended by the World Bank for project-induced relocation that resettlers should have access to all necessary information including potential harms prior to granting permission to a project (Goodland, 2004). Although informing resettlers of the negative outcomes associated with relocation may increase resistance to the project and add challenges to the relocation effort (Cernea, 1997), it is the right thing to do because hiding them from the resettlers is not only immoral but is also harmful to their mental wellbeing⁹.

It has been recognized that the overall relocation outcome for the TGP relocation is better than previous relocation practices guided by old policy. The World Bank actually considers the TGP relocation among the best compared to relocation outcomes in other developing countries (Heggelund, 2004). Our additional analyses also detected noticeable improvements in a few aspects of resettlers' livelihood. For example, there was increased number of households living in brick/stone/concrete houses and less households living in wood/mud houses after relocation. More households reported gaining access to running waters after relocation than before. The average amount of farmlands held by rural resettlers has actually increased after relocation. However, many resettlers still find that many areas of their post-relocation life circumstances fell short of their expectations. And our study found a clear association between unmet expectations and depressive symptoms.

However, it is reasonable to suggest that the increase in depressive symptoms may actually be a short-term phenomenon that will go away as time goes by. For example, some benefits may take more than a few years to materialize. We also expect resettlers to recalibrate their expectations in light of the new reality and thus eliminate unmet expectations as a source of distress (Reynolds and Baird, 2010). As we have learned from assimilation theories and immigrants studies, resettlers are expected to make better adjustments to their new community the longer they stay there. Because the relocation was just completed a few years ago, it is impossible for us to test this hypothesis. We need longitudinal data collected periodically to detect the dynamic relationship between expectation and depression. Due to the limitations of our data, the current study can focus only on the short-term relationship.

Although the relocation for the TGP as initially planned has been completed, it is estimated that another 300,000 people living near the reservoir area would have to relocate because of unexpected environmental problems resulting from initial relocation (People's Daily Online, 2010). This would include a large number of those who have just moved up from the sub-merged basin. At the same time, the ongoing massive South-to-North Water Diversion project, which aims to divert water from Yangzi River to relieve the water shortage in Beijing, is relocating 440,000 people who are in the way (SCSTNWDO,

⁷ Although one can suggest that the expectations at time 1 may be indicative of underlying mental health because persons with positive mental health might be more likely to hold positive expectations for the future (Taylor, 1989). Measuring depressive symptoms in change score mitigates such possibility because the change score is unlikely to affect expectations measured at time 1. Literature also suggests that the mere presence of expectations at time 1 may be consequential on mental health (Carr, 1997). We detected significant harmful effects of the mere presence of expectations at time 1 in our sensitivity analysis not reported here. However, because a very large proportion of those who had expectations at time 1 also reported that their expectations were unmet at time 2 (see Table 3), we suspected that the detected effect for time 1 measure of expectations overlapped with the effect of unmet expectations. Our suspicions were confirmed by the finding that the effect of time 1 expectations was wiped out after unmet expectations were added to the model.

⁸ Because of the well recognized buffering role of social and psychological resources in mental health research, it makes sense to suggest that the impact of unmet expectations may be contingent on these resources. We conducted sensitivity analysis by adding several interaction terms into the model to test the moderation hypothesis. However, none of the interaction terms was significant statistically.

⁹ Project-induced population displacement programs are often controversial and politically charged. Although our conclusions are based on empirical data, interpretations of the results are nevertheless subject to the political views of individual readers and writers.

Table A1Correlations between dependent and independent variables ($n = 420$).

	2	3	4	5	6	7	8	9	10	11	12
Changes in depressive symptoms (1)	0.26***	0.19***	0.23***	-0.50***	-0.14**	-0.29***	-0.05	-0.05	-0.05	-0.09 ⁺	-0.14**
Unmet expectations (2)		0.00	0.18***	-0.20***	-0.08 ⁺	-0.15**	-0.03	-0.06	-0.19	-0.28***	-0.11 [*]
Adverse life changes(3)			0.20***	-0.13**	-0.03	-0.13**	-0.02	0.13**	0.04	0.19***	-0.05
Adjustment difficulties (4)				-0.16**	-0.02	-0.18***	-0.07	0.00	-0.09 ⁺	-0.23***	-0.18***
Changes in sense of control (5)					0.02	0.26***	-0.05	0.01	0.05	0.16***	0.16***
Changes in social support(6)						0.08	-0.06	0.09 [*]	0.05	-0.03	-0.03
Changes in positive comparison (7)							0.07	0.11 [*]	0.02	0.05	0.05
Age at time 1 (8)								-0.05	-0.40	0.19***	0.19***
Gender (9)									-0.06	0.00	0.00
Education (10)										0.07	0.07
Urban residency at time 1 (11)											0.33***
Time since relocation (12)											

Note. Two-tailed t -test.⁺ $p < 0.10$.^{*} $p < 0.05$.^{**} $p < 0.01$.^{***} $p < 0.001$.

2009). Thus, our findings regarding the clear association between unmet expectations and symptoms of depression are educational not only to planners of future relocations in China and elsewhere, but particularly useful for those who are responsible for the re-relocation of the 300,000 resettlers in the Three Gorges region and the 440,000 resettlers induced by the Water Diversion project.

Appendix A

See Table A1.

References

- Beck, R.A., 1983. An Introduction to Sample Selection Bias in Sociological Data. *American Sociological Review* 48, 386–398.
- Beiser, M., 2005. The Health of Immigrants and Refugees in Canada. *Canadian Journal of Public Health* 96, 30–44.
- Ben-Sira, Zeev., 1997. Immigration, Stress, and Readjustment. Praeger, West Port, CT.
- Berry, John.W., 1997. Immigration, Acculturation, and Adaptation. *Applied Psychology: An International Review* 46, 5–68.
- Brand, Laurie, 2001. Displacement for Development? The Impact of Changing State-Society Relations. *World Development* 29, 961–976.
- Carr, Debrah. 1997. "the Fulfillment of Career Dreams at Midlife: Does it Matter for Women's Mental Health?" *Journal of Health and Social Behavior* 38:331–344.
- Cernea, Michael.M., 1993. Disaster-related Refugees Flows and Development-caused Population Displacement. In: Cernea, M.M., Guggenheim, S.E. (Eds.), *Anthropological Approaches to Resettlement: Policy, Practice, and Theory*. Westview, Boulder, pp. 375–402.
- Cernea, Michael M., 1997. The risks and reconstruction model for resettling displaced populations. *World Development* 25, 1569–1587.
- Cernea, Michael M., 2009. Financing for development: benefit-sharing mechanisms in population resettlement. In: Anthony, Oliver-Smith (Ed.), *Development & Dispossession*. School for Advanced Research Press, Santa Fe NM, pp. 49–76.
- Cheng, Yu, 2003. A research into the adaptability of the immigrants from the three gorges to Guangdong from the perspective of anthropology (in Chinese). *Journal of South-Central University of Nationalities (Humanities and Social Sciences)* 23, 93–97.
- Cheng, Yu, 2004. The word bank's resettlement policy and problems and solutions in the resettlement of the three-Gorges resettlers in Guangdong Province (in Chinese). *Journal of South-Central University of Nationalities (Humanities and Social Sciences)* 25, 345–348.
- China News week, 2009. The three gorges migrants: improving in the exploration—director of resettlement planning division in the state council gorges project construction committee executive office answering China newsweek (In Chinese). *China Newsweek* 21, 2–4.
- Chun Yu, Zhongbo, 2010. Public policy research about the process of migrants relocation from Three Gorges Project (in Chinese). *Electric Technology and Environment* 36, 1–4.
- Crosby, Faye., 1976. A model of egoistical relative deprivation. *Psychological Review* 83, 85–113.
- Dannefer, Dale., 1984. Adult development and social theory: a paradigmatic reappraisal. *American Sociological Review* 49, 100–116.
- Deng, Baisheng, 2007. Post-relocation support of the three Gorges migrants: In the case of agricultural program in Yunyang County (In Chinese). *Journal of Shanxi Finance and Economics University* 29, 86–87.
- De Wet, Chris, 2009. Does development displace ethic? The challenge of forced resettlement. In: Anthony, Oliver-Smith (Ed.), *Development & Dispossession*. School for Advanced Research Press, Santa Fe NM, pp. 77–96.
- Ding, Qigang, 1998. What are the three gorges resettlers thinking? In: Dai, Qing (Ed.), *The River Dragon Has Come*. M.E. Sharpe, Armonk, NY, pp. 70–89.
- Duan, Yuefang, Steil, Shawn, 2003. China Three Gorges Project resettlement: policy, planning and implementation. *Journal of Refugee Studies* 16, 422–443.
- Feng, Xiaotian., 2006. The replanting of lives (In Chinese). *Jiangsu Social Sciences* 2006 (3), 78–82.
- Feng, Xiaotian., 2007. Are higher response rates better? An alternative view on response rate (In Chinese). *Sociological Research* 3, 121–135.
- Feng, Xiaotian, Wang, Xiaolu, 2004. Status quo and trends in the studies of the three gorges migrants (In Chinese). *Sociological Research* 2004 (1), 107–111.

- Firebaugh, Glenn, 2008. Seven Rules for Social Research. Princeton University Press.
- Firebaugh, G., Beck, F.D., 1994. Does economic growth benefit the masses? Growth, dependence, and welfare in the third world. *American Sociological Review* 59, 631–653.
- Goodland, Robert, 2004. Free, prior and informed consent and the world bank group. *Sustainable Development Law & Policy Summer 2004*, 66–75.
- Guo, Cheng, Wang, Yang, 2010. Analysis of character of conversion of the role of immigrants: study on the social role of three Gorges immigrants to Shandong Province (In Chinese). *Chinese Journal of Social Medicine* 27, 1–4.
- Gurr, Ted., 1970. *Why Men Rebel*. Princeton University Press, Princeton NJ.
- Hao, Yuzhang, Xiaotian, Feng, 2005. A research on the social adaptability of migrants of three gorges and its influential factors: based on an investigation into 227 outward migrants in Jiangsu province (in Chinese). *Market and Demographic Analysis* 11, 62–77.
- Heggelund, Gørild, 2004. *Environment and Resettlement Politics in China*. Ashgate Publishing Company, Burlington.
- Hwang, Sean-Shong, Cao, Yue, Juan, Xi, 2010. Project-induced migration and depression: a panel analysis. *Social Science and Medicine* 70, 1765–1772.
- Hwang, Sean-Shong, Xi, Juan, Cao, Yue, Feng, Xiaotian, Qiao, Xiaofei, 2007. Anticipation of migration and psychological stress and the three Gorges Dam Project, China. *Social Science and Medicine* 65, 1012–1024.
- Human Rights Watch/Asia, 1995. The three gorges dam in China: forced resettlement, suppression of dissent and labor rights concerns. *Human Rights Watch/Asia* 7 (2), 1–48.
- Irving, Gregory P., Montes, Samantha D., 2009. Met expectations: the effects of expected and delivered inducements on employee satisfaction. *Journal of Occupational and Organizational Psychology* 82, 431–451.
- Jim, C.Y., Yang, Felix Y., 2006. Local responses to inundation and de-farming in the reservoir region of the Three Gorges Project (China). *Environmental Management* 38, 618–637.
- Jing, Jun, 2000. Displacement, resettlement, rehabilitation, reparation and development—China report. Thematic review 1.3 prepared as input into the world commission on dams. Retrieved from www.dams.org.
- Lai, Gina., 1995. Work and family roles and psychological well-being in urban China. *Journal of Health and Social Behavior* 36, 11–37.
- Lev-Wiesel, Rachel, 1998. Coping with the stress associated with forced relocation in the Golan Heights, Israel. *Journal of Applied Behavioral Science* 34, 143–160.
- Li, H., Rees, P., 2000. Population displacement in the three gorges reservoir area of the Yangtze River, central china: relocation policies and migrant views. *International Journal of Population Geography* 6, 439–462.
- Li, Heming, Waley, Paul, Rees, Phil, 2001. Reservoir resettlement in China: past experience and the three gorges dam. *The Geographic Journal* 167, 195–212.
- Li, Jiongguang, 1996. Survey and Policy Study on Attitude of Three Gorges Rural Migrants. *Social Science Research* (2). Available from: <http://www.chinariver.org/big5/articles/leekk.html>.
- Lin, Nan, 1989. Measuring depressive symptomatology in China. *Journal of Nervous and Mental Disease* 177, 121–131.
- Liu, Faguo, 2002. Reflections on emigrants interview of the three gorges area and their handling (In Chinese). *Journal of Chongqing Three Gorges University* 18, 17–18.
- Liu, Zheng, Hong, Lei, 1999. Social attitudes of the three gorges migrants in post-migration adjustment (in Chinese). *Population Study* 23, 18–23.
- McDonald, Brooke, Webber, Michael, Duan, Yuefang, 2008. Involuntary resettlement as an opportunity for development: the case of urban resettlers of the Three Gorges Project, China. *Journal of Refugee Studies* 20, 82–102.
- Magwaza, A.S., 1994. Migration and psychological status in South African black migrant children. *Journal of Genetic Psychology* 155, 283–288.
- Merton, Robert, 1968. *Social Theory and Social Structure*. The Free Press, New York.
- Meng, Xiuqing, 1997. Tentative Ideas on the methods of handling the leftover problems of reservoir resettlement. *Memorandums of Hydraulics, Poverty Relief, and Development of Reservoir Areas* Issue 3, 13–18.
- Nelson, D.L., Sutton, C.D., 1991. The relationship between newcomer expectations of job stressors and adjustment to the new job. *Work and Stress* 5, 241–251.
- New York Times, 1999. Chinese Journal Boldly Criticizes Government's Dam Project. March 18, 1999.
- Oliver-Smith, Anthony, 2009. Introduction: development-forced displacement and resettlement: a global human rights crisis. In: Oliver-Smith, Anthony (Ed.), *Development & Dispossession*. School for Advanced Research Press, Santa Fe NM.
- Ouyang, Zhuhui, Jiang, Chonglun, 2002. Economic status quo of the Three Gorges Project emigrants and a study of its aiding policy (in Chinese). *Journal of Chongqing Three Gorges University* 18, 15–20.
- Pearlin, L.I., 1989. The sociological study of stress. *Journal of Health and Social Behavior* 30, 241–256.
- Pearlin, L.I., Schooler, C., 1978. The Structure of Coping. *Journal of Health and Social Behavior* 19, 2–21.
- People's Daily Online, 2009. "Three Gorges Dam among World's Top 10 Renewable Energy Projects." http://Paper.people.com.cn/rmrb/html/2009-07/09/content_292258.htm. Published on July 09, 2009. Retrieved on June 7, 2010.
- People's Daily Online, 2010. "Three Gorges Dam Forces Relocations of 300,000 More." <http://English.Peopledaily.com.cn/90001/90776/90882/6875339.html>. Published on January 21, 2010. Retrieved on June 7, 2010.
- Phillips, J.M., 1998. Effects of Realistic Job Previews on Multiple Organizational outcomes: a Meta Analysis. *Academy of Management Journal* 41, 673–690.
- Pi, Haifeng, Lin, Chang, 2003. Research into the Present State of the Three Gorges' Resettlement and Some Thoughts (In Chinese). *Journal of China Three Gorges University (Humanities and Social Sciences)* 25, 19–22.
- Porter, Lyman W., Richard, Steers, 1973. Organizational, work, and personal factors in employee turnover and absenteeism. *Psychological Bulletin* 80, 151–176.
- Porter, M., Haslam, N., 2001. Forced displacement in Yugoslavia: a meta-analysis of psychological consequences and their moderators. *Journal of Traumatic Stress* 14, 817–834.
- Qi, Lin, 2002. Three gorges migrants: ten years struggle, brilliant achievements (in Chinese). *China Three Gorges Construction* 2002 (10), 8–9.
- Qi, Ren, 1998. Is developmental resettlement possible? In: Dai, Q. (Ed.), *The River Dragon Has Come*. M.E. Sharpe, Armonk, NY, pp. 50–62.
- Radloff, Lenore S., 1977. The CES-D scale: a self-report depression scale for research in the general population. *Applied Psychological Measurement* 1, 385–401.
- Reynolds, John R., Baird, Charlie L., 2010. Is there a downside to shooting for stars? Unrealized educational expectations and symptoms of depression. *American Sociological Review* 75, 151–172.
- Runciman, W.G., 1966. *Relative Deprivation and Social Justice*. University of California Press, Berkeley, CA.
- Scudder, Thayer, Elizabeth, Colson, 1982. From welfare to development: a conceptual framework for the analysis of dislocated people. In: Art, Hansen, Anthony, Oliver-Smith (Eds.), *Involuntary Migration and Resettlement*. Westview Press, Boulder, pp. 267–287.
- Scudder, Thayer, 2009. Resettlement theory and the kariba case: an anthropology of resettlement. In: Anthony, Oliver-Smith, Fe Santa, N.M. (Eds.), *Development & Dispossession*. School for Advanced Research Press, pp. 25–48.
- State Council, 2001. The regulation on Changjiang Three Gorges Project resettlement. Decree of the State Council of PRC 299, 1.
- State Council Gorges Project Construction Committee Executive Office (SCGPCCEO), 2009. The Three Gorges Projects has Relocated 1.27 million people, Resettlement Task is Basically Completed (in Chinese). Available from: <http://www.3g.gov.cn/xxxq.ycs?GUID=3114>. Retrieved on June 8, 2010.
- State Council South-To-North Water Diversion Office (SCSTNWDO), 2009. Relocation Report. Available from: <http://www.nsb.gov.cn/zx/zj/2009wzl/zdym.htm>. Retrieved on June 12, 2010.
- Su, Hong, Xu, Xiaoling, 2005. The strategies for social adaptation adopted by the three gorges migrants (In Chinese). *Ideological Line* 31, 60–65.
- Tanner, L., 2005. Broken Promises and Loss of Trust: The Corruption Stemming from the Use of the Development Resettlement Policy at the Three Gorges Dam Site. *Contemporary Topics in Forced Migration, Working Paper 3*. Forced Migration Laboratory, Center for Comparative Immigration Studies, University of California, San Diego.

- Tao, Jinlian, 1994. *One Hundred and Forty Questions about the Three Gorges Project* (Chinese). Water Resources and Hydroelectric Power Press, Beijing.
- Taris, Toon W., Feij, Jan A., Capel, Sandra, 2006. Great Expectations—and what comes of it: the effects of unmet expectations on work motivation and outcomes among newcomers. *International Journal of Selection and Assessment* 14, 256–268.
- Taylor, Shelley E., 1989. *Positive illusions: creative self-deception and the healthy mind*. Basic Books, NY.
- Turner, R. Jay, Lloyd, Donald A., 1999. The stress process and the social distribution of depression. *Journal of Health and Social Behavior* 40, 374–404.
- Vega, William A., Rumbaut, Ruben G., 1991. Ethnic minorities and mental health. *Annual Review of Sociology* 17, 351–383.
- Walker, Iain, Mann, Leon, 1987. Unemployment, relative deprivation, and social protest. *Personality and Social Psychology Bulletin* 13, 275–283.
- Walker, Iain, Pettigrew, Thomas F., 1984. Relative deprivation theory: an overview and conceptual critique. *British Journal of Social Psychology* 23, 301–310.
- Wang, Jiazhu, 2002. Three Gorges Project: the largest water conservancy project in the world. *Public Administration and Development* 22, 369–375.
- Wang, Kefu, Zhou, Yichuan, 2001. Difficulties and solutions of out-of-province resettlement of the three gorges Resettlers (In Chinese). *Macro Management* 2001 (5), 20–22.
- Wanous, J.P., Poland, T.D., Premack, S.L., Davis, K.S., 1992. The effects of met expectations on newcomer attitudes and behaviors: a review and meta analysis. *Journal of Applied Psychology* 77, 288–297.
- Webber, Michael, McDonald, Brooke, 2004. Involuntary resettlement, production and income: evidence from Xiaolangdi, PRC. *World Development* 32, 673–690.
- Wei, Yi., 1999. Major problems and hidden troubles in relocation of the Three Gorges Project: focus on Yunyang County, Chongqing City. *Strategy and Management* 2, 11–22. in Chinese.
- Weitz, J., 1956. Job Expectancy and Survival. *Journal of Applied Psychology* 40, 245–247.
- Weng, Lida, 1999. Environmental Monitoring and Its Management of the Three Gorges Project. Paper presented at The Third Annual Seminar on Environmental Issues in China. Wuhan and Nanjing.
- Wheaton, Blair, 1994. Sampling the Stress Universe. In: Avison, W.R., Gotlib, I.H. (Eds.), *Stress and Mental Health: Contemporary Issues and Prospects for the Future*. Plenum Press, New York, pp. 77–114.
- World Bank, 2000. *Involuntary Resettlement: The Large Dam Experience*. Precis 194.
- Wu, Min, 1998. Resettlement problems of the three gorges dam: a field report. A Joint Report by International Rivers Network and Human Rights in China. Available from: <<http://www.igc.apc.org/hric/reports/3gorges.html>>.
- Xi, J., Hwang, S.-S., Feng, X., Qiao, X., Cao, Y., 2007. Perceived costs and benefits of the Three Gorges Project. *Sociological Perspectives* 50, 323–337.
- Xi, Juan, Feng, Xiaotian, 2001. Post-migration adaptation of the three gorges migrants (in Chinese). *Statistics and Policy* 134, 20–24.
- Yie, Jiaguo, Lei, Hong, 2000. Post-migration economic adjustment of the three gorges migrants (in Chinese). *Chinese Population Science* 6, 58–64.
- Xiong, Jianli, 2001. The town relocation of three gorges area and the employment problem of town migration (In Chinese). *Regional Economy* 2001 (1), 75–80.
- Ying, Xing, 2001. *The Story of Great Rive Resettlers' Appealing*. Sanlian, Beijing, China (in Chinese).
- Youngberg, C.F. 1963. *An Experimental Study of Job Satisfaction and Turnover in Relation to Job Expectancies and Self Expectations*. Unpublished doctoral dissertation, New York University.
- Zhang, Jintao, Li, Xiaoming, Fang, Xiaoyi, Xiong, Qing, 2009. Discrimination experience and quality of life among rural-to-urban migrants in china: the mediation effect of expectation-reality discrepancy. *Quality Life Research* 18, 291–300.
- Zhu, Nong (Ed.), 1996. *A Study of Three Gorges Project-Induced Population Relocation and Development in Reservoir Area*. Wuhan University Press, Wuhan, China.
- Zuo, B., 1997. *Study on Social Psychology of Migrants in the Three Gorges Reservoir Area*. Unpublished Research Report, Wuhan China.