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Abstract

Although international students annually contribute billions of dollars to the US economy, meaningful intercultural interaction between international students, peers, and faculty is often missing at US host campuses. Feelings of isolation, loneliness, and alienation are pervasive among international students at US campuses; these feelings can negatively impact students' ability to engage in academic and social activities. This study is designed to explore how Chinese doctoral students socialize into a US doctoral program and how they perceive their socialization experiences. Using qualitative methods, we highlight student experiences and isolate areas of misalignment in the educational process.

Keywords

international students, graduate education, socialization, professional development, Chinese doctoral students

CHINESE DOCTORAL STUDENT SOCIALIZATION IN THE UNITED STATES: A QUALITATIVE STUDY

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Introduction

Internationalization in higher education is a continuing trend in 21st century (Altbach & Knight, 2007). Among various rationales, the motivation to recruit more international students is typically related to “income generation for cash-strapped higher education institutes,” instead of “a process for the education of planetary citizens” (Haigh, 2008, p. 427). Although international students annually contribute billions of dollars to the US economy (Open Doors Data, 2014), meaningful intercultural interaction between international students, peers, and faculty is often missing at host campuses (Kashyap, 2011; Tian & Lowe 2009).

Feelings of isolation, loneliness, and alienation are pervasive among international students at US campuses; these feelings can negatively impact students’ ability to engage in academic and social activities (Erichsen & Bollinger, 2011). Extensive research has demonstrated that a majority of Chinese international students feel isolated and lonely at their host college (Arthur, 1997; Jacob & Greggo, 2001; Khawaja & Stallman, 2011; Sawir, Marginson, Deumert, Nyland, & Ramia, 2008; Tian & Lowe 2009). In one study, 65% of the 200 international student participants reported loneliness at their host campus (Sawir et al., 2008). In another study, 65% of the 114 international student participants said that they had difficulty making friends with their US peers (Sherry, Thomas, & Chui, 2010).

Chinese students represent the single largest source of foreign-born doctorate-level earners in science and engineering (S&E) in the US (National Science Board, 2006). Between 1989 and 2009, most foreign S&E doctorate recipients in the U.S. were from Asia, with China as the biggest contributor (Science and Engineering Indicators, 2012). Moreover, Chinese students are the second largest foreign nationality in US graduate schools (Kellogg, 2010). Although graduate school applications from international students overall increased by 9% in 2012, applicants from China increased 18% and experienced a 20% increase in the rate of

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admission (see Table 1 and 2). This year, 2012, marked the seventh consecutive year that both the applicant and admission rates for Chinese applicants showed a double-digit increase (Council of Graduate Schools, 2013). In addition, doctoral students represent the largest share of the whole Chinese student population in the US (Science and Engineering Indicators, 2012).

Table 1. Percent increase in international graduate applications, 2006-2012.

	2006	2007	2008	2009	2010	2011	2012
International	12	9	6	4	9	11	9
China	19	19	11	16	20	21	18

Source: Council of Graduate Schools (CGS) International Graduate Admissions Survey (2013)

Table 2. Percent increase in international graduate admission, 2006-2012.

	2006	2007	2008	2009	2010	2011	2012
International	14	8	3	-1	3	9	9
China	24	24	15	17	15	21	20

Source: Council of Graduate Schools (CGS) International Graduate Admissions Survey (2013)

University research and doctoral education produce original scholarship (Council of Graduate Schools, 2005; Gardner, 2007) and contribute to knowledge creation and diffusion (Weidman, Twale, & Stein, 2001). This study is designed to explore how Chinese doctoral students socialize into a US doctoral program and ultimately into the scholarly culture of the academy. Using qualitative methods, we highlight Chinese doctoral student experiences. Given the increasing numbers of Chinese doctoral students in the US, a deeper understanding of their experiences can contribute to an enhanced educational environment.

Chinese Student Learning Experiences in the United States

Since 2009, China has been the top sending country for international students to the United States. In the 2012-2013 academic year, the US recruited a total of 235,597 Chinese students, equaling a 21.4% increase over the previous year and 28.7% of the entire international student population. Many Chinese students perceived isolation and loneliness, which they attributed to the difference between Confucian and Anglo culture (Ni, 2005; Shi, 2011; Sun & Chen, 1999; Turner, 2006; Yan & Berliner, 2013). The feeling as a foreigner and the otherness limited the perceived ability of Chinese students to engage in academic and social activities (Holmes, 2005; Shi, 2011; Tian & Lowe, 2009; Wang, 2004; Zhao, Kuh, & Carini, 2005). A variety of research also suggested that faculty and administrators in strategic educational positions were not sufficiently and accurately aware of the perceptions and dissatisfaction of Chinese students with regards to their educational experience in the US (Cooper, 2009; Hsieh, 2007; Jiang, 2010; Yan & Berliner, 2013).

Both Chinese students and the faculty and administrators closely working with them tended to oversimplify the adaptive challenges most Chinese students confront in the US (Jiang, 2010; Shi, 2011). For example, Shi (2011) found that many Chinese graduate students perceived that once they were physically situated in the US they would get to know the local people and adapt to the local culture. Conversely, another study noted that many host campus personnel did not consider themselves or the institution responsible for the transition and adaptation of international students (Sawir et al. 2008). One study recorded that the perception of faculty members included the assumption that most international graduate students would

enter research positions for which they would be prepared or many of them would eventually return to their native countries where norms and expectations vary considerably from those in the US (Weidman, Twale, & Stein, 2001).

Although these findings do not claim existence in US higher education, the combination of these assumptions and the lucrative practice of international student enrollment described in the previous section highlights the importance of research on Chinese students' learning experiences. Students who are not served well, or are exploited, have a negative impact on the larger learning environment for all students. According to Altbach and Teichler (2001), academic exploitation can occur any time when (1) there is insufficient commitment on the part of an educational institution to equal opportunity, (2) foreign students receive low quality education or are financially exploited, and (3) an educational institution regards internationalization as little more than a chance to sell products to foreigners. If Chinese doctoral students are receiving an unequal experience compared to their domestic peers, the damages accrued move beyond the individual, to the larger educational environment and the purpose of higher education.

Various studies indicate that Chinese students place different cultural values on learning strategy and communication style than their US peers (Ho & Ho, 2008; Hsieh, 2007; Khawaja & Stallman, 2011; Shi, 2011). For example, ethnic Chinese students favor a dialectic education system, where "there is fragmented, linear, competition-oriented, authority-centered, and in which there is little collaboration, creativity, or communication among students" (Holmes, 2005, p. 291). Lecturing is the main teaching method in dialectic instruction (Ho & Ho, 2008; Turner, 2006). However, Western colleges use inquiry-based dialogic teaching that requires interactive and cooperative communication strategies, critical thinking skills, and practical application (Holmes, 2005; Turner, 2006).

The dialogic approach is characterized by an environment where students are encouraged to ask questions, challenge the instructors and peers, ask for elaboration, and even express original opinions. Some studies have found that many Chinese students are more comfortable with accepting the authority of professors and book materials; they tend to feel less comfortable questioning authority and thinking critically (Tian & Lowe 2009; Turner, 2006). Moreover, many students with a Confucius background tend to value the maintenance of harmony in class, which generates a reluctance to express conflicting opinions. In contrast, according to Shi (2011), US faculty tend to favor assertive students, expect students to express creative thinking skills, value individual contributions to class discussions, and encourage public debate. Chinese graduate students are prepared differently in their home culture, often leaving them underprepared to enter host institutions. These different cultural values in learning strategies and communication styles are likely to disadvantage Chinese students in the dialogic classroom (Holmes, 2005; Robertson, Line, Jones, & Thomas, 2000; Shi, 2011).

In addition, without adequate preparation for the transition, the dominant language and culture can negatively influence the learning experience of Chinese students (Holmes 2005; Kashyap, 2011; Robertson, Line, Jones, & Thomas, 2000; Shi, 2011). In a phenomenological qualitative study, Kashyap (2010) conducted thirty in-depth interviews with ten participants at a private US university. Kashyap (2010; 2011) found that although international students were visible on campus, their feelings of invisibility were connected to the host campus's lack of attention to transitional issues. For example, although international students tend to differ in appearance, accent, culture, values, and behavior than their US peers, the campus community often acts as though the developmental needs of both groups are the same. Due to cultural reasons, ethnic Chinese students often do not feel comfortable with the Western dialogic teaching and communication style (Holmes, 2005; Hsieh, 2007; Turner, 2006).

According to Holmes (2005), Hsieh (2007) and Turner (2006), difficulties with English proficiency exacerbated the condition and led to Chinese students' inactiveness in classroom participation. Failing to understand the topics discussed in class due to unfamiliarity with the local academic cultural expectations made Chinese graduate students feel marginalized (Tian & Lowe, 2009). After investigating and observing thirteen Chinese graduate students for five months, Shi (2011) found that the students highly aspired to succeed at the host university; however, they tended to be quiet and developed negative self-images after several failed attempts to participate in class activities. Reluctance and inactiveness in class participation may lead their professors to doubt their performance and motivation (Tian & Lowe 2009). Shi (2011) concluded that "the unequal symbolic power of communicative skills and cultural competence" labeled Chinese graduate students as incompetent compared to their US peers (p. 576). Shi (2011) further explained, "Chinese and Americans may hold very divergent assumptions about how people should present themselves in interaction" (p. 577). These cultural differences can lead to misunderstanding, feelings of inadequacy, and ultimately, may put the academic success of intercultural newcomers at risk.

Doctoral Student Socialization

The literature on doctoral student socialization highlights the process of incorporating students into the threefold mission of the academy: teaching, service, and research (Gardner & Mendoza, 2010). Although the broader international student experience is important to understand, the process of earning a terminal degree is a unique component of higher education. Furthermore, the influx of Chinese doctoral students into the US provides reason for a deeper investigation of the socialization experience. A central component of socialization is the level of involvement a student has in the academic program, which often occurs through relationships with advisors, faculty, and students shapes the socialization program (Golde, 1998; Girves & Wemmerus, 1988). Involvement is a function of financial support, students' perceptions of their relationship with faculty, the number of faculty who interact with each student, and assistantships, all of which promote faculty-student relationships and socialization among doctoral students (Girves & Wemmerus, 1988). There are three tasks to be accomplished during a socialization process: (a) intellectual mastery, (b) learning the realities of being a graduate student, and (c) integration into the department (Golde, 1998, 2000).

According to Tierney and Rhoads (1993), doctoral studies represent an anticipatory socialization to the academic profession and convey the principles transferred to the next cohort of academics. Doctoral students learn the academic culture according to their academic discipline through a socialization process. Tierney and Rhoads (1993) defined organizational socialization as a "ritualized process that involves the transmission of culture" (p. 21) in two stages: anticipatory and organizational. Anticipatory socialization occurs during doctoral studies, where students learn attitudes, actions, and the principles of the faculty in their field. During anticipatory socialization, "young scholars work with professors, [and] they observe and internalize the norms of behavior for research as well as supporting mechanisms such as peer review and academic freedom" (Anderson & Seashore-Louis, 1991, p. 63).

Girves and Wemmerus (1988) demonstrated that the relationship between the advisor and student is critical during academic socialization. Connections between the student and advisor appear to be more critical than relationships with peers, even though other students are a key resource of the implicit knowledge that must be acquired to successfully navigate a department's proclivities. Although socialization includes the interactions between students, peer cohorts, and faculty, of these groups, faculty are influential agents that guide student socialization (Weidman et al., 2001). Faculty mentoring often leads to presenting a paper at a

conference, publication, research productivity, rate of progress in doctoral programs, degree completion, and time to degree (Millett & Nettle, 2010; Nettles & Millett, 2006). The department and faculty are the locus of the primary socialization activities (Winkle-Wagner, Johnson, Morelon-Quainoo & Santiago, 2010).

Informed by Weidman et al.'s (2001) definition of socialization, our study defines Chinese doctoral student socialization as a developmental process of building professional identity through the attainment of professional knowledge and skills and the adoption of the value system and norms in academia. Weidman et al. (2001) advocated that the core of doctoral student socialization is social interaction, and identified four stages in the process: anticipatory, formal, informal, and personal. The four stages are transferable and the lines between each stage are flexible. The anticipatory stage revolves around stereotypes and preconceived ideas as core elements of understanding. As the novices learn new roles, procedures, and the required agendas, the information they glean is largely general. During the formal stage, students maintain idealized role expectations, receive formal instruction, determine degree of fitness, observe and imitate expectations through role taking.

Although they are on their way to becoming veterans, novices “still need concrete information on normative standards, rewards, and sanctions” (Weidman, et al., 2001, p. 13). During the informal stage, students achieve adept communication skills and learn informal role expectations. In addition to the help received from faculty, students tend to develop their own peer culture and social and emotional support system. Finally, during the personal stage, students form a professional identity and reconcile the conflicts between their previous self-image and their new professional image. Higher expectations of themselves and from the faculty promote development into the scholarly role. Students focus on research interests and specialty areas, and become more involved with professional issues. At this point, students assess their career marketability, degree of competitiveness, and the aggressiveness needed to succeed in the professional world beyond graduation. Evolution through these stages is a theoretical identifier of achieving socialization into the academy.

Knowledge acquisition, investment, and involvement are the core elements for graduate student identification with and commitment to a professional role (Weidman et al., 2001). According to Weidman et al. (2001), involvement is “participation in some aspect of the professional role or in preparation for it” (Weidman et al., 2001, p. 18). In a study with 10 participants, Gardner and Barnes (2007) found that doctoral student involvement in a professional association or organization positively shapes the development of a professional identity. For example, both local and national involvement in professional conferences can lead to graduate student socialization for the profession.

Doctoral students exhibit different cognitive and affective knowledge according to their degree of immersion and involvement in the program (Gardner, Hayes, & Neider, 2007). Gardner, Hayes, and Neider (2007) found that cognitive learning developed mostly at earlier stages and affective learning occurred at advanced stages. Students in earlier stages pay more attention to concrete knowledge acquisition, whereas advanced students and faculty emphasize critical thinking, synthesis capability, and communication skills with the audience.

As graduate students transition between developmental stages, relationships with socializing agents also change. Peers and faculty are the primary socializing agents for doctoral students (Baker & Lattuca, 2010); in the early stages of development, students adjust and determine their degree of fitness based on the observation and imitation of peer behaviors (Weidman et al., 2001). Although peer support is still important in the advanced stages of development, individual guidance from faculty and faculty advisors is particularly influential

(Baker & Pifer, 2011). This shift in relationships reflects the needs, level of involvement, and commitment at different phases.

Although Weidman et al.'s (2001) developmental stages chronicle how student interactions with socializing agents promote professional development, the theory does not account for the influence of various cultures in doctoral student socialization (Gardner, 2007; Gardner & Barners, 2007; Sallee, 2011). Gardner (2008a) conducted a study on the socialization of underrepresented doctoral students, including women, students with children, older students, students of color, part-time students, and other nontraditional students. Gardner's results demonstrated asymmetry in the educational experience.

According to Gardner (2008a), graduate education is dominated by white-male culture and both culturally and sexually biased. Dominant cultures require and expect underrepresented participants to fit a mold. Gardner (2008a, p.123) noted:

In this way, the process of socialization generally acts upon individuals uniformly, not allowing for many individual differences. Indeed, when individual traits or characteristics are present that are not necessarily the norm, the process of socialization may not be as successful.

In addition, Gardner (2008a) discussed the inequity in the socialization process in academe for those who do not fit the majority profile. Socialization in academe is neither color-blind nor gender-blind. For the students who do not fit the traditional mold of graduate education, the "socialization experience is not entirely normative due to difference in their underrepresented status" (Gardner 2008a, p. 128). Further examination of the socialization of ethnic groups, especially underrepresented students and international students, is important because their experiences are different than those in the majority (Gardner, 2007, 2008; Sallee, 2011; Weidman et al., 2001).

Although doctoral students are not always effectively socialized to academic and professional careers (Austin, 2009; Bieber & Worley, 2006), international graduate students may even be less prepared than their research assistant peers (Weidman et al., 2001). Several researchers (Eley, Wellington, Pitts, & Biggs, 2012; Weidman et al., 2001) have noted that some faculty members find it difficult to deal with cultural differences in interactions and instead focus on academic matters rather than on other aspects of professional socialization. As a result, some international students must rely more exclusively on their peers for support, encouragement, and for assistance with problems of adapting to US academic life and culture (Weidman et al., 2001). Moreover, "by being a newcomer to a strange country and experiencing cultural differences, all of the negative experiences may cause a more serious sense of dislocation and isolation than might happen to a native graduate student" (Eley, Wellington, Pitts, & Biggs, 2012; Ku, Lahman, Yeh, & Cheng, 2008, p. 376). This warrants the value of a close investigation of international doctoral students' learning experiences.

Austin and McDaniels (2006) summarized five broad concerns pertaining to doctoral education in the US context. The first concern refers to a lack of systematic and developmentally organized preparation experiences. Although doctoral students observe and learn from their faculty, they often perceive mixed messages concerning the priorities to which they should direct their attention. Learning experiences about teaching and research "are often not organized in a way that plans for gradual development of ability and skills" (Austin, 2009, p. 174). Second, students receive unclear expectations and implicit feedback from professors about their development (Stein & Weidman, 1989). Ambiguity is more harmful to advanced students than entry-level students (Gardner, 2008b). Third, graduate education provides

limited explicit attention to helping students understand the nature of academic careers. Doctoral students need their faculty and departments to inform them of expectations, check on their progress, and assist them through the structures and challenges of graduate school. Graduate school is often “anything but leaving the student to suddenly become independent, self-directed, and self-informed. Unfortunately, not all students are aware of this transition that will be required and this may leave them feeling lost” (Gardner, 2007, p. 738). Fourth, student relationships with faculty advisors are not always as close as some need or expect. Underrepresented groups tend to desire a greater sense of community (Lovitts, 2004). Last, graduate students report little opportunity for guided reflection to consider the abilities and skills needed for an academic career and assess their progress toward developing those qualities and talents.

The intersection of the international student experience and doctoral student socialization is the setting for this study. Our objective is to explore the experience of Chinese doctoral students’ socialization with 26 participants at four US public universities. A deeper understanding of how Chinese doctoral students perceived their individual experiences of the socialization as well as how they perceive their peers can be informative for the development of learning environments that are including increased numbers of international students. The literature on international learning experiences highlights salient challenges and barriers confronted by Chinese students. The doctoral student socialization literature includes a review of the necessary components to develop a professional identity. We used these broad areas in the literature to guide the research design, develop interview questions, and inform our analysis of the topic, the data, the assumptions, and implications.

The guiding questions for this study are:

1. How do Chinese doctoral students perceive the academic socialization processes at a US university?
2. What barriers do Chinese doctoral students perceive and how do they overcome the barriers?

Methods

Explorations of the guiding questions lead to 26 interviews with Chinese doctoral students at four different universities in the US. The experience of being a Chinese doctoral student was the primary qualification for the study in order to analyze their perceptions across a broad number of disciplines, institutional type, and background. The variance and similarity in their responses yielded a body of findings that provides in depth comprehension around the doctoral student experience for Chinese nationals studying in the US.

Research Sites and Participants

The participants were doctoral students at four different universities. University A has a history of over 100 years as a land-grant university and the flagship campus of a university system. It is the largest public research university in its state and has a diverse student population with international students from over 100 countries. University B has been in existence for almost 150 years, and is a land-grant that is ranked among the top of public universities in the US. This university actively participates in many areas of global education, including a high international student enrollment, a popular study abroad program, around 1/3 of the faculty/staff engaged in international research and teaching, 280 partnerships with international institutions, and 25 internationally focused centers, institutes, and offices.

Table 3. Participants' Demographics

ID	Sex	Visa	Year	Discipline	Status	University
F1	Female	F1	1	Higher Education	Doctoral Student	A
F2	Female	F1	1	East Asian Languages and Literatures	Doctoral Student	A
F3	Female	J1	1	Philosophy	Exchange Scholar	A
F4	Female	F1	2	Educational Technology	Doctoral Student	A
F5	Female	F1	2	Educational Psychology	Doctoral Student	A
F6	Female	F1	2	Educational Psychology	Doctoral Student	A
F7	Female	F1	3	Communication and Technology Science	Doctoral Student	A
F8	Female	F1	4	East Asian Languages and Literatures	Doctoral Student	A
F9	Female	F1	4	Theatre and Dance	Doctoral Student	A
F10	Female	F1	7	Linguistics	Doctoral Student	A
M1	Male	J1	1	Philosophy	Exchange Scholar	A
M2	Male	J1	1	Pharmaceutical Sciences	Exchange Scholar	D
M3	Male	F1	1	Communication Engineering	Doctoral Student	A
M4	Male	J1	2	Environmental Engineering	Post-doc	A
M5	Male	J1	2	Educational Administration	Exchange Scholar	B
M6	Male	J1	2	Higher Education	Exchange Scholar	B
M7	Male	F1	2	Computer Science	Doctoral Student	A
M8	Male	F1	2	Electrical Engineering	Doctoral Student	A
M9	Male	F1	3	Educational leadership	Doctoral Student	C
M10	Male	F1	4	Theatre and Dance	Doctoral Student	A
M11	Male	F1	5	Economics	Doctoral Student	A
M12	Male	F1	5	Geography	Doctoral Student	A
M13	Male	F1	6	Meteorology	Doctoral Student	A
M14	Male	F1	7	Economics	Doctoral Student	A
M15	Male	J1+F1	5	Microbiology	Doctoral Student	A
M16	Male	F1	Graduated 3 years	Computer Science	Technician	A

In 2013, more than 7,000 international students were enrolled and Chinese students comprised over 60 per cent of it. University C has a long history of more than 150 years. It is a land-grant institution and the state's most comprehensive university. It is the flagship campus of a university system that produces sixty-five percent of all doctoral degrees at the state's public universities. Historically, it has enrolled international students from over 120 countries. In fall 2013, it enrolled around 2,000 international students (6.4 percent the student population). Chinese students constituted over half of the whole international student population. Campus D is a growing university of about 4,000 students. It offers a wide range of liberal arts and professional programs, as well as a number of selected graduate programs. It is a small branch of a state public university system and offers four doctoral degrees.

The participants were recruited through various methods of chain referral sampling and through list serves for Chinese student organizations. After initial interviews, chain referrals

developed quickly and lead to connections with other doctoral students. A total of 26 Chinese doctoral students were interviewed in Chinese for an average of 80 minutes each using a semi-structured line of questioning to allow for the participant to focus on the most important aspects of their experience (see Appendix for the Interview Protocol). Interviews were conducted in Mandarin Chinese and then transcribed verbatim and translated into English. The demographics of the students included a diversity of disciplines, year in school, gender, and visa types to address the diverse experiences of Chinese doctoral students (see in Table 3).

Data Analysis and Validity

The transcripts of the interviews were analyzed comparatively and iteratively, meaning that we constantly cycled back and forth between data collection and analysis (Creswell, 2003). The analytical progression was both deductive and inductive. The deductive component of the data analysis was rooted in the theoretical assumption that Chinese doctoral students have a distinct perspective and experience during their academic socialization. Key indicators from socialization theories (primary Weidman et al., 2001) were used to assess the various stages of socialization reflected in the student experience. Data analysis was also inductive, providing room for unanticipated findings that could be both confusing and contradictory. The resulting themes and categories were compared with the literature and theories that we used to frame the deductive analysis. Some of the themes that emerged under the larger concept of socialization included issues around communication, culture, and connection with faculty and peers.

In an effort to ensure the validity of the study, interview participants were given the opportunity to review transcripts and follow up with any additional comments. In addition, the diversity of disciplines, institutions, and experiences helped to triangulate and offer various perspectives on the Chinese doctoral student experience in the US. The theoretical components of socialization and other literature about international students shaped our presuppositions about what we expected to find. Consequently, a key validation strategy we used was the search for discrepant responses or negative cases (Maxwell 2013). Finding responses and themes running counter to our anticipations represent an important component of trustworthiness in qualitative research (Maxwell 2013). Lastly, in the findings we present lengthy quotations from the participants to enhance the degree to which their words and perceptions convey the in-depth nature of their experience as opposed to exclusively presenting our interpretations.

Findings

Guided by Weidman, Twale and Stein's (2001) socialization framework, our analysis focused on (1) how individual backgrounds and predispositions interacted with student university experiences, (2) the development of student identity and commitments, (3) the influence of networks, and (4) the role of professional communities. Four categories emerged from the findings: (1) communication, (2) peer network, (3) faculty-student connection, and (4) professional development. Within these categories, our analysis demonstrated that the different culture and training models between China and the US had an impact on Chinese doctoral students' socialization experiences.

Communication

The challenges reported by students in the study highlight various complications of the socialization and adaptation process. Students in the study reported a voluntarily withdrawal from many social and academic activities. Issues including language and classroom norms played either direct or indirect roles in a delayed socialization process.

Difference and Distance in English Language Usage

Seventeen respondents directly mentioned that using English as a second language learner in academia was challenging and had negative effects on their learning experiences. The most common experiences related to the language barrier included lower levels of participation or withdrawal from academic and social activities, longer hours and more days invested in studying, and difficulty in correctly or precisely picking appropriate words in academic conversations and writing. Frequently, our respondents connected these experiences with feelings of frustration, exclusion, and otherness, which lead to a perception of being disadvantaged in the scholarly setting. The impact of language barriers included incomplete understanding of discussion content, miscommunication between students and their peers and faculty, and the fear of asking questions in class or advising sessions.

Language barriers generated a perception in the students we interviewed that they cannot connect deeply in academic settings. For example, a first year in pharmaceutical sciences, said that “good scientists do not want to talk to you” because “English is not our mother tongue. It blocks quality communication” (M2). Language barriers combined with culturally laden academic settings appeared to generate a higher level of fear and inadequacy in some students. For example, one higher achieving student reflected:

My department once invited a famous scholar. She came to talk about her new book. I took a class from her so I was familiar with her book ... I didn't have much meaningful interaction [with her] ... She is famous. I am a novice. When you interact with her, the best thing you can say is I am interested in your research. I didn't know how to ask and she didn't know how to respond ... She responded but it was not meaningful. (F4)

Many respondents conveyed similar vignettes that indicated a connection between language barrier and their inclusion into core academic activities. The perception of barriers was often accompanied by the belief that over time the language barrier would go away.

A small number of respondents conveyed a more deterministic perception of the ongoing negative impact of language on academic recognition and opportunities. For example, one fifth year student in economics, sharply pointed out that

Under equal conditions, an American student and an American professor tend to have more collaboration than a Chinese student and an American professor would have—they have more successful communications...It's not because he is more precise in speaking, but because his way of expression is American. Under same conditions, if they [Chinese and American students] are at the same level in intelligence, people tend to approve the American...Under same conditions, it's not so easy for a Chinese to earn honors and respects...This will impact your professional development and academic progress. (M11)

Language barriers were an important aspect of the experience of almost all of the students in the study, and a fundamental aspect in the overall theme of communication, which is not included in socialization theories.

Presentations

Presentations are a widely used method in academic communication in the US, however, about half of our respondents across various disciplines and stages of socialization reported the practice as a challenge or an area that needed improvement. Presentations elicited descriptions like feeling “hard pressed,” “threatened,” and “frustrated.” While confronting the challenge, participants in the study also felt that their domestic peers were able to present their points “comprehensively and clearly.” “We [Chinese students] feel we have clearly explained all the points, but actually no, [we missed] things that should have been mentioned, and we hastily finished the presentation” (F8). Another student recounted his experience,

I had no eye contact with the audience. I finished the whole presentation from the beginning to end in one breath. I didn’t like others to interrupt me because I was still thinking what to do in the next step. I felt a sigh of relief after I ended it. (M13)

Presentations were perceived as a barrier to knowledge comprehension and created a level of anxiety that decreased interest in course content for some of the participants. Language barriers, lack of practice, and unfamiliarity with giving presentations all contributed to the feelings around the barrier. Several students echoed this sentiment stated by a geography student, “In China, it is rare for us to have the opportunity to present” (M12).

Half of the students in the study thought that the systemic difference in Chinese and US education was responsible for the unequal presentation quality. They perceived that domestic students had some common characteristics like good social skills, being able to integrate into a new environment in a short time, and good practical presentation skills. A fifth year in microbiology, highlighted an alternative view of the strengths different cultures provide in education:

We [Chinese students] are good at cramming for exams. But when it comes to in-depth understanding and extension of knowledge, it causes headache. This is quite obvious in presentations. They [American students] can talk as long as thirty minutes or an hour. They can talk a lot even by looking at a picture. Sometimes they lost themselves because they talked too much. (M13)

This sentiment was stated in various ways by participants but the issue of the requirement to present was a salient and recurring theme in the interviews. Although communication is not a component of socialization theories, it is certainly a prerequisite for the kind of relationships that preclude socialization.

Peer Network

Seminal studies on academic socialization have documented that peers play a more tacit role in student development (Girves & Wemmerus 1988). Although peer influence is secondary to that of faculty, the role of peer colleagues was salient to almost all of the participants in the study who described a peer network that was limited to people in their immediate proximity or people with similar backgrounds. In terms of proximity, the networks were based on roommates living on the same floor, sharing a kitchen, or co-workers in the same office or lab. In the work setting participants considered co-workers as part of their network even though interactions did not crossover into personal or social settings. Twenty-one of our participants admitted that their primary and most meaningful networks were limited to Chinese co-nationals.

Four participants described a makeup that their social network as half Chinese and half non-Chinese. Only one participant said that she only connected with two close American friends.

Chinese Co-nationals

The attraction to networking with other Chinese students included a stated desire for “cultural intimacy” and “convenience.” Half of the respondents articulated something similar to the statement, “I am too busy to have extra time and energy to socialize with cultural others” (F4). A second year in educational psychology, commented about her relationships within her Chinese network:

We cook together and share similar background. While cooking, we complain about similar life experience. Some issues Americans won't understand. Our culture helps us to understand each other. Naturally we become friends. (F5)

Busy schedules, different personalities, interests, and communication styles were all described as reasons for missing in-depth understanding and networking with American peers.

Culture was a recurring reference in comments about the lack of meaningful interactions with domestic students. A fourth year in theatre and dance, recalled:

I don't have much communication with my classmates, unless I have to do a project that requires me to work with other students. I go home directly after I finish my part-time jobs...I work about twenty hours a week and I took four courses this semester, but sometimes five or six...I have been studying here for 4 years and I still feel very challenged by communicating with others. I don't like to talk a lot...I tried to change myself and expand my social network, but then I felt exhausted. I tried to encourage myself to attend social activities, standing there, talking to some unknown persons, and thinking hard about possible topics. This made me feel very tired. I asked myself: “what am I doing here?” I felt I wasted my time and was doing some meaningless things. I felt very unhappy. (F9)

The support and help our participants perceived from networking with Chinese co-nationals included some basic aspects of personal life, sharing study abroad problems, trading job information, and sharing access to other pieces of information. Based on the descriptions from participants, the networking with other Chinese students helped to meet basic needs, but did not help students achieve higher levels of academic socialization.

Academic Peers

Many participants did not have much interaction with academic peers. For example, only eleven students mentioned any aspect of academic assistance received from their peers. Interaction with academic peers included being in the same office or lab or having assigned student mentors. If regular meetings were not part of the constructed learning environment, the Chinese students did not describe having a network with academic peers.

Of the 11 students that described a stronger academic peer network, they included increased emotional support and academic advising as some of the benefits. Emotional support included encouragement and empathy for personal hardship, which was described as valuable for survival in this new environment. Academic advising was described as existing in casual

and random conversations with colleagues, like “sparking ideas in discussion” (F10), and helping to “organize thoughts and getting the point before talking with advisor” (M13). Although these conversations aided Chinese students in their immediate context, our respondents generally perceived advising from peers as “not of substantial help in long term professional development” (F8, F10, M13, and M15).

A third year in educational leadership and policy analysis explained several experiences about the peaks and valleys of networking. In summary, he recounted:

I feel the biggest impact of culture is not on knowledge acquisition but in networking. In my beginning first year, I felt it was very challenging to make friends with other research assistants in the same office. They have listened to the same music, watched the same television series, and read the same books since childhood, which were very different from mine. They talked about celebrities and political events that I didn't know. I feel they were not trying to discriminate against me. But we had very different background that it was very hard to communicate. Later on, I started to watch TV and listen to music, and I was able to jump in some conversations. Now I have stayed in this program for three years, we've experienced some similar things, like taking classes, attending events, and presenting at conferences. We have a lot in common. We can talk a lot of things. Last week, I spoke with one colleague for over an hour about her dogs. Anyway, after having common experience, I can talk with them. (M9)

Peer influence and interaction is clearly part of social survival in a context for anyone that is new to a culture. In terms of academic socialization, it appears that networks were important for navigating the student experience, but were not the most salient aspect of advancing to higher levels of understanding the academy. The bond between students and professors appeared to play a much larger role in socialization progress.

Faculty-Student Connection

The connection between program faculty and students is important for academic socialization (Girves & Wemmerus 1988). A dominant theme for participants related to conflicting expectations and reality with regard professional development and responsibility. Cultural difference and training methods emerged again as influential factors in the role of faculty-student connections in socialization.

Proactivity

The burden of proactive responsibility between students and professors is the first dimension of the perceived conflicting expectations that emerged. The culture of US higher education tends to place value on proactive students. For example, in the US, students are expected to seek out help in order to receive guidance and support, and in contrast, the dialectic teaching style in China trains students to be passive learners (Holmes, 2005). The typical passive learning characteristics made it difficult for participants to manage relationships with their professors. The sentiment, “I don't have a habit of talking with professors” was mentioned by over half of the participants. Similarly, more than half of the participants expressed a feeling of hesitance when seeking out help or advice from professors. However, nine of the participants stated mandatory weekly meetings with their advisors were designed to give reports on academic progress.

In response to our question about how often participants talk to professors and how comfortable they feel to ask for help, only three students expressed a high level of comfort reaching out to faculty about their ideas for research and scholarship. Many participants articulated a sentiment similar to this one: “I don’t know how to initiate a conversation with professors. If I don’t really have a problem, what topics can I think of to talk with my professors?” (F5). Typically, participants expected professors to proactively provide guidance and mentoring. One second year in educational psychology, expressed the desire for more interaction:

I know in the U.S. you have to be proactive and talk to your advisor. But I hoped my advisor would be more proactive in guiding my progress. For example, sending me an email and suggesting that I talk to him regularly. If not once a week, at least we should meet once a month. If he did this, I would feel very encouraged. I would know he values me. I would have spent more energy on studying and conducting research. I wish professors could create a peer support system, such as interest groups, inviting PhD students to join and do some academic things together. If professors were proactive in guidance, students would feel more encouraged. Also, professors should invite PhD students to publish papers together. I think professors are too busy with their own stuff. (F6)

Proactivity is a subtle difference in initiating communication, but cultural difference, educational training models, and power dynamics are all shaping the learning environment for Chinese doctoral students in a manner that is different from domestic students. A key component of developing a more functional socialization process would be to align expectations with reality in relation to initiating communication on the important topics of scholarship and professional development.

Independence and Dependence

A salient recurring theme throughout the interviews was a discussion about the differences between professors in China or Chinese professors and their American professors. Professors in China or Chinese professors were perceived as more likely to offer help and give thoughts on future development. In contrast, American professors were perceived as expect students to be independent and identify a suitable direction for their future. For example, the educational psychology student recalled,

Chinese professors in my department suggested that I attend some conferences, but American professors never said any of this to me. If you don’t ask them, they won’t tell you. This may be the difference between the Chinese and the American educational model. Chinese professors will tell you what to do. In the US, I feel studying is a very individual thing; you are supposed to rely on yourself. (F5)

In response to our question regarding faculty’s expectation for students’ career goals, the sentiment, “I don’t think my professors have any expectations on me,” was frequently reflected by many of our participants across all disciplines. For example, sixteen students stated that their faculty had no or unclear expectations or the students conveyed the perception that faculty did not care. Only five were aware that faculty expected them to conduct research in the future. Two sensed that professors here were “very open to students’ career goals” and “respect

student's choice." A first year in East Asian languages and literatures, said, "My professors here have no expectations regarding my future career path, but my advisor in China was quite clear and direct that he expected me to stay in academia after graduation" (F2).

From the common themes in the participants' reflections, we found that students conveyed deep feelings about adapting to professors' role and expectations. Some of the students were acutely aware of the need to transition from an education system that "trains student to be dependent on faculty authority" to another one that "expects student to be very independent." However, not all of the students were able to articulate the challenge, and even the students that did could not convey that awareness translated to adaptation ability. A student in educational technology, showed her anxiety and confusion when confronted by the unanticipated challenge:

I feel I don't know my direction. I don't know what I am doing and why I am doing it. It's like I am walking quick and crazily, only looking down at the road under my feet, not knowing where this road is guiding me. None of the faculty members, my advisor or other professors, check my progress. No professor told me if I am right on track ... I don't know which kind of person this department wants us to be, because nobody has ever checked with us. Nobody comes and tells me which stage I am at and what things I should start to consider. Nobody ever told me anything. (F4)

More seasoned participants noted that, "students have to be independent" and that it is best if prior to arrival Chinese students are "aware of this difference and prepared for it" (F3 and M6).

A fifth year student in economics shared his insights about the education system difference:

Chinese education is exam-centered. Students' excellence is achieved by hours and hours of making efforts and working on exam questions, which failed to train independent thinking. The Chinese training model is in conflict with the traditional Western education system. Our system tends to train *dependent* students. When professors always guide you and give you the solution, you will be dependent on professors ... In China, students graduate with unclear understanding about why. But here, students are confused and unclear about why they can't graduate. (M11)

Issues of independence and dependence are central to the relationship between doctoral students and their faculty advisors who are often central to their scholarly development. Efforts at aligning expectations and reality may be a central task in advancing the socialization process and overcoming barriers that occur in relation to cultural differences. The frequency of interaction between faculty advisors and Chinese doctoral students also played a role in the perception of professional development and socialization, which is explored in the next section.

Professional Development

Generally, the connection between our respondents and their faculty and peers were perceived as substandard, likely due to comparisons from previous experiences in China. Even the eight respondents who had reported support from both peers and faculty perceived that peer advising was "limited" and "supplementary" compared to their perception of faculty advising in professional development. All of the participants, no matter how frequent they had

interacted with professors, perceived or expected faculty as “the key role in offering valuable suggestions and guidance in developing skills,” “guidance through the research field,” “step by step tutoring on how to do research,” and “demystifying the publication procedures.” However, faculty support, in some cases, appeared related to the disciplinary culture. Some fields like engineering appeared to offer more scaffolding guidance and clear expectations. In contrast, some fields like philosophy appeared to offer less or little handholding guidance. It also depended on faculty’s willing to devote much time and energy to train student researchers. This shows how field culture and faculty characteristics affect student learning.

Gardner (2009) noted that conference presentation experience is necessary for successful doctoral student socialization. Participants made an interesting connection between the frequency of interaction with faculty and the richness of academic or social activities available in the department. For example, the students’ conference experience was divided. Thirteen participants who met the advisor weekly or had worked closely with faculty as research assistants all had conference attendance experiences (eleven presented and two attended). Another nine students reported “no frequent interaction with professors” and perceived “very limited” or “no academic or social activities in the department beyond classroom teaching” as well as no conference experience. In response to our question regarding perception of difference in academic progress compared with domestic peers, a student in educational technology, recalled, “I know they [American students] presented at conferences but I haven’t” (F9). Another four students were aware of opportunities, but had not yet found the opportunity.

The students who received a lot of “conference information,” opportunities to “learn research methods,” and “opportunities to publish with faculty” were the same students who benefitted from frequent meetings and were offered more encouragement, motivation, and support. They had real opportunities to involve and invest in professional activities. A second year student in electrical engineering, shared his learning experience,

The weekly meeting is a routine in my team. Every week, we report our progress to our advisor. She then gives feedback to make sure we are in progress and on the right direction. At the beginning and the end of every year, there are proposals dues for several big conferences in this field. She will let us know and urge each member to submit a proposal. I am very sure she expects us to be researchers. She signals this message many times in both formal and informal activities. She sends us emails about upcoming conference information. All the team members understand that she wants us to publish articles in journals. Because she is the chief editor of a journal, she also gives us opportunities to peer-review other people’s articles. Under her push and encouragement, I submitted proposals and papers to conferences and journals. It was very hard in the beginning. But it was a nice experience. Now I have two publications ... My student identity started to switch to a scholarly one after I attended international conferences ... I feel what I am doing has a value in this field. Otherwise, [without the conference attendance experience,] I don’t know what I am doing and what others are doing. (M8)

In contrast, many other students who did not work closely with faculty perceived these professional involvement and investment information and opportunities “very limited.”

Culture difference and different training models also emerged under the theme of professional development as having power in shaping the participants’ interaction, integration,

and learning. All participants confessed that there was little to no specialized support system targeted at international students' needs at departmental and college level, not even to mention those designed for Chinese doctoral students. Faculty advising did not seem "culturally sensitive" or "different from guiding American graduate students." Many participants reported a need for special orientation, but this desire had not been met. A second year student in educational technology articulated a sentiment similar to that of other participants:

There's no workshop or program designed to guide international doctoral students to navigate in the program. This is both a good side and bad side of my department: it never separates students by international students and non-international students. If it had separated us, this means they discriminated. But since they didn't separate the student body this way, there's no such a support program for international students. Nobody would come and tell you what this profession is. Everyone assumes that you should have known, or assumes that you would find your own ways. Nobody cares if you are an international student. They assume you can handle anything, so there's no special program to support international students ... There has never been a workshop to tell us about which conference we should go or where to publish papers. There's nothing mentioned in the orientation about any need to publish. My advisor always said that if you can publish then publish, if you can attend a conference then attend a conference. But she never explained what the meaning of conference attendance and publication is for doctoral students. (F6)

The student remark illustrated many respondents' confusion, frustration and dilemma regarding a successful navigation. The findings from this theme illustrate that regular faculty interaction and attention, in the perception of the students, is directly connected to key steps in professional development and socialization. What seems to be universally missing for all the participants is dedicated attention to navigating the difference in the cultures of the academy.

Discussion

The guiding questions for the study were, (1) How do Chinese doctoral students perceive the academic socialization processes at a US university? and (2) What barriers do Chinese doctoral students perceive and how do they overcome the barriers? Throughout the findings we established that Weidman, Twale, and Stein's (2001) four socialization stages were applicable in categorizing the responses of participants in some areas, but not appropriate for understanding some of the cultural differences outlined by the participants. This discrepancy was related to disciplinary and national culture, which was the weakness of this framework (Gardner, 2007; Gardner & Barners, 2007; Sallee, 2011). The participant perceptions on cultural difference were insightful, and further highlighted how cultural difference influenced communication. Although communication is not a component of socialization theory, the doctoral student perceptions indicate that it might be an important prerequisite for understanding international student socialization. Theories of academic socialization could be more applicable to the international student experience by including communication as a fundamental component that serves as a barrier and a source of anxiety for some students. On an organizational level, this may be an important finding as the inclusiveness of Chinese doctoral students to intellectual community is integral to a healthy practice in internationalizing tertiary campuses.

The characteristics described by Weidman et al. (2001) in the informal and personal stage, such as feeling less student-like and more professional characterize only a minority of the participant descriptions. Within the group of students participating in this study, there is a clear perception of difference and hardship related to doctoral studies. Some scholars have noted that international student population is vulnerable (Eley, Wellington, & Biggs, 2012; Sherry, Thomas, & Chui, 2010; Trice, 2007). In our study, we see this tendency exists among our participants. Although not a key aspect of the theme-based findings related to socialization, participants reported that they had psychological trauma or felt extremely helpless and lonely when they were physically sick or failed to find financial support for a long time. Their stories about loneliness or feeling fragile suggest that these negative psychological feelings may be more intense when they are under a variety pressures (cultural, social, academic, and financial) and fail to find appropriate support. One participant mentioned a suicidal event on campus that happened two months before we conducted the interview. A female Chinese PhD candidate jumped from a residence hall and committed suicide. This event had a big impact on the Chinese student community on campus. The student explained,

Leaving one's familiar culture to earn a degree in another country needs courage. But pursuing doctorate while dealing with loneliness and unfamiliar challenges without family and friend support is even harder [than many may have anticipated] ... When they couldn't handle the challenge and there is not enough support, some may take extreme action and commit suicide, like that young girl. It is a sad story. (M16)

Students with strong support networks tend to exhibit better well-being and capacity to handle stress; students suffering from social, cultural, and academic isolation often attain low academic achievement, feel less confident than peers, and experience issues related to personal security (Sawir et al., 2008). Our findings show that Chinese doctoral students may hold conflicting expectations and confront different socialization problems. When the differences of a heavily recruited minority group (Chinese doctoral students) are ignored, a more latent version of insensitivity or discrimination related to color-blindness emerges—the idea that everyone has equal opportunity, regardless of race or national origin. Inattention to cultural differences left the Chinese doctoral students feeling vulnerable, lost, and confused about their professional development.

Conclusion

Although the participants who chose to participate in our study have valuable perceptions about their experience, it is widely recognized that this is not formally generalizable to all Chinese doctoral students. The depth of their experience is, however, generally useful and a set of context of rich reflections on various aspects of socialization (Flyvbjerg 2011). Given that some students may have a predisposition that increases the desire to participate in a study, we might be missing some students and their experiences that are not predisposed to participate in an exploration of their feelings. An alternative design or a larger recruitment initiative may alleviate the impact of these limitations in future studies.

There is a clear trend and effort to recruit Chinese students to doctoral programs in the US. These concerted recruitment efforts have led to drastic enrollment increases and additional financial stability for US institutions, as international students almost always pay full price. Given the importance of doctoral education as a pinnacle learning experience and key factor in knowledge production, the learning outcomes and socialization of all admitted students is

essential to the health of the entire enterprise. The asymmetry perceived and described by Chinese doctoral students (as compared to domestic students) can be a hindrance to the learning environment. Educational systems serve all students better when all students are being served—regardless of race or national origin.

Many of the successful experiences reported by our participants can be noted and practiced in strategic faculty mentoring practices. Frequent meeting and progress checking with Chinese students was efficient in socializing them with the academic norms in the intellectual community. In the department, the creation of a physical space such as study area where all students can talk and share ideas, create common memories, and develop a sense of support and intimacy can provide additional support and perhaps language improvement. Assigning advanced students as mentor for international doctoral students may soothe the transition. Specialized and periodical orientation designed for Chinese doctoral students or other international doctoral students can be effective in socializing and a remedy for some of the problems and barriers articulated by the participants.

Future studies on the topic of doctoral student socialization for Chinese students, or international students in general, should focus on faculty perceptions of students. Though it may be difficult for faculty to distinguish some of their subconscious perceptions of students, it is essential to understand the faculty perspective to continue to shape the learning environment and socialization process. An exploration of how faculty perceive Chinese students will provide another important component of enhancing the important relationship between advisors and students.

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Appendix

Interview Protocol

1. Brief self-introduction
2. What did you want to get from your doctoral studies for your personal and professional development?
3. What do professors hope you will do after you graduate?
 1. How did you learn about this?
 2. How clear was the expectation?
 3. Is that what you hope you to do?
4. What are the barriers for you to graduate as a doctoral student in the U.S.? How do you manage the barriers?
5. What do you think of your overall progress compared to your American peers?
6. Describe your relationship and connection to:
 1. Faculty members
 2. Peers
 3. student associations
 4. professional associations
7. Has your relationship and connection to these groups changed over time? How?
8. How does the above network support your life as a doctoral student?
9. How does the university support your learning experience as an international student?
10. If you could have a chance to redo your doctoral program, will you do something differently? Why?

Interview Protocol Chinese Translation

1. 请简短的介绍一下你自己
2. 你期望美国的博士教育对你将来的发展能带来什么样的帮助?
3. 你的教授们希望你毕业后做什么?
 1. 你是怎么知道的?
 2. 这个期望明确吗?
 3. 这也是你所期望的吗?
4. 你觉得在美国读博顺利毕业有哪些障碍? 你都是怎样应对或者克服它们的?
5. 跟你的美国同学比, 你觉得你的总体进展怎么样?
6. 我们现在来谈一谈你的社交关系
 1. 你跟你的教授们走得进吗?
 2. 跟同学呢?
 3. 你参加学生组织吗? 在里面活跃吗?
 4. 专业方面的组织呢?
7. 你跟这些任何组织的关系有随着你在这里呆的时间的变化而变化吗? 怎么说呢?
8. 这些社会关系对完成你有什么样的帮助?
9. 学校从哪些途径或者说是怎样通过一些项目来给留学生的学习提供支持和帮助的?
10. 如果你的博士生活有可能重来一次的话, 你会做一些不同的事情吗? 为什么呢?

About the Authors

Wendan Li, is a doctoral student in the Educational Foundations program at the University of Hawaii at Manoa. She is interested in international comparative research on universities and their roles in preparing qualified members for the globalized professional community. She conducts research on the quality of doctoral education in the knowledge society, international graduate students learning experiences in the United States, the quest for world-class status in East Asian tertiary institutes, and the world-class higher education system. Her present research focuses on Chinese doctoral student socialization experiences at American universities. She is an active member of the Association for the Study of Higher Education and the Comparative and International Education Society. She also provides workshops on intercultural communication and learning for international graduate students.

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