The Politics of Titling: The Representation of Countries in CHI Papers

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Abstract

For decades, HCI scholars have studied technological systems and their relationship to particular contexts and user groups. Increasingly, this scholarship is dependent not only on localized contexts, but also the relationship of local contexts to the global stage, drawing on approaches such as ICT4D and cross-cultural design. In this paper, we examine authors' descriptions of study contexts, particularly country information, in paper titles and texts in the *CHI Proceedings* from 2013 to 2017. We found strikingly different patterns of titling between studies of Western and non-Western countries, including whether and how country names are mentioned in titles, and the precision when describing study contexts. Drawing on critical theories, we analyze how the politics of titling at CHI functions to build categories of "normal" and "exotic." We explicate the problems that the current ways of representation bring to knowledge production at CHI, and necessary paths to move forward.

Author Keywords

Literature review; Orientalism; generalizability

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

Generalizability is an important dimension to consider as human-computer interaction (HCI) researchers report their research output in scientific writing. CHI embraces many forms of knowledge, ranging from

universally applicable theories to highly contextual and situated knowledge [9]. Claims of generalizability and representation of study context are important considerations for both authors and anonymous reviewers. Publication at CHI is a socially negotiated process in which authors strive to make sure their manuscripts meet CHI standards, and reviewers use feedback to impact the formation of the final versions (or reject work altogether). From the social constructivist perspective [16,17], CHI can be viewed as an institution with specific procedures and standards to ensure that its publications adhere to its own value systems. From the perspective of speech community [7], as a human aggregate the CHI institution would set and enforce social restraints over the acceptability of speech variations, rendered in CHI papers, one of its most important forms of communication. In this paper, we examine the representation of study contexts in CHI papers as a critical reflection on hidden social values within the CHI community.

We focus on two elements of study context—the name of the country where the study was conducted and the level of disclosure authors provide. In this paper, a country refers to one of the member states or non-member observer states of the United Nations in January 2018. We analyzed how authors represented the countries they studied in a sample of CHI papers published between 2013 and 2017 (n=306), a combination of all the papers whose titles contain country information (e.g., country names and city names) and sample papers from each year's proceeding. Through qualitative coding, statistical test, and linguistic analysis, we found that studies conducted with non-Western populations are significantly more likely to highlight study contexts in titles and

throughout the text. Studies of Western countries are significantly more likely to lack mention of the studied countries not only in titles, but also throughout the text of the papers. Although both studies of Western and non-Western contexts might represent studied countries in titles, the use of country information in the former tends to play a more meaningful role in terms of syntax and semantics. Indeed, we were motivated to undertake this study by an incident in which authors Yubo Kou and Bonnie Nardi were asked during the CHI review process to include a country name in the title of a paper we had submitted. Both authors had regarded the country as incidental to the nature of the study, its findings, and its framing. (The paper was accepted but we were concerned with this request.) We consider this phenomenon of location disclosure a critical issue in the production of HCI knowledge.

Related Work
Systematic analysis of CHI literature
In recent years, HCI researchers have begun to systematically examine the procedures and outcomes of knowledge production in CHI [18]. These meta-analyses have probed community expectations regarding central themes of HCI scholarship such as the nature and purpose of reviewing [14], the use of citations to engage with previous work [19], and the standards and criteria used to determine appropriate sample size [2]. These analyses, albeit with different foci, express concerns over knowledge production norms, indicating a desire to improve the rigor and validity of knowledge accepted at CHI.

Title research
We draw inspiration from the literary research of Gérard Genette, who defines the title of a book as "a

series of linguistic signs which can appear at the head of a text to designate it, to indicate its general content and to appeal to the public aimed at" [6]. According to Genette, the title is an element of the "paratext" which is "a privileged place of pragmatics and a strategy, of an influence on the public, an influence that […] is at the service of a better reception for the text and a more pertinent reading of it" [5]. John Fisher argued that titles work to differentiate one work from the other, and are "names which function as guides to interpretation" [3]. This body of literary research tells us that the title performs a different role from the text of a paper, and plays an important role in informing and orienting readers. The title is indeed a place of "privilege," crucial to readers' understandings.

Titling practices have evolved through time in scientific disciplines such as medical education [21], ecology [4], and psychology [25]. Studies of titles in scientific articles have paid attention to the typical characteristics of a title—whether the title is in a question form, is compound, contains punctuation marks, length, and number of words. These titling patterns are correlated with the scientific articles' number of downloads and citations to varying degrees [13,23,24]. Jacques and Sebire's studies of titles across three medical journals [12] reported that reference to a specific country in the title predicted poor citation. In light of this body of research on the correlation between the titling practices and citation, and Latour and Woolgar's analysis of citation in science as a form of currency which gives credibility to scientists and their work [17], we are motivated to investigate how HCI researchers develop and sustain standards of titling in CHI by adding or excluding country information in their paper titles.

Adopting a critical stance
In investigating these titling practices, we take on a critical perspective, positioning relationships among knowledge-building and countries of origin as value laden. We build on themes from structuralist and post-structuralist critical theory traditions, including articulations of criticality within the CHI community such as humanistic HCI [1] and postcolonial theory [11], which have highlighted the multiple subjectivities that surround knowledge-building and interpretation.

Rather than encountering knowledge outside the Western tradition and canon only as the Other, where developing nations or Eastern thoughts are viewed primarily in contrast to Western thought and civilization, we accept and embrace the notion of multiple situated subjectivities. Conceptually, we draw primarily on theories of *Orientalism* [20], due to our personal interest and experience in negotiating knowledge as the "east meets west." Edward Said developed the concept of Orientalism as "a manner of regularized (or Orientalized) writing, vision, and study, dominated by imperatives, perspectives, and ideological biases ostensibly suited to the Orient" [20]. The "Orient" includes Middle Eastern, Asian, and North African societies [20]. Orientalist scholarship produces, maintains, and reproduces a static view of Oriental culture [20]. Said discusses how Orientalism gradually became the source for the West's patronizing perceptions and depictions of the East. The West developed cultural representations of the Orient as its contrasting image, idea, personality, and experience, representing the Orient as undeveloped, irrational, stagnant, and inferior. Contrasting representations of the West and the Orient have dominated common Western discourses about the cultural, political, and

economic orders in the East. Most pertinent to us, Orientalism is, as Said noted, "a system for citing works and authors" [20].

We see value both in the criticism of such an othering binary, while also suggesting the need to move from a postcolonial framing dominated by "normal v. exotic" to a different framing where each context is defined as a coherent whole that does sit in stereotyped relation to other entities, with some entities the unmarked norm and others "called out" as different. The reviewers asked us to include "China" in our title, but authors are rarely asked to say "in the United States" or "in Europe" in paper titles.

Methods
Data collection
We examined CHI papers having country information such as a country name or a city name in their titles, reviewing the titles of CHI papers published from 2013 to 2017. We used the ACM Digital Library to download a comma-separated value (CSV) file containing all metadata for each year of the *Proceedings*, including author name, paper title, pages, keywords, and year. We used Microsoft Excel to create a spreadsheet to manage the metadata and allow for data collection from each paper. Within the 2486 papers that we saved in the spreadsheet, we identified 49 papers having country information in titles. Within the rest of the papers, we randomly selected about 10% of the papers for each year between 2013 and 2017 (CHI'2013: 392; CHI'2014:465; CHI'2015: 486; CHI'2016: 600; CHI'2017: 600), resulting in a collection of 257 CHI papers. We did not distinguish between papers and notes. The numbers of papers per year were obtained from each year's proceedings' source materials We

combined the two sets into our final dataset containing 306 papers.

Data analysis
For each paper, two researchers individually coded for the following questions: 1) how the research paper represented the studied country; 2) what country the study was conducted in; and 3) what countries were the authors' affiliations in. Through rounds of discussions, the researchers resolved coding disagreements.

For the first question, if the study concerned design critique, critical analysis, theoretical discussion, or system building without user tests, we coded it as "not applicable," because these works do not concern a specific participant population. We identified five distinctive ways that CHI authors represent studied countries within 248 papers (58 "not applicable" papers were removed).

For the second question, if a study did not involve participants, we coded it as "other"; if a study did not mention the country in the body of the paper, we coded it as "missing"; and if a study was conducted across multiple countries, we entered all country names that were present.

For the third question, if the authors' affiliations represented multiple countries, we entered all country names that were present. If the authors did not indicate their countries or only listed their affiliations which represent multinational corporations such as Facebook, we used search engines such as Google to search these author names to locate their countries. While there is no strict definition of "Western world,"

Countries	Authoring	Studied
United States of America	157	53
Canada	33	9
United Kingdom	29	24
Germany	27	7
France	14	4
Denmark	10	3
Sweden	10	2
Australia	9	2
India	7	13
China	7	9
Netherlands	7	4
South Korea	6	3
Japan	6	2
Finland	5	2
Austria	4	2
Bangladesh	3	5
Singapore	3	1
Spain	3	0
New Zealand	2	0
South Africa	1	2
Egypt	1	1
Ireland	1	1
Palestine	1	1
Israel	1	0
Switzerland	1	0
Kenya	0	4
Rwanda	0	2
Argentina	0	1
Bosnia and Herzegovina	0	1
Cuba	0	1
Ghana	0	1
Mexico	0	1
Peru	0	1
Philippines	0	1
Saudi Arabia	0	1
Lesotho	0	1

Table 1. Countries identified in our sample.

we adopted Huntington's categorization of "Western Civilization" [10] to build the binary categories for our analysis. We then treated the ways of representation as an ordinal variable, and the Western/non-Western distinction as a binary variable, and measured their association. We used linguistic analysis to examine titles containing country information.

Results

We found 36 countries identified either as authors' residence or the context of study. Table 1 shows the breakdown of all the countries that appeared in either the first or second questions, ranked by the number of papers where authors were resident. The first column was generated by counting whether a paper has one author from a country. We generate the second column by calculating whether a paper has its participant population from a country. Our sample shows that the top countries that are studied or with resident authors are countries in either North America or Europe including the United States, Canada, the United Kingdom, Germany, and France. Next, we examine the ways of representing countries in CHI papers, the relationship between titling practices and countries studied, as well as the relationship between titling practices between authoring countries.

Five Ways of Representing Studied Countries in CHI
We identified five distinctive ways that CHI authors represented studied countries with varying degrees of explicitness. They are:

1: Highlighting country names in paper titles (n=49). Two examples are "How Technology Supports Family Communication in Rural, Suburban, and Urban Kenya" and "Being Senior and ICT: A Study of Seniors Using ICT in China."

2: Stating studied countries explicitly in paper texts (n=57). Two examples are "at a public elementary school in an urban city in Canada…" and "have lived in the United States for at least five years."

3: Suggesting studied countries implicitly in paper texts (n=43). This is the category where descriptions of studied countries become vague as authors did not announce the names of the studied countries explicitly. However, there were ways that readers could infer where they conducted the research. For example, if authors mentioned that their participants were from a local university, and all authors were from the same university, it was safe to infer that the studied country was the same as their own country. We encountered papers where authors named and thanked their participants in the acknowledgements section, which allowed us to use Google and LinkedIn for geographic location.

4: Not mentioning studied countries anywhere in the papers (n=78). In this category, we found papers that did not provide details about the studied countries at all. For example, we encountered papers that mentioned that authors recruited participants from a local university. However, the authors came from universities located in multiple countries. As a result, it was impossible for readers to infer what "local university" the paper was referring to.

5: Excluding country information in study design (n=21). Papers in this category recruited participants primarily through online surveys or Amazon Mechanical

Ways of representing studied countries	Western countries were studied	Non-Western countries were studied	Total
#1	13	35	48
#2	39	6	45
#3	41	2	43
Total	93	43	136

Table 2. Breakdown of ways of representation and Western/non-Western countries. Note: For this test, we removed papers that studied multiple countries for this test, and those that contain no country information. Therefore, the number of #1 and #2 ways are less than the total count we reported last subsection.

Turk (AMT), but did not specify the nationalities of participants. It is important to note that we also encountered papers that used AMT and controlled or provided information about participants' nationality.

The way of representing studied countries is significantly associated with the studied countries
In this subsection, we examine whether studies of non-Western countries are more likely to be expected to represent their studied countries in explicit, clear ways. We already have two variables for each paper, the ordinal one is the degree of explicitness in the representation of studied countries, and the binary one is whether the studied countries are Western or non-Western. Table 2 shows our data for this question. Our null hypothesis was: The two variables are independent from each other.

A chi-square test rejected this hypothesis (n=136, x-squared = 59.286, df = 2, p-value < 0.00001). The two variables are significantly associated. We then performed a logistic regression over this data, using the first ordinal category "Highlighting country names in paper titles" as the baseline. We found that from the first category to the second category "Stating studied countries explicitly in paper texts," the odds of studies focused on Western countries is significantly increased (p<0.05), From the first category to the third category "Suggesting studied countries implicitly in paper texts," the odds of countries focused upon Western countries is significantly increased (p<.05).

We tested the relationship between representation and authors' countries. Our null hypothesis was: The two variables are independent from each other.

We removed papers where authors came from multiple countries. A chi-square test did not reject this hypothesis (n=199, X-squared = 3.5375, df = 4, p-value = 0.4722). A Fisher's Exact Test did not reject this hypothesis either (p-value = 0.5512).

Taking these findings together, we found that studies conducted about non-Western countries are more likely to represent countries clearly, in titles and texts. Studies of Western countries are less likely to clearly representing the countries where the work was done. We did not observe that authors' countries had a major influence over the representation of countries in titles.

This naturally leads to the question whether the topic of information and communication technologies for development (ICT4D) has an influence over this titling pattern, as most ICT4D studies concern developing countries outside the West. To investigate this, we examined all the 248 papers that involve participant population(s) and found 21 ones with relevant keywords such as ICT4D, HCI4D, and ICTD, with one on Canada, and the rest 20 on non-Western countries. All of which indicated country information in titles. Our chi-square test (n=248, x-squared = 87.728, df = 1, p-value < 0.0001) found the association between being a ICT4D study and mentioning country information in titles extremely significant. This indicates that CHI has developed strong norms regarding the titling practices of ICT4D research. However, with only one study of Western context, we did not have enough data to examine the role of the Western/non-Western distinction in ICT4D studies. Importantly, after removing ICT4D studies from the 136 CHI papers in Table 2, the way of representing studied countries is still significantly associated with the studied countries

	adjective + noun	noun	Total
as adjective	17 (10)	N/A	17 (10)
As noun	13	19 (4)	32 (4)
Total	30 (10)	19 (4)	49 (14)

Table 3. Syntactic structure of constituents containing country information. Numbers within parentheses are number of titles in which the constituent is semantically related to other constituents if readers only read titles.

(n=115, x-squared = 28.9147, df = 2, p-value < 0.00001).

Patterns of titling practices when mentioning studied countries
In this section, we analyze titling practices, with a focus on the 49 paper titles that contain country names. We rendered all the mentioned countries in Figure 1.
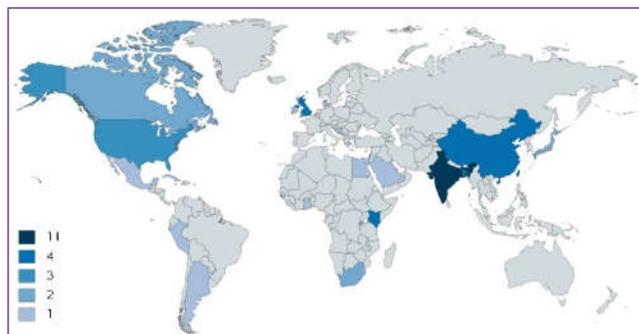

Figure 1. Countries with names mentioned in titles. Color grows darker with higher frequency of mentions.

We performed a syntactic analysis of all the titles [15]. An important concept in such analysis is "constituent," meaning "a string that speakers can manipulate as a single chunk" [15]. For simplicity, we did not include prepositions in our analysis of constituents. For example, "a United States city" is a constituent that represents a unified meaning. When analyzing a title, we marked all the major constituents, and paid attention to the position of the constituent containing country names (e.g., the beginning, middle, or end of a title).

We found that two paper titles have the country constituent at the beginning. An example is: "Cinehacking Cape Town – Embracing Informality in Pursuit of High Quality Media."

Two paper titles have the country constituent in the middle. An example is "Effects of Pedagogical Agent's Personality and Emotional Feedback Strategy on Chinese Students' Learning Experiences and Performance: A Study Based on Virtual Tai Chi Training Studio"

The largest group include 45 paper titles that put the country constituent at the end. An instance is "Mobile Phones for Maternal Health in Rural India."

We analyzed the role of these constituents in terms of syntax and semantics (see Table 3). There are 17 paper titles using the 'adjective + noun' form and country information as adjective, in which the country information is to describe the noun (e.g., "Social Media and the Police: Tweeting Practices of British Police Forces During the August 2011 Riots"). In this structure, the constituent is sometimes semantically related to other constituents in the title. In the aforementioned example, the adjective "British" corresponds to the later constituent "august 2011 riots." In another example of title "Thin Grey Lines: Confrontations With Risk on Colorado's Front Range," "Colorado" also semantically corresponds to the "gray lines" which refers to lines that authorities drew on maps to demarcate zones of flood risk [22].

Constituents where country information functions as noun in both 'adjective + noun' form (n=13) and 'noun' form (n=19), however, are rarely semantically related

to other constituents in titles. For example, in title "How Technology Supports Family Communication in Rural, Suburban, and Urban Kenya," the constituent "Rural, Suburban, and Urban Kenya" serves the sole purpose of highlighting the studied country, as it is not semantically related to the former constituent "How Technology Supports Family Communication." Using technology for family communication also happens in many developed countries. Another example is the title "Being Senior and ICT: A Study of Seniors Using ICT in China," where the phenomenon that seniors use information and communication technologies are common is common in both developing and developed countries.

This section shows that the speech community of CHI has relatively simple linguistic patterns of highlighting countries in titles. The common way of mentioning country names at the very end of titles often like a tacked-on clause rarely suggests deep semantic connections between the preceding ideas in the titles and the countries. This means of representing countries often plays a superficial role for the sole purpose of highlighting the studied countries, and in so doing becomes a common, unreflected solution to the conundrum of generalizability, which might in turn reinforce its superficiality.

Discussion

This paper is suggestive rather than definitive. Without analysis of titles in previous work and detailed guidelines for titling in the CHI community, it is ultimately up to tacit standards and conventions that govern what constitutes acceptable representation of countries in paper titles. The revelation of these tacit standards is critical in reflecting on mechanisms of

knowledge production at CHI. The papers in our sample of 306 CHI papers published between 2013 and 2017 followed strikingly different patterns of titling corresponding to whether the countries they studied are Western or non-Western. Said commented that:

> The Orient and Islam have a kind of extrareal, phenomenologically reduced status that puts them out of reach of everyone except the Western expert. From the beginning of Western speculation about the Orient, the one thing the Orient could not do was to represent itself. Evidence of the Orient was credible only after it had passed through and been made firm by the refining fire of the Orientalist's work. [20]

What our analysis points to is tacit Western practices of exoticizing certain locales within the existing CHI writings that have been established through systematic academic production. CHI favors the idea that studies conducted in Western countries such as the U.S. and the U.K. are more likely to produce "normal" and putatively universally applicable knowledge. Therefore, there is little to no necessity for these studies to elaborate on their study contexts. However, studies of non-Western countries such as China and India are expected to produce exotic, highly contextualized knowledge that does not travel beyond their borders. This bias is unspoken, and probably unreflected on, but, as our analysis shows, permeates procedures of producing acceptable publications for the CHI Conference. In particular, ICT4D research, which largely focuses on non-Western developing countries, shows strong patterns of highlighting country information. But are findings of ICT4D research irrelevant to a developed context? And how this titling norm in ICT4D research impacts the CHI community's

tacit standards for titling practices? These questions warrant further research using other methods such as surveys and interviews.

Presenting Western countries in CHI papers is not unproblematic. For example, just saying "we recruited participants from a large U.S. university" supplies little contextual information, especially if we consider the diverse demographics of a typical large American university. Rarely are the findings contextualized according to age, disability, type of educational background, or other variables that stray from the notion of the "typical college student" who is tacitly represented as stand in for Everyperson (see [8]).

In other cases, readers struggle to find the specific country of study, and will need to rely upon inferential strategies and external tools such as Google and LinkedIn. This presentation style may create the impression that such contextual information is unnecessary and the findings are generalizable. We cannot assume that findings from the U.S. or Europe can conveniently transfer to contexts of other Western countries which themselves have distinct national and cultural characteristics.

Implications and Future Work
While we have focused on titling practices, drawing inspirations from literary research [6] and linguistic anthropology [7], the issues with engaging multiple subjectivities regarding knowledge production and use need substantial attention in the CHI community. We hope that reviewers and writers alike will pause to consider that the U.S. and Europe are not the "norm" in the sprawling global society we all live in. Study findings may be quite generalizable across cultures or

they may pinpoint sociohistorical particularities, but the paper itself should explain this; reviewers should not assume, for example, that data collected in China are somehow essentially "Chinese." By the same token, data collected in the U.S. cannot be taken to somehow unproblematically represent everyone, requiring no comment. While we have only complicated research knowledge in relation to the country where research was conducted or where researchers were situated, moving from universalizing notions of knowledge to situative knowledge production and use requires researchers to pay special attention to the importance of language in addressing the epistemic and ontological dimensions of HCI research.

Acknowledgements

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