Higgins, Christina and Ikeda, Maiko. 2021. The materialization of language in tourism networks. Applied Linguistics Review 12, 123-152.

Abstract: This article traces how new linguistic practices emerge alongside the development of tourism in Hawai‘i and Japan. Building on research on *spatial repertoires* (Pennycook & Otsuji, 2015) and informed by Actor Network Theory (Latour, 2005), we trace and describe two networks of tourism to illustrate how signs, speech, and embodied communication materialize in actor networks. We frame these new spatial repertoires as examples of language learning and language change that occurs as an effect of human mobility intersecting with material affordances in new environments. To illustrate these processes, we compare the relatively new emergence of such spatial repertoires in Izumisano, a residential neighborhood in Osaka, to the more established repertoires that have formed in Kailua, a residential beach town on O‘ahu in Hawai‘i. In Izumisano, we focus on the emergence of Chinese alongside English, and in Kailua, we examine the recent emergence of the Japanese language. In both contexts, we identify how language first emerges in written form on signs in relation to other actants such as pancakes, airports, and train stations. This signage later becomes part of the embodied actions by service providers who acquire multimodal verbal repertoires through their interactions with tourists. We conclude with consideration of the impact of these changes on residential areas, and we discuss the potential of a materially-oriented approach for investigating the interrelated areas of language learning, language change, tourism, and social change.

1. The emergence of new signs in new networks

Figure 1. English-Japanese bilingual sign outside an Indian restaurant in Kailua, Hawai‘i.

In Kailua, a residential beach town on the windward coast of O‘ahu, bilingual signs featuring Japanese and English are increasingly part of the semiotic landscape. Figure 1 depicts this change in a sidewalk sign advertising the daily specials at an Indian restaurant. The sign features spelling often seen among second language users of Japanese, including チッキン for ‘chicken’ and ジュス for ‘juice.’[1] While such spellings are unusual in more established tourist areas such as Waikīkī, where a critical mass of Japanese tourists and residents have long been a part of, they point to the relative newness of the use of Japanese in public spaces in Kailua, where tourism has more recently arrived. Since 2005, the number of Japanese tourists who visit Kailua has increased significantly, and while no specific visitor figures are yet available (Gutierrez, 2016), their presence is marked by way of such signage. The emergence of varieties of Japanese such as this can be seen as a language change in progress, visible here in the semiotic landscape. Signs like this raise the question of why and how such linguistic changes take place as new tourist destinations form.

To understand the processes that yield such semiotic changes, this article traces the web of material and human dynamics behind these types of language changes in public space in two different residential contexts which have become increasingly visited by tourists: Kailua, Hawai‘i, and Izumisano, Osaka. While Kailua offers an illustration of changes in a location already associated with tourism (the island of O‘ahu in the U.S. state of Hawai‘i), Izumisano is an illustration of a city undergoing more recent changes in its semiotic landscape. A comparison of the two sites shows how linguistic change emerges within webs of relations involving tourism, media, and material objects, and it considers how the two networks differ.

Our analysis complexifies the view that a given tourism destination is a territorially bounded place that hails tourists due to natural beauty, good weather, and prime shopping opportunities. While these are not inconsequential elements, our ethnographic work has shown how destinations are produced by networks that are not only located in a so-called destination, but are instead distributed across online and offline contexts and objects. The formation of Kailua and Izumisano as tourist destinations and the subsequent language changes are thus the result of networked elements such as transportation routes, celebrities, food items, consumer products, and social media. In both cases, the development of new combinations of written and spoken language combine with material resources to create new multimodal *spatial repertoires* (Pennycook & Otsuji, 2015), particularly as residents in both Izumisano and Kailua acquire degrees of written and spoken Chinese and Japanese for communicative purposes. Spatial repertoires are semiotic practices that develop within particular spaces as a result of people’s trajectories and activities, which can themselves be distributed across time and space. In contrast with conventional conceptions of communicative repertoires, spatial repertoires are not understood as associated with individuals or communities, but rather, are the result of a nexus of activities involving people, objects, and technologies. They have “an emergent property deriving from the interactions between people, artefacts, and space” (Pennycook 2018, p. 454). Spatial

1. チキンis the standard spelling for chicken in Katakana, but the sign uses チッキン which has added ッ between チ (chi) and キン(ken). ジューース is the standard spelling for juice, but the sign uses ジュス which does not indicate the long vowel between ジュ(ju) and ス(ce). These are common spellings among L2 users, based on Ikeda’s experience teaching Japanese as an additional language.

repertoires often exhibit *truncated multilingualism*, or language competence which is organized around specific activities and sociolinguistic domains (Blommaert et al., 2005), and which may be seen as ungrammatical or incomprehensible by first language users. Nevertheless, they are used to achieve a great deal of meaning-making in touristic contexts.

Our analysis of these two sites illustrates how language learning and language change in tourism contexts is inextricably material in nature. Current frameworks for second language learning and language contact have yet to deeply consider the relevance of the material world in the acquisition and use of additional languages, particularly in contexts such as tourism, where relationships are fleeting (Jaworski & Thurlow, 2010). Even frameworks that treat social relations as central to language learning have little to say about non-human aspects of the phenomenon. For example, while second language socialization acknowledges the importance of social practices and the process of apprenticeship, the focus of this line of scholarship is on the communicative practices that newcomers gain competence in as they take part in activities linked to a group. While the dynamics of transnationalism, social identity, heritage, and group membership have been complexified in more recent work (e.g., Duff, 2019), there is little discussion of how the material world shapes language learning. Similarly, research that acknowledges economic differences among language learners and the importance of race, gender, and class in learners' access to language learning opportunities focuses mostly on discourse and how people engage with one another through studies of agency, investment, and identity (Miller, 2014; Darvin & Norton, 2015). Since tourism leads to language learning and language change in many parts of the world, it is important to understand how the material worlds of visitors and hosts alike are central to second language learning and language contact and change.

2. Spatial and polysemiotic meaning-making

We draw from a series of conceptual and methodological approaches which foreground semiotic meaning-making from a perspective that emphasizes spatial relations over cause-effect chronology or a privileged view of human agency. This includes Actor Net Theory (ANT), an approach and disposition toward researching social and natural worlds that seeks to understand how phenomena are continuously (re)generated as effects of webs of relations (Callon & Latour, 1981; Latour, 2005; Law, 2009). In ANT, agency is not a feature only of humans, but rather is distributed along relations between humans and non-humans. As Law and Singleton (2013) explain, ''ANT isn't saying that people are robots. It's saying that people can be understood as an effect of the unfolding web of relations they're caught up in. And that human and non-human actors are assembled together" (pp. 490–491). Utilizing ANT in tourism, Van der Duim (2007) introduced the idea of *tourismscapes*, or socio-material configurations consisting of spaces, people, material objects, technologies and institutions. Tourismscapes are made up of people acting as tourists and service providers, each doing their part to consume and to provide objects and experiences to buy. Tourismscapes are also created through natural and built environments and cultural experiences which allow visitors to embody their *tourist gaze* (Urry, 1990) as they travel. Like all networks, tourismscapes are distributed across time and space since they are created through networked technologies including non-stop air travel routes, social media sites, mobile phones and railways. Tourismscapes require all of these elements to function and to configure the tourism experience (Van der Duim, Ren & Jóhannesson, 2013). Though not explicitly within an ANT framework, Thurlow and Jaworski (2014) examine the technologies involved in tourismscapes in their analysis of the role of mediation and remediation among

tourists who visit the Leaning Tower of Pisa in Italy. They show how tourists perform the space by using mediated images from brochures and magazines, and they illustrate how tourists actively perform spaces and remake them. For example, tourists enact the "Pisa Push" after learning to place their bodies to get just the right photo, which are then uploaded to social media to share their 'unique' experience. Tourists also remediate tourism spaces by posting their narrated experiences of climbing accomplishments on YouTube for others to see, and to likely emulate as well.

ANT is conceptually compatible with other spatially oriented frameworks which have received growing attention in applied linguistics. There is resonance with Deleuze and Guattari's (1987) concept of *assemblage*, which refers to an ontology that emphasizes fluidity, exchangeability, and multiple functionalities through entities and their connectivity. Assemblage has become useful in the analysis of academic practices, as Canagarajah (2018) demonstrates in his analysis of university STEM scholars' research and teaching activities. For example, in the production of academic knowledge in the form of a manuscript for publication, the English language is just one affordance alongside other semiotic modes, including existing publications, text messages in English and other languages, shared computer screens, diagrams, and gestures and gaze. Rather than seeing language as scaffolded by other affordances, Canagarajah (2018) uses the term *polysemiosis* to highlight the combined effect of assemblages as forms of meaning-making. In this view, language is not extractable from its material networks. This view of face-to-face communication also resonates with recent work on *translanguaging* that expands this term beyond language-based conceptualizations and includes the use of the body (Blackledge & Creese, 2017) as well as the physical spaces in which interactions occur involving the layout of objects and people (Zhu Hua, Li Wei & Lyons, 2017) and the relationship between shop owners, consumers, and the trajectories of products and people (Pennycook, 2017). All of these spatialized practices shape the ways that language is used in these contexts, thus producing new spatial repertoires that involve networks of humans, objects, technology, and other features.

3. A network approach to data collection

In order to provide accounts of how language materializes in networks and assemblages, we follow Latour's (1987) advice to stay close to the ground, follow the actors and tend to descriptions through a "methodology of following." As Ren (2010) describes it, a central aim of ANT is to unwrap the black boxes of cultural and social matters by showing how these were created by the complex linking and ordering of heterogeneous entities. Our approach was also informed by the work of other ethnographic researchers in the field of linguistic landscapes, including Blommaert (2013), whose ethnography of his hometown in Belgium treats the linguistic landscape as a means of identifying historical and social change related to new flows of residents. Following Blommaert, we treated the semiotic landscapes of both cities as historical documents as we walked the neighborhood streets, had conversations with shopkeepers and visitors, and acted as consumers ourselves in order to document ongoing change. We were also inspired by Lou (2016), whose ethnography of Chinatown in Washington D.C. not only studied signage, but also focused on the role that urban renewal has played in producing different senses of place for old-time longstanding Chinese residents, newer residents with no Chinese ties, and visitors. Similarly, we were interested in the ways that the material infrastructures for

tourism intersected with the visual semiotics of the two places we studied, and how this led to changing spatial repertoires.

Our ethnographic work involved a range of methods to understand the various actors and their relations in networks. In Kailua, Hawai'i, we were able to visit regularly over a two year period in order to take photos, talk with tourists and service providers, video record interactions, take part in tourist activities ourselves, and keep track of social media and news reports related to Kailua. While neither of us lives in Kailua, it is accessible by car within 30 minutes from where we live in Honolulu, and we both have spent time there for over 10 years. Our work in Izumisano has been more concentrated, though it is well known since it is the hometown of the second author. She has conducted focused research in Izumisano over three field visits ranging from two weeks to three months. This research has included photography and video recording, interviews with tourists and service providers, and the collection of news reports and posts on social media about increasing tourism in Izumisano.

Given our disciplinary interest in language, the changes to the linguistic landscapes of both Kailua and Izumisano became our starting point. We therefore began our data management by creating spreadsheets which logged photographs of language change on signs. In Kailua, we noticed an increasing number of signs featuring Japanese (see Figure 1), and in Izumisano (Figures 2, 3), we saw many signs featuring Chinese, and sometimes other languages as well. Though Japanese tourists have comprised the second largest national market[2] for Hawai'i tourism since the 1990s, Kailua has only started becoming a destination for a significant number of Japanese visitors for the past ten years. Though no official number of visitors to Kailua has been counted, news reports indicate that there has been a noticeable increase of Japanese tourists in Kailua in the past five years in particular (Gutierrez, 2016). While English signage has been seen for many years in Izumisano, the presence of Chinese is relatively new and coincides with the increasing flow of Chinese tourists to Japan over the past decade. In 2007, less than one million Chinese tourists traveled to Japan, but in 2017, over 7 million Chinese tourists visited the country, comprising more than 25% of all visitors to Japan that year (Tani, 2018).

2. Japan is the second largest national market after visitors from the continental United States. In 2017, 5,842,568 visitors came to Hawai'i from the U.S., and 1,587,781 hailed from Japan (Hawai'i Tourism Authority, 2017)

Figure 2. Chinese sign for Japan-made rice cooker for sale in Izumisano. It reads 'The price of all products in our store are exclusive of taxes.'

Figure 3. Multilingual sign in the Rinku neighborhood, Izumisano. The sign is in Japanese, English, Chinese, Korean, and Thai.

As we logged each photo and its geo-tagged coordinates, we also began to take note of and keep track of what other actants were relevant for explaining the emergence of new forms of multilingualism in each context. This led us to map actor networks that allowed us to see the elements involved in producing these forms of language, in accord with Latour's (1987, p. 4) premise that ANT is the study of "science and technology in the making" as opposed to "ready made science and technology." We then also logged material nodes of the network as we

discovered them ethnographically. This includes websites to help guide fellow tourists, YouTube videos, bus routes, bicycles, train stations, and pancakes, to name a few. We then created a set of terms to express the relationships through a semiotic grammar including relational words like "because of" and "about" and "visits" as we followed the network, and we mapped our data with VUE, a concept and mapping application created by Tufts University[3]. We examine these in more detail in our discussion of Kailua and Izumisano next.

4. Actor networks and spatial repertoires in Kailua, Hawai'i

In mapping language in its social contexts, we begin by anchoring assemblages to specific instances of language on signs. The signs are not really the origin of assemblage at all, but rather a decision that privileges language as a focal point for consideration, or a pragmatic "cut" that allows us to narrate how language functions in the networks we analyze (Canagarajah, 2018, pp. 288-89). Figure 4 is our starting point, which is a photo of a sign on the door of a restaurant called Boots & Kimo's Homestyle Kitchen that asks customers in both English and Japanese to keep the door closed. No other Japanese appears on the outside of the restaurant. The restaurant is now very popular at certain times of the day among Japanese tourists who come to order the pancakes with macadamia nut sauce.

Figure 4. Boots & Kimo's in Kailua, Hawai'i.

To get into the network involving this sign, we will see that the relevant actants involved in the emergence of Japanese in the linguistic landscape include both human and non-human components, including pancakes, Japanese celebrities, social media, public transportation, private trolleys buses, and the internet, to name the key nodes. Boots and Kimo's did not used to be especially famous for pancakes. However, after Summers, a comedy duo from Japan, visited the restaurant in 2010, and later in 2015, it became a major destination for Japanese tourists. Special tourist trolley buses originating in the tourist mecca of Waikīkī even started servicing Kailua in 2015, aiming to drop them off between 8 and 10 a.m. The pancakes have a well-loved white macadamia sauce, and they have become the reason for Japanese tourists to travel from Waikīkī to Kailua, which is about a 45 minute bus or trolley ride. There are many restaurants that

3. VUE is the acronym for Visual Understanding Environment, created at Tufts University http://vue.tufts.edu. We thank Rich Rath and David Goldberg of the University of Hawai'i at Mānoa Digital Arts and Humanities Initiative for their many hours of assisting us.

sell pancakes with a similar macadamia sauce in Waikīkī, but that is not the point. The point is that Summers went there and ate pancakes, and Japanese has emerged in the assemblage of material affordances that have come about a result. This is depicted in Figure 5.

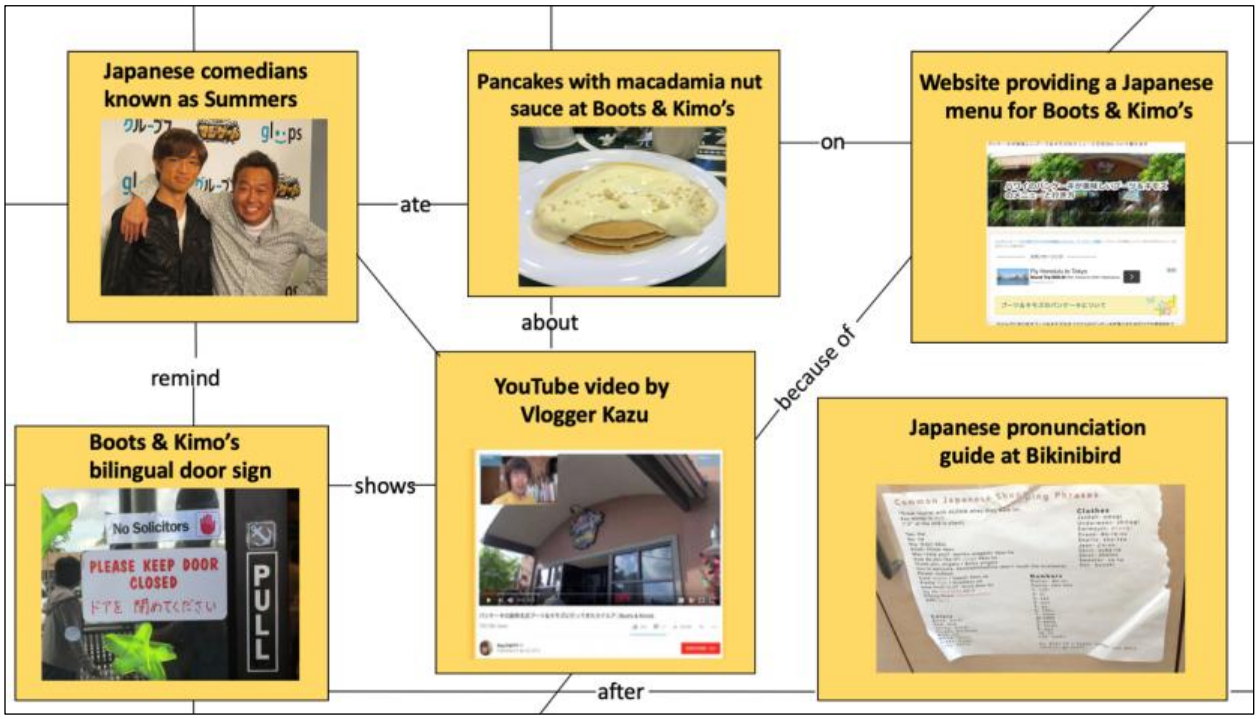

Figure 5. The actor network of multilingualism in Kailua

Starting in the bottom left corner is the bilingual sign on Boots and Kimo's door, reminding people to keep the door closed in Japanese and English. Other monolingual signs in English are visible as well that prohibit solicitors and give the advice to pull rather than push the door to enter. The bilingual sign has emerged in web of relations of actants with the most central being the macadamia nut pancakes, shown in the top center of Figure 5. Other actants include Japanese celebrities Summers, in the top left corner, who ate the famed pancakes in 2010 and 2015. They were filmed while doing so, and their experience aired on Japanese television and social media. In 2012, Japanese vlogger Kazu produced a vlog about pancakes at Boots and Kimo's, retracing their steps. This video provided an affordance for Japanese visitors with limited English to visit the restaurant with an informed understanding of how to order the pancakes. Interestingly, despite the steady flow of Japanese tourists to the restaurant, no Japanese menu has been created by the restaurant. However, fans of the restaurant with Japanese language abilities created translated menus and posted them online, as seen at the top right of Figure 5. The website featuring the menu states the restaurant's operation hours, recommended dishes, payment form (cash only), the location of parking, directions to get there by bus, car, or trolley bus and directions to get there from the bus stop in Kailua. Menus are also available on the trolley websites, and customers can even pre-order their pancakes on specific tours. These internet-based resources have limited the modalities of Japanese to some degree.

Despite the online affordances, tourists still consume pancakes at the physical restaurant where servers interact with them. Due to the flow of tourists, the wait staff has developed domain-specific knowledge of Japanese, and so the spatial repertoire of the restaurant has changed over the past eight years. The employees report learning truncated Japanese through interacting with customers and from their fellow workers. Unlike Waikīkī, the tourist mecca of O'ahu, where employees are often hired and even paid more for the ability to speak Japanese, no workers we talked to identified as knowing Japanese. Still, many had learned what they deemed essential phrases, including:

- San mai = 'Three pieces'
    - Servers reported that customers were sometimes surprised by the quantity of food in one order of pancakes. They learned *san mai* to indicate that one order of pancakes has three pancakes
- Pana puru = 'pineapple'
    - Servers reported the practice of upselling to increase the overall bill by suggesting the iconic fruit associated with plantation era Hawai'i; they noted that Japanese customers generally do not comprehend the English pronunciation.
- Gomen nasai: 'I am sorry.'
    - Servers reported the need to apologize to customers. This form of apology is not what would be expected in service encounters in Japan, but it is an L2 variety. *Sumimasen* is appropriate in restaurant situations
- Menu arimasen: 'We do not have a (Japanese) menu.'
    - Although many visitors accessed internet-based menus before coming to the restaurant, servers were still asked for Japanese menus on occasion.
- Arigato: 'thank you'

These phrases are part of the spatial repertoire that is forming in spaces like Boots and Kimo's, as well as other destinations in Kailua where Japanese tourists are increasingly going. In addition to these spoken phrases, a few signs have been created by the restaurant to help process cash payments (Figure 6) and to advertise t-shirts for sale. Internet resources and Japanese-knowledgeable friends of the restaurant management were consulted in the production of these signs.

Figure 6. Coin chart in Japanese.

Figure 7. Japanese on signs selling t-shirts.

Transportation routes are also key actants. After celebrities came to Kailua, trolley buses originating in the tourism heartland of Waikīkī started going to Kailua in 2012. Now, at least four companies offer regular service to Kailua. Trolleys are scheduled to arrive in the morning, between 8-10 a.m. Tourists can choose to return after two or four hours, so they must plan their activities in order to get back to the trolley in time. Due to the trolley schedule and television shows in Japan that have featured celebrities taking bike excursions in Kailua, tourists rent bicycles after eating at Boots and Kimo's and visit nearby Lanikai Beach, or they go on a short hike to get a good view of the area. Therefore, at shops nearby the restaurant such as Bikinibird, there is little need for Japanese in the morning hours. At the swimwear shop, the employee who speaks some Japanese is only scheduled for afternoons, when the tourists are expected back from their bicycle and hiking journeys. Consequently, the presence of Japanese is limited to the specific time-space of about 12-3 p.m. at the shop, in accord with the trolley schedule. This is a clear example of how the human artefact of language is shaped in the web of relations by non-human actants, in this case, trolley lines and bicycles (cf. Callon, 2001). Since some Japanese visitors to Kailua are not interested in biking and hiking, customers go into shop in the mornings as well, of course. This has led Bikinibird to make a pronunciation guide for internal use to help workers who are on during shifts when it is not expected that Japanese customers will be shopping (Figure 8, also see bottom right of Figure 5). The list of shopping phrases were taped to the counter, out of view of customers.

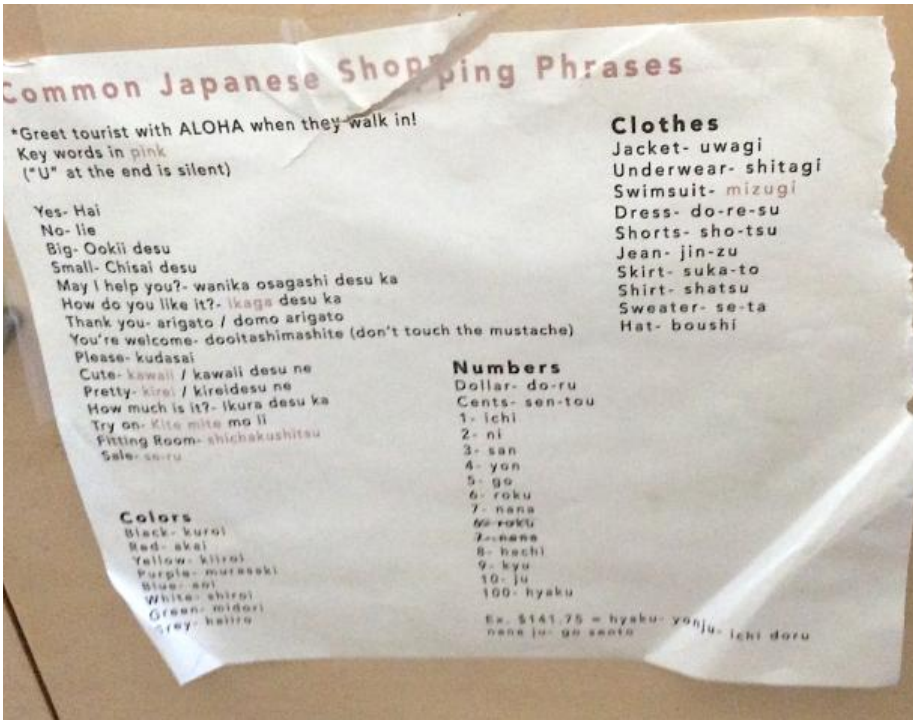

Figure 8. Japanese language guide for employees.

Similar signs started to appear in 2016 in magazines aimed at Japanese tourists going to Kailua that provided pronunciation guidance using *katakana*, the phonetic writing system for foreign words in Japan that allows speakers to pronounce English sentences without the need to actually know English. An example for clothing shopping is:

Original: ほかの色はありますか？

Katakana: ドウー　ユー　ハブ　　エニイ　アザ ー カラーズ　アヴエイラブル?

Meaning: Do you have any other colors available?

These signs and texts reveal rather novel forms of semiotics that have materialized as part of the spatial repertoires of tourism in Kailua.

Spoken Japanese language learning and use can also be found in Kailua. One case illustrates how a shopkeeper (SK) of a store specializing in island clothing and reggae-related products makes use of Japanese words and phrases to communicate with his Japanese customers (JC). In the excerpt below, the shopkeeper guides a customer to select the right coins from her wallet. After making the payment, the customer pours the rest of her coins into a glass tip jar on the counter, to rid herself of the burden of carrying the coins. After she expresses surprise at how noisy the coins are, the shopkeeper says *"daijoubu,"* ('it's alright'), finishes the transaction, and thanks the customer in Japanese.

Excerpt 1. Daijoubu

1		((Shopkeeper takes cash from a tourist at the register))
2	SK:	Three. Three little ones. ((pointing to coins))
3		This one ((pointing to dime)). One more. No.
6		Okay thank you.
7		Okay.
8		((Customer pours all of her coins into a glass container on the counter)).
9	JC:	Ah, ('oh')
10	SK:	*Daijoubu*. ('it's alright')
11		((cash drawer closes))
12		Okay. *Arigato*. ('thank you')

The American-born shopkeeper explained to us that although he knows a lot of Japanese due to being married to a Japanese woman, he limits his use of it in the store since he may "run out of language" if customers continue to engage him in conversation. While the shopkeeper is careful to limit his own spatial repertoire, nearly all of the products in the store are described in bilingual signs that his wife has written on small cards by hand, thus allowing customers to get more information in Japanese from the written environment.

5. Izumisano, Osaka, Japan

Izumisano is in the countryside of Osaka, Japan. In the past, the prosperous main industries were fishing and towel making. It used to be rare to see there, but new forms of multilingualism featuring English, Korean, and Chinese have materialized over the past five years. Kansai International Airport has grown since and currently has about 19 million travelers per year. There are now direct flights from 30 main cities of China and a total of 50 flights from China per a day. Some flights are at night or in the early morning, so Chinese tourists who stay in hotels in Izumisano are increasing, particularly since the addition of direct flights from China on low-cost airlines in 2015. The key actant for language change in Izumisano is the bridge which connects the airport to three nearby towns by train (Figure 9). Chinese visitors to Japan often stay overnight close to the airport, and this has led to new spatial repertoires.

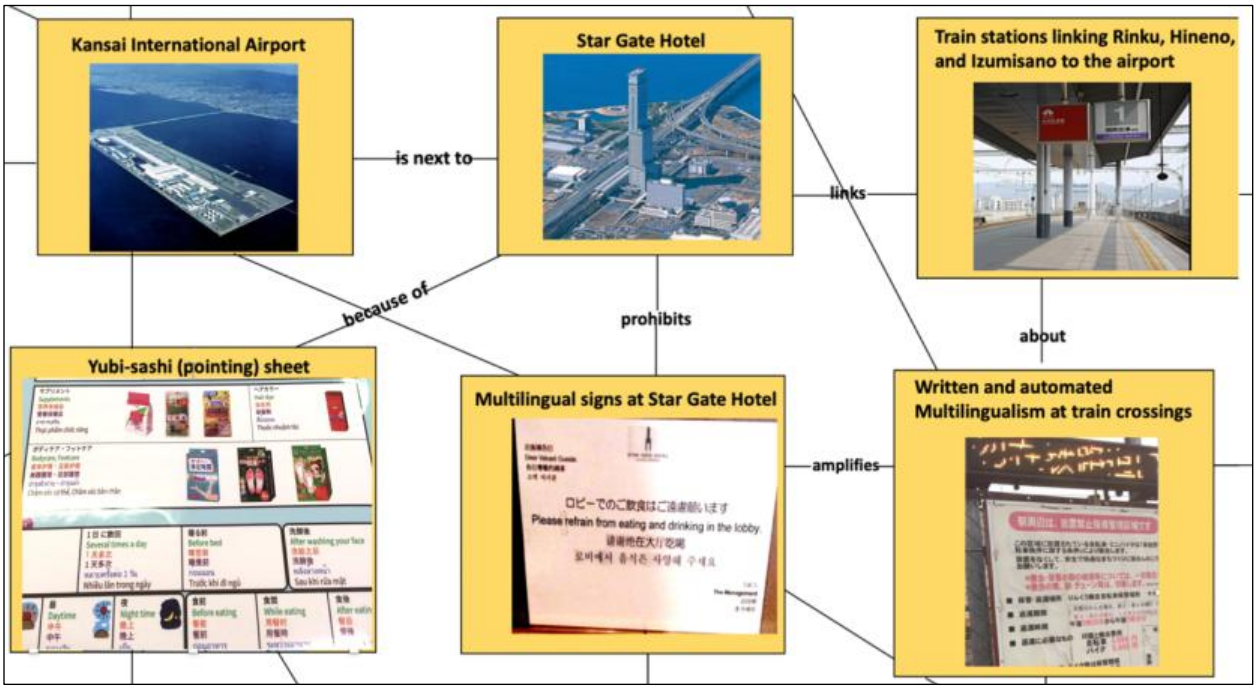

Figure 9. The actor network of multilingualism in Izumisano.

The three stations closest to the airport are Rinku, Hineno, and Izumisano, which are only one or two train stops from the airport. Nearby hotels and tourist-oriented activities are therefore key sites in terms of the emergence of new forms of multilingualism. Rinku's key feature is the Star Gate hotel, which is 56 floors high and the third tallest building in Japan (see top middle of Figure 10). Much of the hotel's signage only features Japanese and English, as featured on the

Figure 11. Star Gate sign in English and Japanese

hotel sign (Figure 11). In the lobby, a robot welcomes tourists in English and Japanese (Figure 12). It tells visitors about the restaurants in the hotel and can also engage in small talk with tourists.

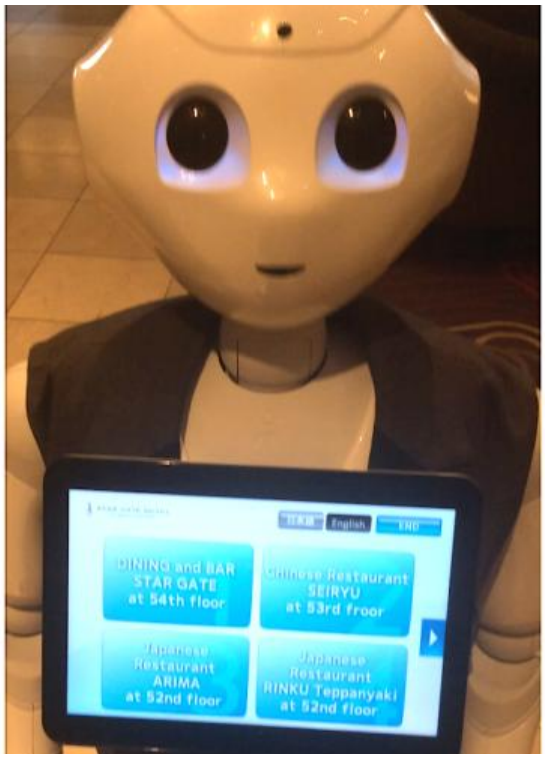

Figure 12. Japanese and English speaking robot in the Star Gate Hotel lobby.

While the hotel sign and the investment in a speaking robot are only in Japanese and English, other signs indicate the growing importance of Chinese at the hotel, including paper signs such as cards with wifi information. A vending machine is located in the lobby, but guests are told on a paper sign in Japanese, English, Chinese, and Korean not to eat or drink in the lobby. According to the hotel employees, the sign includes Japanese out of politeness, even though the sign targets foreigners (Figure 13 and bottom of Figure 10).

Figure 13. Sign in the Star Gate Hotel

Moving out from the hotel, customers visit shopping areas near the hotel and in close walking distance to the train stations that are one or two stops away. The spatial repertoires in Izumisano have changed with regard to what languages are seen and heard, though not spoken. Upon entering a drugstore near the Hineno train station, announcements are broadcast on a loop that welcome visitors and express appreciation in Japanese, English and Mandarin. Interactions between tourists and shop clerks happen most often near the cashier area, but cashiers do not display that they have (yet) acquired any English or Chinese. This is in part due to other textual affordances that shops have prepared, including *yubi-sashi kommunikashon shiito* ('sheet for communication through pointing') (see bottom left of Figure 10 and Figure 15). These sheets use iconic symbols for products one might shop for and are used by employees to tell customers the location of products in the store and to ask what customers are looking for without the need for spoken language. *Yubi-sashi* sheets have been created to explain how many times medicine should be taken per day and what effect this medicine has, all through pointing (Figure 15). While the sheets contain translations in five languages, including both simplified and traditional characters in Chinese, field work by the second author shows that the majority of customers who engage with employees via this sheet are Chinese speakers. Chinese customers often seek out all natural health products and medicines in Japan (Tsujimoto, 2017), so it is not uncommon to see Chinese customers in drugstores in particular.

Figure 15. *Yubi-sashi* sheet at a drugstore in Hineno.

As a means of giving instructions in intercultural contexts, many signs are posted which show customers step-by-step procedures in multiple languages. While Japanese customers are familiar with using a designated paper cover when trying on clothing, many countries do not have this practice. Therefore, signs are posted in dressing rooms in Japanese, English, Chinese, and Korean, with Japanese appearing first and in the largest font (e.g., Figure 16). According to our observations, the code preference of Japanese on the signs does not index a need to enforce the policy among Japanese customers, but rather, indexes the polite intention to avoid depicting foreigners as problematic shoppers.

Figure 16. Instructions for using a disposable face cover.

Signs offering instructions for Japan-specific practices are not hard to find. Such signs are now multilingual, including signs displaying how to use both high-tech and conventional toilets. Around shopping areas, Chinese has emerged in activities related to transactions. Since some shops do not take credit cards, travelers need to use cash machines. Now, these cash machines have Chinese and Korean instructions on how to withdraw money in Hineno. In this regard, the consumption of goods and the requirement to pay in cash has led to the materialization of Chinese and Korean language in written and spoken form. In parking lots, there are no workers to help foreign travelers to buy tickets, so signs instruct them. One parking lot that we encountered in the Hineno neighborhood explains how to pay for parking in signs and in audio recordings of Japanese, English, Chinese and Korean.

The train station that visitors use and the trajectory that travelers follow to hotels and shopping malls also bring about more multilingualism in the network. Our initial fieldwork in Hineno in 2017 revealed that these trajectories first led to new material artifacts and texts, similar to the *yubi-sashi* sheets and the multilingual instructional signs discussed above. Attendants used photos and tablets to give directions to Chinese tourists (Figure 17), and station attendants prepared their own forms of *yubi-sashi* sheets for directing visitors. Attendants informed us that whenever they have trouble answering questions, they make the necessary documents to correspond to these questions for future use. Figure 18 shows an example of directions from the station to the shopping area in Rinku.

Figure 17. An attendant guiding Chinese tourists with a tablet.

Figure 18. A *yubi-sashi* sheet made by the station attendants at Rinku station.

Employees at the train stations prepare many text-based resources to inform foreign visitors of various possible scenarios and carry them in binders. Figure 19 illustrates the necessary information that needs to be conveyed in case a typhoon causes the train to Kansai International Airport to be canceled. This is the 41st scenario in the binder.

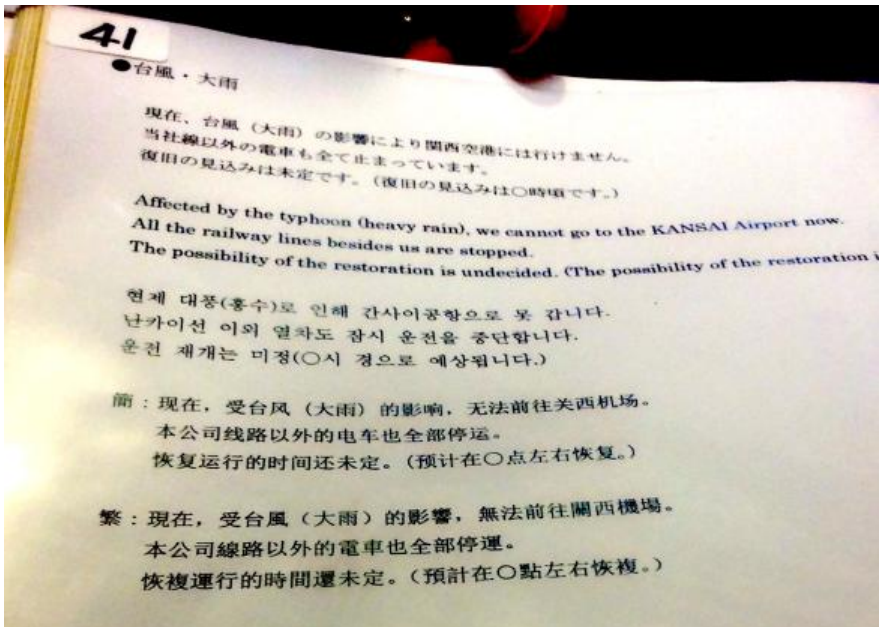

Figure 19. Scenario 41 in Japanese, English, Korean, and simplified and traditional Chinese orthography.

The three stations of Hineno, Rinku, and Izumisano now have signs attempting to regulate tourists' behavior as well. The desire to photograph one's tourism experience has led to problems. Some visitors take pictures on station platforms using selfie sticks, where they are at risk of electrocution. The selfie sticks became actants in the multilingual network, so signs appeared to explain that selfie sticks are prohibited in multiple languages (see bottom right of Figure 10). While the highest number of selfie-reported deaths took place in India (Jain & Mavani, 2017), there is an alarming recent trend reported in news stories about Chinese travelers in particular who stand on train tracks to take scenic pictures with trains approaching. Accordingly, at Hineno station, the railroad crossings have signs cautioning people in Chinese, Japanese, English, and Korean to move off of the rails when trains approach. Despite these signs, field work in 2017 revealed that tourists are still putting themselves at risk to take selfies on the tracks (Figure 20).

Figure 20. Chinese tourists in Rinku taking photos on train tracks

In addition to endangering their own lives, tourists' insistence on standing on train tracks in the face of oncoming trains has led to a lot of frustration among Japanese residents whose trains were often delayed by tourists. Therefore, in 2017, audio announcements were added to signs that also featured flashing lights and the written signage. In the train stations, spoken language is also now emerging among Japanese employees whose work brings them into encounters with this tourist flow. In 2017, one train station worker in Hineno gave announcements in Japanese and Chinese, which he reported teaching himself as a result of seeing the need to communicate with Chinese visitors. A recording of him titled "日根野駅の駅員さんは中国語を習得したようです" ('Station staff at Hineno Station seems to have learned Chinese') was even posted on YouTube where he advises Chinese travelers which trains to take

to reach their destination. In the comments section, many Japanese language users express wonder at the attendant's language abilities, but other comments critique his pronunciation for being unintelligible. One multilingual commentator provided a translation on the YouTube comments (Figure 21).

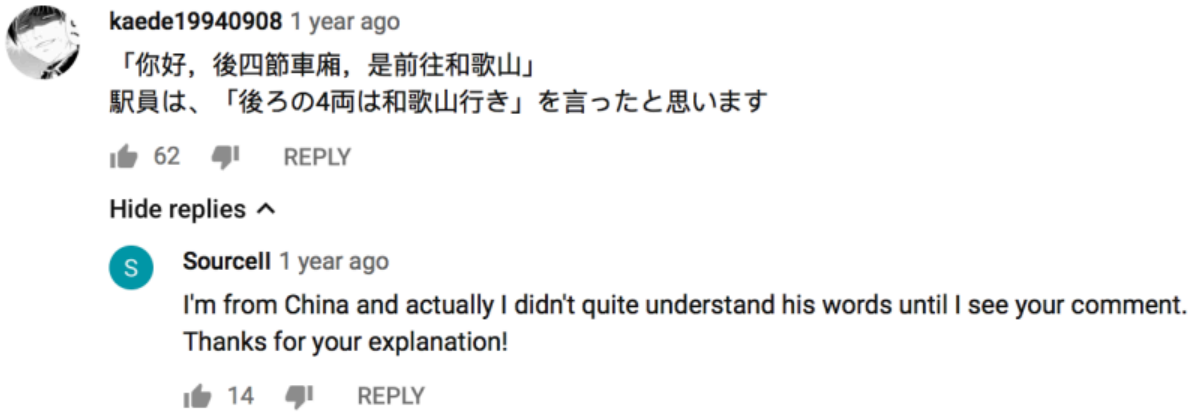

Figure 21. YouTube commentator provides the Chinese transliteration and the Japanese translation for viewers.

The station attendant was informing Chinese tourists who were headed to Wakayama where they could find the relevant trains to board. Below is a transcription of his Chinese announcement that was scrutinized by YouTube commentators:

Orthography:	你 好， 後 四 節 車 廂 是 前 往 和 歌 山
Phonetic representation:	nǐ hǎo, Hòu sì jié chē xiāng shì qián wǎng hé gē shān
Gloss:	you good, last four QUAN train cars COP head to He Ge Shan
English Translation:	'Hello, the back four train cars are headed to Wakayama Prefecture.'

While many of the comments posted by self-identified Chinese speakers noted the difficulty in understanding the attendant on the YouTube video, his language learning and use is well suited to the purpose of advising Chinese tourists. In Japan, the destination under focus is known as Wakayama, but the attendant uses the Chinese place name He Ge Shan in consideration of his audience. His pronunciation is not surprisingly influenced by Japanese, and there are some differences in his Chinese grammar, such as a lack of a turn-final particle *de* after the copula *shì*. Nevertheless, his spatial repertoire has been formed to be able to advise tourists about trains to Wakayama because of the human and material changes in the network in which he is embedded.

6. Discussion

Our research in following the networks in Kailua and Izumisano shows a pattern in the trajectories of language development in the network of tourism. The interlinked nodes indicate a development from written language to embodiment to spoken language in both networks. This was illustrated most clearly in the case of the Japanese train stations, where we are just beginning to see spoken Chinese emerging among people who encounter Chinese visitors on a regular basis. As the binders at train stations that are full of multilingual handouts imagining various scenarios show, every effort had been made to produce signage that can guide visitors in multiple

languages. However, recordings of Chinese and spoken Chinese are emerging as necessary tools for meaning-making when messages are particularly urgent. In Kailua, Japanese and English signs are physically present and Japanese resources are online, thanks to the preparations of Japanese visitors who create material artifacts for those who follow in their footsteps. Still, waiters have learned restaurant Japanese to upsell, and shop workers have added Japanese vocabulary and phrases for numbers, colors, and clothing items to their shop repertoires with the assistance of self-made language guides. Such resources have yet to emerge in Izumisano, and are perhaps being precipitated by the attention to preparing many pointing sheets in prediction of scenarios tourists will encounter. This may point to a cultural difference in terms of how much a host society prepares for visitors ahead of time, what sense of obligation a host culture feels toward visitors, and how this manifests in efforts to ensure smooth communication. Given the status of English as the most widespread global language, lesser efforts to prepare for visitors in Kailua may reflect an imbalance of power in terms of who is expected to know whose language,a and to what degree.

This difference resonates with one of the criticisms leveled at ANT and materially-oriented research in that by virtue of its flat ontology, it fails to allow for a critical perspective on power and privilege. The argument is that if objects have as much potential as humans to act, then the possibility of humans to take action becomes impossible. Canagarajah (2018) responds to this critique with reference to performativity. Rather than seeing language as controlled by people, a materialist and spatial approach allows him to analyze how STEM scholars produce their academic work within social and material networks as they always have done. It expands our understanding of where language competence resides by acknowledging the significance of affordances beyond the individual in making sense of how people use and produce language. In the context of STEM scholars, this includes material objects like blackboards and screens, textual artifacts like text messages and published articles, and human resources such as collaborating authors and students. Similarly, Pennycook (2018) writes, "While it may be useful to resist the stronger claims around objects as actants, we can nonetheless start to consider the subject in more material terms, as part of a wider distribution of semiotic and material resources, as interpellated by objects, as no longer the guarantor of meaning, as a product rather than a precursor of specific interactions" (p. 457).

An example of power is illustrated in pushback to over-tourism in Kyoto, Japan, a very popular destination for travelers from all over the globe due to its traditional architecture and gardens. According to at least one news report in the *Asahi Shimbun,* some businesses that have been overrun with tourists discontinued multilingual service support on their websites and screen their customers when accepting reservations by phone (Brasor, 2018). According to business owners in Kyoto, the flood of tourists has damaged the *miyabi* ('elegance') which is what makes Kyoto so special in the first place. This kind of response can be seen as an act of (re)territorialization of space through restricting languages and the willingness to provide service (Higgins, 2017). It is also an illustration of how language itself is an actant in a network. Without the multilingual signs and websites, the flow of tourists changes. Similar responses may occur in both Kailua and Izumisano in the future, as negative feelings towards tourists by some members of the communities have already emerged. As has happened in Kyoto, it is plausible that Kailua residents will delimit the degree to which Japanese emerges due to their opposition to changes that would threaten the residential nature of the area. Kailua residents tend to be affluent and politically engaged, and many have been actively trying to brace against over-tourism by discouraging tourism-related advertising (Sakahara, 2013) and attempting to more effectively

regulate the number of unlicensed home rentals (keepitkailua.com). Whether they can maintain a way of life for residents, rather than for tourists, remains to be seen. In Izumisano, the increasing presence of new forms of multilingualism is just beginning, but residents report concern that their neighborhoods are already changing as well. Interviews with residents show that they dislike the recorded announcements that have become necessary to warn visitors about standing in the train tracks and to welcome them into stores. Perhaps lessons can be learned from other more longstanding destinations such as Sapporo, which have struggled to manage local Japanese expectations alongside international visitors' behaviors. After the Hokkaido Tourism Organization received criticism from making a booklet on bad manners aimed at Chinese tourists titled "Hokkaido Ryoko Joshiki" ('Common Sense When Traveling Hokkaido'), the organization renamed the booklet to "The Traveler's Ettiquette Guide to Hokkaido," removed patronizing language, and also produced an English version to avoid targeting Chinese visitors ("Hokkaido rewrites," 2016). It seems that by using multilingual signs, Izumisano business owners are already following a similar strategy.

7. Conclusion: Engaging with materiality in applied linguistics

In this article, we have aimed to show how language in tourism is a part of an actor network that produces new spatial repertoires. Since one of the goals of applied linguistics is to better understand language learning and use in real-world settings, we assert that applied linguists can and must engage with the material in order to understand how language functions. As Pennycook (2018) notes, applied linguistics can benefit from welcoming a more varied understanding of semiosis into its purview. More than the study of language, applied linguistics is about the study of communication in which linguistic resources intersect with other affordances to produce and convey meanings across people, objects, and technologies. Tourism is by definition a social context in which such meanings will be cross-cultural and cross-linguistic, and therefore require attention to how such differences are navigated as visitors cast their tourist gaze. In the cases we presented, the key actants are transportation routes, such as Kansai International Airport and the train stations located near it. In Kailua, transportation routes are also key, though the relevance of language on them is less visible since the more mature market of tourism in Hawai'i has led to the development of online material affordances that Japanese visitors can consult. Of course there are other actants at play, including growing economies, disposable incomes, and dispositions to travel, which are cultivated through media and narratives of travel in social networks. These will continue to take new shapes as material resources and forces change, thereby producing new forms of polysemiosis. For now, we have documented the spatial repertoires of two emerging tourism destinations in their early phases.

8. References

Airports Council International (ACI). 2018. Airport news. http://www.aci-asiapac.aero/news/main/3/. (accessed November 1, 2018.)

Blackledge, A., and Creese, A. (2017). Translanguaging and the body. *International Journal of Multilingualism*. *4*(3), 250-268.

Blommaert, J. (2013). *Ethnography, superdiversity and linguistic landscapes: Chronicles of complexity*. Bristol: Multilingual Matters.

Blommaert, J., Collins, J. and Slembrouck, S. (2005a) Spaces of multilingualism. *Language and*

Communication 25 (3), 197-216.
Brasor, P. 2018. Japan is struggling to deal with the foreign tourism boom. *The Japan Times*. https://www.japantimes.co.jp/ May 5, 2018. (accessed November 2, 2018).
Callon, M. (2001) Actor-network Theory. In N. J. Smelser and P. B. Baltes (Eds.) *International Encyclopedia of the Social & Behavioral Sciences* (pp. 62-66). Elsevier Science Ltd., Amsterdam
Callon, M. & Latour, B. (1981). Unscrewing the big leviathan: How actors macro-structure reality and how sociologists help them do so. In K. Knorr- Cetina & A.V. Cicourel (eds.) *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-Sociologies*. Boston: Routledge & Kegan Paul.
Canagarajah, S. 2018. Materializing 'competence': Perspectives From international STEM scholars. *The Modern Language Journal*, *102*(2), 268-291.
Darvin, R., & Norton, B. (2015). Identity and a model of investment in applied linguistics. *Annual Review of Applied Linguistics* 35, 36-56.
Deleuze, G. & Guattari, F. (1987). *A thousand plateaus: capitalism and schizophrenia*. Duluth, MN: University of Minnesota Press.
Duff, P. A. (2019). Social dimensions and processes in second language acquisition: Multilingual socialization in transnational contexts. *The Modern Language Journal* 103, 6-22.
Hawai'i Tourism Authority. 2017. 2017 Annual visitor research report. http://files.hawaii.gov/dbedt/visitor/visitor-research/2017-annual-visitor.pdf Honolulu.
Hokkaido rewrites 'condescending' etiquette guide targeted at Chinese tourists. The Japan Times. April 26, 2016 https://www.japantimes.co.jp/news/2016/04/26/national/hokkaido-rewrites-condescending-guide-manners-chinese-tourists/#.W-98wC2ZNAY (accessed September 10, 2018)
Gutierrez, B. 2016. Influx of tourism spurs concerns about future of Kailua. *Hawai'i News Now*. Nov 19, 2016. http://www.hawaiinewsnow.com/story/33750413/for-some-more-visitors-to-kailua-mean-more-headaches/ (accessed October 3, 2018).
Higgins, C. 2017. Space, place, and language. In S. Canagarajah (Ed.) *The Routledge handbook of migration and language* (pp. 102-116). New York: Routledge.
Jain, M. J., & Mavani, K. J. (2017). A comprehensive study of worldwide selfie-related accidental mortality: a growing problem of the modern society. *International journal of injury control and safety promotion*, *24*(4), 544-549.
Jaworski, A., & Thurlow, C. (2010). Language and the globalizing habitus of tourism: Toward a sociolinguistics of fleeting relationships. In N. Coupland (Ed.) *The handbook of language and globalization* (pp. 255-286). Oxford: Wiley-Blackwell.
Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford: Oxford University Press.
Law, J. 2009. Actor network theory and material semiotics. In B. S. Turner (ed.) *The new Blackwell companion to social theory* (pp. 141-158). Malden, MA: Blackwell.
Law, J., & Singleton, V. 2013. ANT and Politics: Working in and on the world. *Qualitative Sociology*, *36*(4), 485-502.
Lou, J. J. (2016). *The linguistic landscape of Chinatown: A sociolinguistic ethnography*. Bristol: Multilingual Matters.
Miller, E. (2014). *The language of adult immigrants: Agency in the making*. Bristol: Multilingual Matters.
Pennycook, A., & Otsuji, E. (2015). *Metrolingualism*. New York: Routledge.

Pennycook, A. 2018. Posthumanist applied linguistics. *Applied Linguistics*, 39(4): 445–461.
Pennycook, A. 2017. Translanguaging and semiotic assemblages. *International Journal of Multilingualism*, 14(3), 269-282.
Ren, C. (2010). Assembling the socio-material destination: An actor-network approach to cultural tourism studies. In G. Richards & W. Munsters (Eds.) *Cultural tourism research methods* (pp. 199-208). Oxfordshire: CABI.
Sakahara, T. 2013. Kailua neighborhood board sparks debate over tourism. Hawai'i News Now. September 10. http://www.hawaiinewsnow.com/story/23398515/kailua-neighborhood-board-sparks-debate-over-tourism/ (accessed October 5, 2018).
Scollon, R., & Scollon, S. W. (2003). *Discourses in place: Language in the material world*. New York: Routledge.
Tani, S. 2018. Where are all the tourists in Japan coming from? Chinese visitors are driving the boom, but there's much more to the story. Nikkei Asian Review. January 17, 2018 https://asia.nikkei.com/Economy/Where-are-all-the-tourists-in-Japan-coming-from (accessed October 14, 2018).
Thurlow, C., & Jaworski, A. 2014. 'Two hundred ninety-four': Remediation and multimodal performance in tourist placemaking. *Journal of Sociolinguistics*, *18*(4), 459-494.
Tsujimoto, N. 2017. The purchasing behavior of Chinese tourists at popular visiting areas in Japan. *Journal of Global Tourism Research*, 2(2), 99-104.
Urry, J. 1990. *The tourist gaze*. London: Sage.
Van der Duim, R. 2007. Tourismscapes an actor-network perspective. *Annals of Tourism Research*, *34*(4), 961-976.
Van der Duim, R., Ren, C., & Johannesson, T. (eds.) (2017). *Actor-network theory and tourism: Ordering, materiality and multiplicity*. London: Routledge.
Zhu Hua, Li Wei & Lyons, A. (2017). Polish shop(ping) as translanguaging space. *Social Semiotics*, 27:4, 411-433.