

Names | A Journal of Onomastics



Urbanonyms in Macao

Qin Xie

Macao University of Science and Technology, Macao SAR, CHINA

Francesco-Alessio Ursini

Central China Normal University, Wuhan, CHINA

Giuseppe Samo

Beijing Language and Culture University, Beijing, CHINA

ans-names.pitt.edu

ISSN: 0027-7738 (print) 1756-2279 (web)

Vol. 71 No. 1, Winter 2023

DOI 10.5195/names.2023.2421



Articles in this journal are licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).



This journal is published by [Pitt Open Library Publishing](https://open.library.pitt.edu/).

Qin Xie, et al.

Abstract

The goal of this paper is to offer an analysis of urban place names (“urbanonyms”) in Macao, China. This city has a centuries-long tradition of multi-cultural and linguistic integration, with Chinese and Portuguese representing the two oldest linguistic and cultural realities. Due to the considerable growth of Macao as a global commercial hub, English has also become an emergent *lingua franca* in this city’s territory and society. However, gazetteers, maps, and other documents reporting Macanese place names include names in Portuguese and Chinese: English names have a restricted use and status. Such a situation naturally leads to questions that pertain to the linguistic properties of these names, and to possible asymmetries in naming practices. The paper thus aims to present a detailed analysis of the Portuguese and Chinese urbanonyms and their linguistic (e.g., grammatical, lexical, and etymological) aspects, and of the emerging English toponyms. The analysis is based on data extraction and triangulation from multiple on-line and off-line gazetteers. Via this analysis, the paper also aims to account for how divergences and convergences reflect Macao’s complex toponomastic history and the role of toponomastics in multilingual contexts.

Keywords: toponyms, urbanonyms, street names, Portuguese, Chinese, Macao

Introduction

Macao is a special administrative region of China lying southwest of the Pearl River estuary (Yee 2014). This region includes a narrow peninsula stretching from the mainland Chinese province of Guangdong and two islands, Coloane and Taipa (from Cantonese *loh6 waan4* ‘Road Area’ and *tum5 zai2* ‘small lake’).¹ Taipa went from fishing village to modern Casino paradise, and hosts several universities and the international airport. Coloane, however, retains its scenic beauty and is still remote from the rest of Macao. The Macao peninsula is at times labelled as the “main island”, given its historical role and development (Neuwirth 2021). The toponym *Macao* originates from Cantonese *Ama-gao* ‘Ama Bay’: the bay hosting this region was dedicated to the patron goddess of sailors (Britannica 2020). This toponym is used interchangeably for the peninsula region and for the city comprised of peninsula and two islands. The city of Macao is a global hub with tourism, gambling, and tertiary services as the key sources of revenue (Tam 2014).

The origins of contemporary Macao represent a case of European and Asian cultures intermingling successfully. Portuguese merchants and missionaries reached this region in the 16th century, pursuing new commercial and religious markets (Souza 2005). Because of the distance from their homeland and the complexities of Macanese society, these colonising groups were forced to develop egalitarian relations with local powers (Silva 2001). By the 18th century, Macao became a commercial hub in which European and Asiatic merchants would co-exist peacefully. Macao remained a Portuguese protectorate until 1999, when China regained sovereignty under the “One Country, Two Systems” policy and oversaw an intense growth of the southern territories (Alves 2017). A Cantonese-based majority, a Portuguese-based minority, and other Asian cultures now blend into a syncretic society (Moody 2021).

Macao thus hosts an ideal multi-lingual environment (Ansaldo 2009, chap. 7). Portuguese co-exists with Cantonese as the official languages of the city, though only around 1% of citizens still speak Portuguese (Yan & Moody 2010). Other Asian languages (e.g., Hakka, Malay) are commonly spoken and Mandarin is becoming prominent, due to the increase of mainland tourists and immigrants (Choi 2021). The Makista creole is an Asian Portuguese-based creole that includes features from all Macanese heritage languages (Baxter 1996). Though Makista seems to face an uncertain future in the 21st century, its iconic role in Macanese culture is undeniable (Pinharanda Nunes 2013). English’s emergence as a *lingua franca* in the academic, tourist, and economic fields has gained momentum from the 2010s onwards (Botha & Moody 2021; Yan & Moody 2010; Moody 2008). Though English lacks an official status, its relevance in Macanese culture is increasing steadily.

A consequence of this multilingualism forms the concern of this paper. Macao is a prototypical urban environment, though it includes parks, gardens, and other nature-rich locations (Alves 2017). Its streets, squares, and points of interest reflect their history via their place names or toponyms. Toponomastics, Geography, and other disciplines assume that toponyms are names for *places*: locations in which humans perform social activities and to which they develop attachment (Cresswell 2014; Tuan 1977). As linguistic

Urbanonyms in Macao

constructs, toponyms reflect how cultures may classify places via interpretive schemas, mediated through language-specific rules (e.g., Hamzei et al. 2020; Purves et al. 2019). Furthermore, languages can partition the possible senses/functions forming a semantic field in different manners, as observed in lexical semantics studies (e.g., Georgakopoulos & Poulis 2022, 2021; Georgakopoulos 2019). Toponyms may thus reflect cultural and social differences in how languages can partition the semantic field(s) associated to classifying terms for places.

We define “Macanese toponyms” as toponyms naming places in Macao according to the Portuguese, Chinese, and English writing conventions, and suggest that they offer a test case for this hypothesis. For instance, the city’s administrative zones include seven parishes, given its Portuguese heritage, plus the Cotai administrative zone. Each parish has three toponyms, one per official language. *Nossa Senhora do Carmo* is the Portuguese toponym for the northernmost parish, and can be approximated as ‘Our lady of the Carmel (mountain)’. Its written Chinese counterpart is 嘉模聖母堂區 *gaai mou4 sing3 mou5 tong4 keoi1*, literally ‘Carmel Saint Mother Church district’. The English counterpart, *Our Lady of Mount Carmel Parish*, can be found on local street signs. Portuguese and Chinese toponyms have equal legal standing in maps and gazetteers; English names have begun to appear recently (Zhang 2009).

Several asymmetries exist across Macanese toponyms and their place classification properties. To discuss these asymmetries, however, we must define the notions of generic term and specific term (Tent 2015; Tent & Blair 2015; Blair & Tent 2011, 2021). Generic terms can classify the type of Place to which toponyms refer (e.g., *street* in *Bond Street*). Specific terms can introduce names of cultural referents which places can be named after (e.g., *Bond* in *Bond Street*). In English, toponyms for culturally salient places may lack generic terms (e.g., *London*, *Sydney*). Either linear order of these terms can be attested (e.g., *Pitt Street*, *Mount Shasta*), and liaison morphemes may also occur (e.g., preposition *of*: *Island of Wight*). In multi-lingual countries, generic and specific terms may originate in the different languages spoken in a country (e.g., Māori and English in New Zealand). They may form a single if partially redundant system (cf. Tent & Blair 2019). Toponyms therefore involve distinctive grammatical structures, within a language (Stolz et al. 2017; Nübling et al. 2015).

Let us now return to our example. First, the Portuguese toponym for this parish is obtained via privative derivation (Stolz & Warnke 2018)—i.e., via omission of the generic term *Igreja*. Second, the Cantonese toponym, rendered in Traditional Chinese characters, includes the compound generic term 堂區 *tong4 keoi1*, ‘church district’, which lacks reference to parishes as administrative units. Third, Cantonese toponyms generally include a generic term following a complex specific term (e.g., 堂區 *tong4 keoi1* preceding 嘉模聖母 *gaai mou4 sing3 mou5*. Portuguese toponyms usually present the inverse order (e.g., *Avenida doutor Sun Yat-Sen* ‘Dr. Sun Yat-Sen Avenue’). Crucially, previous works focus on the etymologies of selected street names (e.g., Lin 2002). Hence, the hypothesis that Macanese toponyms can reflect different conceptualisations via their linguistic properties remains untested.

The goal of this paper is to verify this hypothesis. We first analyse what grammatical, lexical/conceptual, and distributional differences in place classification exist in Portuguese and Chinese. We then analyse how the emerging differences in toponyms and their distribution in Macao reflect the historical roles of these languages in this society. We subsequently connect these results to an analysis of an emergent set of English toponyms for Macanese places, and how they may offer an international perspective on this city’s landscape. We achieve this goal as follows. We first offer a review of previous literature, thereby motivating our study. We then present our methodology and results, before concluding via a discussion.

Literature Review

We begin with some terminological definitions and language-specific considerations. We define “urbanonyms” as toponyms for places situated in urban environments (Ursini & Samo 2022a, 2022b; Basik 2020; Ursini & Long 2020; Seidl 2019; David 2011; Vannieuwenhuyze 2007). Since Macao is mostly an urban environment, it offers evidence on this sub-set of toponyms. Macanese urbanonyms present several peculiarities. In gazetteers, street signs, and other text documents, one can find urbanonyms according to the conventions of the Portuguese and Chinese writing systems (Cartography and Cadastre Bureau of Macau SAR 2021). English urbanonyms are slowly appearing in street signs and in on-line APPs; they follow British English spelling conventions (Yan & Lee 2014).

Chinese urbanonyms are intelligible to any speakers of Sinitic languages, since these languages share the Chinese writing system. For instance, the character 區 stands for Mandarin *qu* and Cantonese *keoi1*. The IPA transcriptions show that phonemes (i.e., /qu/ vs. /keoi/) differ, though the tone coincides (i.e., /1/). These terms are distinct words from related dialects; nevertheless, they both convey the ‘district, region’ concept.

Qin Xie, et al.

Generic and specific terms can be distinguished via semantic and phonological criteria. For instance, 廣東大道 *gwong2 dung1 daai6 dou6*, literally ‘Wide East avenue’ for ‘Guangdong avenue’ involves a prosodic break between *dung1* ‘east’ and generic *daai6 dou6* ‘avenue’. The generic term receives phrasal stress, and *gwong2 dung1* is interpreted as the bi-morphemic specific term. Generic and specific terms may therefore correspond to compound words and are written without compound markers (e.g. hyphens), thus forming multi-character written urbanonyms.

Chinese toponymics represents a well-established research tradition (e.g., Cui 1999). Within China, Mandarin is the official language in which toponyms are registered (Pang et al. 2010). Mandarin toponyms mostly follow two grammatical patterns. Macro-toponyms usually involve the combination of two or more words that may refer to relevant aspects of the named place (e.g., 廣東 *gwong2 dung1*, literally ‘Wide East’, in English *Guangdong*). Though compound forms are more frequent, simple specific terms are also attested (e.g., 竹里 *zuk1 lei5*, literally ‘Zuk street’, *zuk1* being the specific term). Micro-toponyms may include generic terms classifying the place being named (e.g., 港澳大道 *gong2 ou3 daai6 dou6* ‘Hong Kong Macao Avenue’, where one of the authors lives). Local dialects and languages acted as borrowing substrates to Mandarin (Qian et al. 2016; Cao 2008). Borrowing of generic terms seems facilitated because Sinitic languages/dialects share symmetrical structures for noun phrases and proper names (Xu & Fu 2015: chap. 1). In the Guangdong province that includes Macao, Cantonese, Hakka, Tai and Zhuang have acted as substrates for toponyms (Wang et al. 2012; Situ 2001, 1992). Hence, toponyms in Guangdong may have distinct oral forms but written forms in both the traditional and simplified systems.

Portuguese-based toponyms present a different picture, partly due to the diasporic nature of Portuguese. Grammar-wise, Portuguese toponyms tend to involve four structure types (Lima 2012; Carvalhinhos 2009, 1998). The first type involves the direct combination of generic and specific term (e.g., *Rua Grande* ‘Main Street’); the second type involves the inverse order (e.g., *Bela Vista* ‘Beautiful View’). Bare specific terms represent a third type (e.g., *Lisboa, Oporto*), though opaque forms of suffixation can sometimes still be found (e.g., *Oliv-eira* ‘Olive-place’ [Lima 2012, 130]). Complex forms often involving liaison *de* or other prepositions form a fourth type (e.g., the Macanese *Nossa Senhora do Carmo*). Works on toponyms from Brazil (Dick 2002, 1998) and other Lusophone countries (e.g., São Tomé and Príncipe) also abound (e.g., Balduino, de Araujo & Agostinho 2021). Local cultures and languages have contributed toponyms in each country (e.g., *Ipanema* from the Tupi language), including generic terms (e.g., *mato* ‘field’ in Brazil, from the Arakawan language). Thus, one may expect that Macanese Portuguese toponyms may follow similar patterns.

In general, toponyms may originate in cultures that once thrived in certain places. By definition, they can act as “cultural signposts” for these cultures (Hanks 2011, 306–307; Gelling 1988; Whittlesey 1929). Previous studies on Macanese street names in the main island seem to support this perspective. Until 1869, most street names were monolingual: each community would have names for their respective places (Cheong 2003; Lin 2002). Bilingual street names began to appear over time, but only in 1969 a policy of bilingual signs became the administrative norm (Zhang 2009; Huang 2005). For instance, the street name 龍鬚街 *lung4 sou1 gaai1* ‘Dragon Beard Street’ referred to the palmetto leaves on top of a local church that look like a dragon’s beard. Local Chinese citizens misinterpreted the name as 龍嵩街 *lung4 sung1 gaai1* ‘Tarragon Street’ because of the similar pronunciation of the two Chinese characters 鬚 *sou1* ‘dragon’ and 嵩 *sung1* ‘beard’. The Portuguese government introduced the name *Rua Central* ‘Central Street’ in 1848, given its location in Macao’s old central area.

Overall, Portuguese and Chinese communities used their own street names, though the advent of bilingual street signs officially “bound” these street names to the same streets. Furthermore, English street names appeared in the central districts/parishes as calques from their Portuguese counterparts, in their lexical content and grammatical form (IACM 2012; Cheng 2009). For instance, English-based street signs report *Central Street* as the official name for *Rua Central*. They apparently do not represent a local, official culture like their Portuguese and Chinese counterparts. However, they make these cultures partially accessible to tourists (Yan & Lee 2014; Chen 2011). Furthermore, studies on other urbanonym types beyond street names and beyond the main island are outstanding, along with their grammatical, conceptual/lexical and geo-distributional properties. Therefore, it is still unclear how eventual differences may reflect the role of Portuguese and Chinese cultures in naming Macanese places.

Methodology

Our methodology for data extraction followed a three-step procedure. In the first step, one researcher extracted Macao's urbanonyms from the online gazetteer OpenStreetMap (OSM. [OpenStreetMap. https://www.openstreetmap.org/](https://www.openstreetmap.org/)). The researcher accessed the text database that the website uses for the map, extracted token names in Chinese and Portuguese, and prepared the resulting file for further analysis. In the second step, two researchers compared the data from OSM with the data from the off-line CD-ROM gazetteer CD-ROM de Carta-Base (2021). OSM can reach a resolution of 1:1,000 for the whole Macao territory; the CD-ROM resolution is 1:3,000.

We had two goals in completing these first two steps. The first goal was to attempt a form of triangulation: we used two slightly different methods and sources to analyse the data set (Damico & Tetnowski 2014; Rothbauer 2008). Thus, via the first step we created a first list of tokens; via the second step, a second list of tokens. We then verified that the two lists would match on a one-to-one basis. Since this was the case, we achieved our triangulation goal. The second goal was to verify the location of the urbanonyms and the places they name on the maps. The CD-ROM partitions Macao's territory in 30 non-overlapping sections and includes a street directory, whereas OSM offers dynamic, non-partitioned maps. We thus verified that each token in the list(s) could be found on the Macao map.

In the third step, we consulted the “澳門網上地圖 *ou3 mun4 mong5 soeng6 dei6 tou4*/Mapa On-line de Macau” government APP (‘on-line Map of Macao’: <https://webmap.gis.gov.mo/InetGIS/eng/index.html>). The map APP includes information about Points of Interest (POIs) apparently not included in OSM, and interfaces in Traditional and Simplified Chinese characters. For POIs, the APP reports Portuguese, Chinese, and English names. Instead, OSM and CD-ROM only include Portuguese and Chinese urbanonyms. Therefore, for the English data, the APP sheds light on the naming procedures for POIs and touristic attractions. Though it was not possible to use a query code to extract the list of POIs and their urbanonyms, one researcher prepared the tokens list by manually copying and pasting the place type-specific lists from the APP (e.g., the “casinos” list). Once we completed data extraction, we prepared two excel files for data analysis. The files reported the list of all token names in the maps, the list of all attested generic terms, and eventual notes regarding each token (see the supplementary files to this paper).

Once the token lists were completed, we operated the analysis of the results in four steps. First, for the OSM/CD-ROM data, we compared urbanonyms across Portuguese and Chinese on a single place basis, to analyse asymmetries in their specific terms. For instance, we analysed if the one of the key avenues in Macao would commemorate 孫逸仙 *syun1 jat6 sin1* (Cantonese and English names: *Dr. Sun Yat-Sen*), a leading Chinese figure, via its Portuguese and Chinese names. These differences were marked for further analysis. Second, we compiled lists of generic terms emerging from the tokens in order to analyse the generic terms inventory of each language, and their conceptual/lexical asymmetries. Again, we marked eventual asymmetries for further analysis. Third, we analysed the distribution of asymmetric urbanonyms and developed maps marking the places connected to these asymmetries. Fourth, for the APP data, we analysed the generic terms in each of the three languages, and marked eventual asymmetries as in the OSM/CD-ROM data.

Results

We analysed a total of 1,394 tokens for Portuguese and Chinese, as extracted from OSM and the CD-ROM. We then analysed 235 tokens for POIs, as extracted from the government APP: we have a total of $1,394+235=1,629$ tokens. The analysis of the APP data confirmed that only POIs have English names in this gazetteer. The Portuguese and Chinese tokens offered us three types of novel empirical evidence. First, the grammatical structures attested in each language's system of urbanonyms confirm apparently rare patterns. Second, asymmetries exist among Portuguese and Chinese with respect to the conceptual/lexical content of specific and generic terms. Third, the distribution of these asymmetries is highest in Macao's main island, though Taipa and Coloane also include several cases. The English tokens offered us a fourth type of evidence of novel naming patterns for internationalization purposes. We discuss the results in this order.

First, partitive structures in Portuguese and compound generic terms in Chinese are rather common, as Table 1 shows. For Portuguese urbanonyms, we present the tokens for the two possible structures (i.e., partitive or with liaison *de*; non-partitive or without this preposition). For Chinese urbanonyms, we offer the number of

Qin Xie, et al.

compound generic terms as types, and the percentage of tokens including one of these 37 types (i.e., 66.04%=920 tokens):

Table 1: Grammatical structures in attested urbanonyms (numbers are from the group of 1,394 tokens)

Portuguese		
Configuration	Frequency (tokens)	%
Partitive	1,153	82.72
Non-partitive	241	17.28
Chinese		
Frequency (types)		
Non-compound	35	66.04
Compound	18	33.96

For European Portuguese toponyms, Lima (2012, 120–122) suggests that partitive structures are relatively rare. The Macanese data present the opposite tendency, though not necessarily a fact specific to this city. For Chinese, Pang et al. (2010) observe that compound generic terms tend to mostly correlate with urban places. Examples frequently attested in our sample are 圓形地 *jyun4 jing4 dei6* ‘roundabout’, literally ‘round shape place’; 前地 *cin4 dei6* ‘square’, literally ‘front place’. Recall also that compound generic terms restrict reference to sub-classes of places. For instance, 馬路 *maa5 lou6*, literally ‘horse road’, can occur as a generic term in urbanonyms for avenues in Chinese cities. Its etymology is debated: it is considered either a term referring to engineer John MacAdams, or to avenues’ original transit function (cf. <https://www.zdic.net/hans/%E9%A9%AC%E8%B7%AF>). Its status as a compound term is however clear. Overall, Macanese Portuguese and Chinese urbanonyms offer novel evidence for some of the less frequently attested structures in these languages’ toponymic grammars.

Second, we found that the 1,394 tokens could be divided according to asymmetries in their specific terms, their etymological roots and spelling. We identified three patterns in the data, which we simply label “type 1”, “type 2”, “type 3”. We illustrate these patterns via Table 2 (raw frequencies and distributions of types and tokens are again based on the first group):

Table 2: Specific terms classified and related by considering Chinese characters as the target language and Portuguese as the source language.

Urban Names (Chinese < Portuguese)	Tokens distributions %
Type 1	58.50
Type 2	11.33
Type 3	30.17

In type 1 tokens, the specific terms in Portuguese and Chinese are near-equivalent. For instance, Portuguese *Avenida doutor Sun Yat-Sen* and Chinese 孫逸仙博士大馬路 *syun1 jat6 sin1 bok3 si6 daai6 maa5 lou6* are symmetrical urbanonyms involving eponymous reference to China’s historical figure. Type 2 tokens, instead, involve some form of abbreviation of the specific term in the Chinese urbanonyms. For instance, while Portuguese *Rua Governador Tamagnini Barbosa* includes the full name of a Portuguese historical figure, its Chinese counterpart only includes the figure’s surname as a specific term (i.e., *Barbosa*). We thus have 巴波沙總督街 *baa1 bo1 saa1 zung2 duk1 gaai1*. Similarly, the counterpart of Portuguese *Avenida do Infante D. Henrique* is 殷皇子大馬路 *jan1 wong4 zi2 daai6 maa5 lou6*. This is the Chinese name of the infant prince, which literally translates as ‘Jan Prince big horse road’.

Type 3 tokens include cases in urbanonyms include different specific terms across the two languages. This category includes cases in which both generic and specific terms are different (e.g., *Andro de S. Lázaro* and its counterpart 聖母堂前地 *sing3 mou5 tong4 cin4 dei6*, ‘Saint Mother Church front place’). It also includes cases in which only the specific terms are truly asymmetrical (e.g., *Avenida do Conselheiro Ferreira de Almeida* vs. 荷蘭園大馬路 *ho4 laan4 jyun4 daai6 maa5 lou6* ‘Holland garden big horse road’). Crucially, previous works have mostly investigated type 3 tokens, linking them to the main island (e.g., Cheng 2009; Cheong 2003; Lin 2002). Our findings thus paint a more nuanced picture: first, however, we discuss asymmetries in generic terms.

Urbanonyms in Macao

We found 37 Chinese generic terms and 40 Portuguese generic terms. Chinese terms displayed multiple senses, so we found 62 relations between Chinese and Portuguese terms. We clarify this aspect by taking Chinese semantic types as the main object of investigation.² These relations followed two patterns. First, some generic terms are in a one-to-one relation, and classify places via similar though not identical concepts. For instance, one can find Portuguese *adro* for ‘churchyards’, but the term 前地 *cin4 dei6* ‘square’ is attested in Chinese for urbanonyms naming these places. Second, some generic terms are instead in a many-to-one relationship. For instance, Portuguese urbanonyms for avenues only include the term *avenida*. Chinese urbanonyms, instead, feature four near-synonymous terms: 大馬路 *daai6 maa5 lou6* ‘big horse road’ 馬路 *maa5 lou6* ‘horse road’, 大道 *daai5 dou6* ‘big way’, and 路 *lou6* ‘road’. Table 3 summarises the data:

Table 3: Chinese and Portuguese generic terms, and their attested relations.

Chinese	Portuguese
前地 <i>cin4 dei6</i> ‘front place’	<i>Adro</i> ‘churchyard’
廣場 <i>gwong2 coeng4</i> ‘wide square’	<i>Alameda</i> ‘shopping avenue’
大道 <i>daai5 dou6</i> ‘big way’; 路 <i>lou6</i> ‘road’; 馬路 <i>maa5 lou6</i> ‘horse road’; 大馬路 <i>daai6 maa5 lou6</i> ‘big horse road’	<i>Avenida</i> ‘avenue’
街 <i>gaa1</i> ‘street’; 圍 <i>wai4</i> ‘patio’	<i>Azinhaga</i> ‘lane’
里 <i>lei5</i> ‘neighborhood’; 社 <i>se5</i> ‘association’	<i>Beco</i> ‘alley’
斜巷 <i>ce4 hong6</i> ‘inclined alley’; 斜路 <i>ce4 lou6</i> ‘inclined road’	<i>Calçada</i> ‘sidewalk’
古道 <i>gu2 dou6</i> ‘ancient path’; 路 <i>lou6</i> ‘road’	<i>Caminho</i> ‘pathway’
徑 <i>ging3</i> ‘path’	<i>Circuito</i> ‘track’
專道 <i>zyun1 dou6</i> ‘specialized way’	<i>Corredor</i> ‘corridor’
石級 <i>sek6 kap1</i> ‘stone steps’; 梯 <i>tai1</i> ‘stairs’	<i>Escada</i> ‘stairs, steps’
石級 <i>sek6 kap1</i> ‘stone steps’	<i>Escadaria</i> ‘stairs’
馬路 <i>maa5 lou6</i> ‘horse road’; 公路 <i>gung1 lou6</i> ‘public road’; 路 <i>lou6</i> ‘road’	<i>Estrada</i> ‘road’
土腰 <i>tou2 jiu1</i> ‘earth waist’; 馬路 <i>maa5 lou6</i> ‘horse road’	<i>Istmo</i> ‘Isthmus’
前地 <i>cin4 dei6</i> ‘front place’	<i>Largo</i> ‘wide square’
系統 <i>hai6 tung2</i> ‘system’	<i>Ligação</i> ‘connection’
眺望台 <i>tiu3 mong6 toi4</i> ‘observing platform’	<i>Miradouro</i> ‘panoramic way’
坡 <i>bo1</i> ‘slope’	<i>O Declive</i> ‘The slope’
走廊 <i>zau2 long4</i> ‘corridor’	<i>Obra</i> ‘workway’
大馬路 <i>daai6 maa5 lou6</i> ‘big horse road’	<i>Lopo</i> ‘small alley’ (literally ‘wolf’)
天橋 <i>tin1 kiu4</i> ‘sky bridge’	<i>Passagem</i> ‘Passage’
(西/東) 圍 <i>wai4</i> ‘patio’; 台 <i>toi4</i> ‘platform’	<i>Patio</i> ‘patio’
徑 <i>ging3</i> ‘path’	<i>Pista</i> ‘track’
碼頭 <i>maa5 tau4</i> ‘pier’; 大橋 <i>daai6 kiu4</i> ‘big bridge’; 專用橋 <i>zyun1 jung6 kiu4</i> ‘special use bridge’	<i>Ponte</i> ‘bridge’
前地 <i>cin4 dei6</i> ‘front place’; 廣場 <i>gwong2 coeng4</i> ‘wide square’; 市場 <i>si5 coeng4</i> ‘market’; 口 <i>hau2</i> ‘mouth’	<i>Praça</i> ‘square’
前地 <i>cin4 dei6</i> ‘front place’; 廣場 <i>gwong2 coeng4</i> ‘wide square’; 花園 <i>faa1 jyun4</i> ‘flower garden’	<i>Praçeta</i> ‘small/cute square’

Qin Xie, et al.

路 <i>lou6</i> 'road'	<i>Ramal</i> 'branch' (i.e., secondary street)
街 <i>gaai1</i> 'street'; 路 <i>lou6</i> 'road'	<i>Rua</i> 'street'
斜坡 <i>ce4 bo1</i> 'slanting slope'	<i>Rampa</i> 'ramp'
系統 <i>hai6 tung2</i> 'system'	<i>Rede</i> 'network'
圓形地 <i>yun4 jing4 dei6</i> 'round shape place'	<i>Rotunda</i> 'roundabout'
車道 <i>ce1 dou6</i> 'vehicle path'	<i>Tabuleiro</i> 'board, boarding place'
露台 <i>lou6 toi4</i> 'gazebo'	<i>Terraço</i> 'Terrace'
巷 <i>hong6</i> 'alley'; 間 <i>gaan1</i> 'room'	<i>Travessa</i> 'crossroad'
徑 <i>ging3</i> 'path'	<i>Trilha</i> 'footpath'
徑 <i>ging3</i> 'path'	<i>Trilho</i> 'railway'
隧道 <i>seoi6 dou6</i> 'tunnel'	<i>Túnel</i> 'tunnel'
路 <i>lou6</i> 'road'	<i>Variante</i> 'variant' (i.e., alternative street)
道 <i>dou6</i> 'way'	<i>Via</i> 'way'
天橋 <i>tin1 kiu4</i> 'sky bridge'	<i>Viaduto</i> 'viaduct'
道 <i>dou6</i> 'way'	<i>Vias</i> 'way'
徑 <i>ging3</i> 'path'	<i>Zona</i> 'zone'

English glosses may render sense relations partially opaque. Nevertheless, it is clear that Chinese generic terms have multiple, distinct senses, compared to their Portuguese counterparts. For instance, *ponte* 'bridge' finds three counterparts in Chinese: 碼頭 *maa5 tau4* 'pier' (for bridges near piers), 大橋 *daai6 kiu4* 'big bridge' and 專用橋 *zyun1 jung6 kiu4* 'special use bridge' (self-explanatory). In these cases, Portuguese terms seem to act as conceptual hyperonym-like terms to their Chinese counterparts, which in turn act as hyponym-like terms. Furthermore, some Chinese generic terms enter "many-to-many" relations with Portuguese generic terms, possibly due to their multiple senses. Thus, 路 *lou6* 'road' can correspond to Portuguese *avenida* 'avenue', *rua* 'street', *caminho* 'pathway', and *estrada* 'road'. We did not find other cases of multiply-realized relations: we do not explore this pattern further.

Conceptual and lexical differences can take nuanced expressions. For instance, the *adro* 'churchyard' vs. 前地 *cin4 dei6* 'front place' contrast suggests that the Chinese term classifies these places via their geometrical properties; the Portuguese one, via their social functions. However, Chinese 里 *lei5* seems to describe the social functions of alleys as "connecting places" for neighbourhoods; Portuguese *beco* refers to alleys as types of secondary streets. Overall, these divergences suggest that culture-specific patterns on places classification may surface in the use of Macanese generic terms and their lexical content (cf. Hamzei et al. 2020). Such perspectives may also have influenced how stakeholders decided to classify places via related terms, as the "many-to-one" cases suggest. Further evidence supporting this analysis can be gleaned via the POIs data: though, we first address the distributional results.

The third result is as follows. We verified the geographical distribution of type 3 tokens (i.e. urbanonyms with different specific terms from Portuguese to Chinese). Our results confirm that the distribution of type 3 tokens is not limited to the main island's places, but also involves Taipa and Coloane. We illustrate these results via Figure 1:

Urbanonyms in Macao

Figure 1: The distributions of all type 1 and type 2 (left panel) and type 3 (right panel) Created 05.27.2022 with *Google My Maps* <https://mymaps.google.com>, by importing two .csv files containing all the manually analyzed addresses.



The Peninsula de Macau (澳門半島 *ou3 mun4 bun3 dou2*—i.e., the main island) hosts 74% of the retrieved tokens, Taipa (氹仔 *tum5 zai2*) 15%, and Coloane (路環 *lou6 waan4*) 11%. Figure 1 thus shows that most type 3 tokens correspond to streets in the main island, which includes a higher number and density of tokens, possibly due to its older origins. One example is 白馬行 *baak22 maa23 hong21* ‘White Horse Company’, the name for the first concrete street in the main island. The first name referred to the nearby hospital, but the local residents found the reference too ominous. The Portuguese government decided to name this street *Rua de Pedro Nolasco da Silva* in June 1869, in honour of the director of the then Public Affairs Bureau. Thus, different commemorative patterns lead to the birth of these asymmetries. The Chinese community often focused on the local history and relations of places to bestow names; the Portuguese community on historical figures, authorities, and events (cf. also Zhang 2009; Huang 2005).

The English data are our fourth result. The 235 tokens extracted from the APP displayed two key features. First, these tokens were not directly accessible from OSM’s directory of places. The CD-ROM included most of these tokens, but as part of a distinct POI directory not including English forms. Consequently, this list of urbanonyms seems to complement the one not including English tokens. Second, all tokens were calques from the language that provided the official or most widely known name. Thus, specific terms involved near-identical forms across English, Portuguese, and Chinese (e.g., *Templo de A-Má*, *A-Má Temple*, 媽閣廟 *maa5 gok3 miu6*). Given this formation pattern and the fact that POIs are not included in the other set, the 22 generic terms in Table 4 are the only ones in English (tokens in brackets):

Qin Xie, et al.

Table 4: English generic terms, and their Portuguese and Chinese counterparts.

English (tokens)	Portuguese	Chinese
<i>Casino</i> (39)	<i>Casino</i>	酒店 <i>zau2 dim3</i> 'hotel'
<i>Temple</i> (30)	<i>Templo</i>	閣 <i>gok3</i> (廟 <i>miu6</i>) 'pavilion (temple)'
<i>Leisure Area</i> (75)	<i>Zona de Lazer</i>	休憩區 <i>jau1 hei3 keoi1</i> 'rest area'
<i>Church</i> (9)	<i>Igreja</i>	堂 <i>tong4</i> 'hall'
<i>Library</i> (21)	<i>Biblioteca</i>	圖書館 <i>tou4 syu1gun2</i> 'library'
<i>Cultural Village</i> (1)	<i>Aldeia Cultural</i>	村 <i>cyun1</i> 'village'
<i>Pavilion</i> (1)	<i>Pavilhão</i>	熊貓館 <i>hung4 maau1 gun2</i> 'panda house', 動物館 <i>dung6 mat6 gun2</i> 'zoo'
<i>Convention & Entertainment Centre</i> (1)	<i>Centro de Convenções e Entretenimento</i>	中心 <i>zung1 sam1</i> 'centre'
<i>Ecumenical Centre</i> (1)	<i>Centro Ecuménico</i>	苑 <i>jyun2</i> 'garden'
<i>Cultural Centre</i> (1)	<i>Centro Cultural</i>	中心 <i>zung1 sam1</i> 'centre'
<i>Wharf</i> (1)	<i>Doca</i>	碼頭 <i>maa5 tau4</i> 'pier'
<i>Bronze statue</i> (1)	<i>Monumento</i> 'Monument'	銅像 <i>tung4 zoeng6</i> 'bronze statue'
<i>Square</i> (1)	<i>A Praça</i> 'The Square'	廣場 <i>gwong2 coeng4</i> 'wide square'
<i>Building</i> (3)	<i>Edifício</i>	局 <i>guk6</i> 'bureau'
<i>Archives</i> (1)	<i>Arquivo</i>	檔案館 <i>dong2 on3 gun2</i> 'archives'
<i>Mosque and Cemetery</i> (1)	<i>Mesquita e Cemitério</i>	寺 <i>zi6</i> , 墳場 <i>fan4 coeng4</i> 'temple, cemetery'
<i>Gate</i> (1)	<i>Portas</i>	關關 <i>gwaan1 zaap6</i> 'border gate'
<i>Fortress</i> (8)	<i>Fortaleza</i>	炮台 <i>paau3 toi4</i> 'fortress', 教堂 <i>gaau3 tong4</i> 'church' 燈塔 <i>dang1 taap3</i> 'lighthouse'
<i>Park</i> (3)	<i>Parque</i>	公園 <i>gung1 jyun4</i> 'public garden'
<i>Corridor</i> (2)	<i>Acesso</i>	迴廊 <i>wui4 long4</i> 'corridor'
<i>Museum</i> (26)	<i>Museu</i>	博物館 <i>bok3 mat6 gun2</i> 'museum'
<i>Square</i> (9)	<i>Largo</i>	前地 <i>cin4 dei6</i> 'front place'

As table 4 suggests, stakeholders probably coined English urbanonyms with the purpose of preserving the cultural connotations associated to the original names. Since 媽閣廟 *maa5 gok3 miu6* 'A-Má temple' is the original urbanonym for this important place, the Portuguese and English counterparts are respectively *Templo de A-Má* and *A-Má Temple*. In some cases, only one token is attested. For instance, though Macao has hundreds of squares and urbanonyms including the terms *Praça/Largo* (Portuguese) and 廣場 *gwong2 coeng4* (Chinese), only one square has an official English name. Asymmetries for specific terms mostly belong to the type 2 pattern: English urbanonyms may involve shorter forms than their counterparts (e.g., *Camões Square* for *Praça de Luís de Camões*). These, however, formed 3.4% of the total tokens (i.e., 8 tokens): most English urbanonyms closely match their Portuguese and Chinese counterparts.

Note that except for *Largo/A Praça* and their Chinese counterparts, all the generic terms in POIs are distinct from the lists discussed in Table 3. We thus have 37+21=58 generic terms for Chinese, and 40+21=61 generic terms for Portuguese. For this sub-set, the relation among generic terms is always a one-to-one relation,

Urbanonyms in Macao

probably because these urbanonyms name POIs as places with distinctive characteristics (e.g., *Wharf* vs. *Doca* vs. 碼頭 *maa5 tau4*). Overall, we have achieved our goal: an analysis of Macanese urbanonyms, and how they classify place types in Macao according to language-specific patterns.

Discussion

We believe that four points emerge from our results that deserve further discussion. First, Macao represents a case of a bilingual toponomastic system. Two neighbouring cities with similar historical trajectories can help us to illustrate this point: Hong Kong, the other Chinese SAR, and Singapore. In Hong Kong, Chinese and English urbanonyms co-exist in a system similar to the Macanese one (Choi 2021). However, even in regions which have seen drastic development after the unification (i.e., the “New Territories”), urbanonyms tend to include different specific terms and commemorative patterns, in English and Chinese. In Singapore, urbanonyms often include combinations of generic and specific terms from each heritage language (e.g., Malay, English, Cantonese, Hakka [Cavallaro et al. 2019]). Macao seems to represent a distinctive case of parallel, commensurable toponym systems co-existing via complex historical and geographical relations.

Second, Portuguese urbanonyms in Macao realise the grammatical structures attested in European Portuguese, which are similar to those found in other European languages (cf. Köhnlein 2015; Carvalhinhos 1998). Chinese urbanonyms in Macao also realise the structures attested in other Chinese urbanonyms (cf. Pang et al. 2010; Cui 1999). These results show that Macanese urbanonyms include partitive structures in Portuguese and compound generic terms in Chinese. They therefore confirm the relevance of these structures within Portuguese and Chinese toponomastic grammars.

Third, Portuguese and Chinese generic terms classify places via different senses, which reflect different cultural conceptions of the place being named. Again, many-to-one relations suggest that Chinese terms partition semantic fields for place terms via near-synonyms (e.g., 街 *gai1* ‘street’ and 路 *lou6* ‘road’), whereas Portuguese may include only one term for one field (e.g., *rua*). These generic terms also offer evidence on the subtle lexical relations connecting generic terms and toponyms in a language (cf. Rezsegi 2020a, b). Our findings thus seem to confirm a general result from lexical semantics research (e.g., Georgakopoulos 2019). Cultural and social forces operating on languages’ lexica can influence how near-similar senses/functions forming a semantic field can be organised via different lexical items.

Fourth, the distribution of asymmetric specific terms confirms and expands previous results on the historical roots of urbanonyms in Macao (e.g., Cheng 2009; Zhang 2009; Huang 2005; Lin 2002). Our maps show that the main island contains the highest degree of urbanonyms with asymmetric specific terms and thus divergent histories for these places. As the main island is also the part of Macao with the longest history of development, this asymmetry is not surprising. Taipa and Coloane represent parts of Macao with newer, more convergent histories, though both parts also include asymmetrical names. This fact indirectly suggests that the histories of Macanese communities are converging and co-existing, as reflected in “newer” place names. Our novel finding lies in showing that such historical (a)symmetries translate into geographical (a)symmetries, when one looks at urbanonyms as a type of toponyms.

Conclusions

This paper has offered an analysis of the urban place names (urbanonyms) in Macao, China. The paper has shown that Portuguese and Cantonese, as the heritage written languages of Macao, have developed urbanonym systems that reflect the at-times deeply asymmetrical and historically complex relations with Macao. The emerging English data confirm that the 21st century Macao environment is one that welcomes tourists and other international citizens. If Portuguese and Chinese link Macao and its places’ pasts to its present, then English links this present to a future in which Macao exists as a globally projected place. The paper has shown that these differences are attested at a conceptual/lexical, distributional, and grammatical level. The paper has thus introduced a methodology that may permit researchers to explore how different toponym systems being bound to the same multi-lingual places can be studied and compared. We leave such applications to further endeavours, however.

Qin Xie, et al.

Notes

¹ Throughout the paper, we use the term “Cantonese” for the language/dialect spoken in the Guangdong province of China and neighbouring provinces. There are four different Cantonese transcription schemes: LSHK, Yale, Yale Orthodox, Sydney Lau. Cantonese and Portuguese are the two official languages used in Macao. Hence, the LSHK (Linguistic Society of Hong Kong) or “Jyutping” scheme will be used to describe the Cantonese pronunciation for all the Macanese toponyms (<https://jyutping.org/en/jyutping/>). Numbers following transliterations (e.g., *gaai*) thus represent tones. “Chinese”, as also clarified in the main text, is a label we use for the written system that Cantonese and other Sinitic languages employ.

² For Chinese, we only considered as generic terms those that would describe the geometrical, physical properties, or social, urban functions of a place (e.g., 廣場 *gwong2 coeng4* ‘wide square’ and 公路 *gung1 lou6* ‘public road’, respectively). We did not count cases such as 橫街 *waang4 gaai1* ‘horizontal street’ as being generic terms because they would refer to places via their spatial position relative to another place. See, however, the main text for 前地 *cin4 dei6* ‘front place’.

Bibliography

- Alves, Raquel Ferreira. 2017. “Macao Special Administrative Region of People’s Republic of China Jurisdiction.” *GlobaLEX*. Accessed June 30, 2022. <http://www.nyulawglobal.org/globalex/Macao.html>
- Ansaldo, Umberto. 2009. *Contact Languages: Ecology and Evolution*. Cambridge: Cambridge University Press.
- Balduino, Amanda M., Gabriel A. de Araujo, and Ana Livia Agostinho. 2021. “A toponímia de São Tomé e Príncipe.” [The toponymy of São Tomé e Príncipe]. *Acta Scientiarum. Language and Culture* 43, no. 2: e56485. <https://doi.org/10.4025/actascilangcult.v43i2.56485>
- Basik, Sergei. 2021. “Urban Place Names: Introduction.” *Urban Sciences* 4, no. 80: 1–3. <https://doi.org/10.3390/urbansci4040080>
- Baxter, Alan N. 1996. “Portuguese and Creole Portuguese in the Pacific and Western Pacific Rim.” *Atlas of Languages of Intercultural Communication in the Pacific, Asia and the Americas* Vol. II.1. Edited by Stephen A. Wurm, Peter Mühlhäusler, and Darrel T. Tryon. Berlin: Mouton de Gruyter, 299–338.
- Blair, David and Jan Tent. 2015. *Feature Terms for Australian Toponymy*. ANPS Technical Paper. No. 3. New South Wales: Placenames Australia Inc. Accessed June 30, 2022. <https://www.anps.org.au/upload/ANPSTechPaper3.pdf>
- Blair, David and Jan Tent. 2021. “A Revised Typology of Place Names.” *Names* 69, no. 4: 1–15. <https://doi.org/10.5195/names.2021.2260>
- Encyclopedia Britannica. 2020. “Macao”. Accessed June 30, 2022. <https://www.britannica.com/place/Macao-administrative-region-China>
- Botha, Werner, and Andrew Moody. 2021. “English in Macau.” *The Handbook of Asian Englishes*. Edited by Kingsley Bolton, Werner Botha, and Andrew Kirkpatrick, 529–546. Hoboken, NJ, USA: John Wiley & Sons.
- Cartography and Cadastre Bureau of Macau SAR. 2022. 澳門網上地圖 ou3 mun4 mong5 soeng6 dei6 tou4/Mapa On-line de Macau [on-line Map of Macau]. Accessed 31 May 2022. <https://web-map.gis.gov.mo/InetGIS/eng/index.html>
- Cartography and Cadastre Bureau of Macau SAR. 2021. 澳門特別行政區數碼化地圖唯讀光碟 (A類/CD-ROM de Carta-base (Tipo A) da Região Administrativa Especial de Macau [CD-ROM of the paper version (type A) of the Special Administrative Region of Macau]. 澳門特別行政區政府地圖繪製暨地籍/Macau: Direcção dos Serviços de Cartografia e Cadastro.
- Cao, Zhiyun. 2008. *漢語方言地圖集* [Linguistic Atlas of Chinese Dialects]. Beijing: The Commercial Press.
- Carvalhinhos, Patrícia de Jesus. 1998. “A toponímia portuguesa: um recorte linguístico do Douro ao Tejo.” [Portuguese toponymy: a linguistic record of Douro ao Tejo]. Ph.D. Thesis, Universidade de São Paulo.

Urbanonyms in Macao

- Carvalhinhos, Patricia de Jesus. 2009. "Variantes Lexicais na Toponímia Portuguesa: os Elementos Genéricos (Entidades Geográficas) Denominados. Estudo de Caso: Diferenças Terminológicas entre Português do Brasil e Português Europeu." [Lexical variants in Portuguese toponymy: generic terms (geographical entities) denominated. study of a case: terminological differences between Brazilian and European Portuguese]. *Cadernos do CNLF*, no. 11: 177–194.
- Cavallaro, Francesco, Francesco Perono Cacciafoco, and Zhi Xuan Tan. 2019. "Sequent Occupance and Toponymy in Singapore: The Diachronic and Synchronic Development of Urban Place Names." *Urban Sciences* no. 3, 98: 1–18. <https://doi.org/10.3390/urbansci3030098>
- Chen, Sandy C. 2011. "Residents' Perceptions of the Impact of Major Annual Tourism Events in Macao: Cluster Analysis." *Journal of Convention and Event Tourism* 12, no. 2: 106–128.
- Cheong, Cheok K. 2003. "The Street Signs of Macao." Master Thesis, The University of Hong Kong.
- Choi, Tae-Hee. 2021. "Language Policies and Linguistic Ecology in Hong Kong and Macau". *Multilingual China*. Edited by Vincent Kan and Choi Tae-hee. London: Routledge, 1–13.
- Cresswell, Tim. 2014. *Place: An Introduction*. 2nd ed. London: Wiley Blackwell.
- Cui Ni-Fun, ed. 1999. *Zhonghua Renmin Gongheguo Diming Dacidian* [Mega-dictionary of toponyms of People's Republic of China]. Beijing: Commercial Press.
- Damico, Jack and John Tetnowski. 2014. "Triangulation." *Encyclopedia of Social Deviances*. Edited by Craig Forsyth and Health Copes. Riverside, CA: Sage Publications, 709–721.
- David, Jaroslav. 2011. "Commemorative Place Names – Their Specificity and Problems." *Names* 59, no. 4: 214–228.
- Dick, Maria Vicentina de Paula do Amaral. 1998. "Atlas Toponímico: um estudo dialetológico." [Toponymic Atlas: a Dialectological Study]. *Revista Philologus* 10, no. 1: 61–69.
- Dick, Maria Vicentina de Paula do Amaral. 2002. "Aspectos de Etnolingüística– a Toponímia Carioca e Paulistana – Contrastes e Confrontos." [Aspects of ethnolinguistics – Carioca and Paulista toponymy – contrasts and comparisons]. *Revista USP* 56, no. 1: 180–191.
- Gelling, Margaret. 1988. *Signposts to the Past: Place-names and the History of England*. Chichester: Phillimore.
- Georgakopoulos, Thanasis. 2019. "Semantic Maps." *Oxford Bibliographies in Linguistics*. Edited by Mark Aronoff, nn. pp. New York: Oxford University Press. <https://doi.org/10.1093/OBO/9780199772810-0229>
- Georgakopoulos Thanasis and Stéphane Polis. 2021. "Lexical Diachronic Semantic Maps. The Diachrony of Time-Related Lexemes". *Journal of Historical Linguistics* 11, no. 3: 367–420.
- Georgakopoulos, Thanasis and Stéphane Polis. 2022. "New Avenues and Challenges in Semantic Map Research (with a case study in the semantic field of emotions)." *Zeitschrift für Sprachwissenschaft* 41, no. 1: 1–30. <https://doi.org/10.1515/zfs-2021-2039>
- Hanks, Reuel R. 2011. *Encyclopedia of Geography Terms, Themes, and Concepts*. Santa Barbara, CA: ABC-CLIO, LLC.
- Hamzei, Ehsan, Stephan Winter, and Martin Tomko. 2020. "Place Facets: A Systematic Literature Review." *Spatial Cognition and Computation* 20, no. 1: 33–81. <https://doi.org/10.1080/13875868.2019.1688332>
- Huang, Yin. 2005. "The Linguistic Status Quo and Language Planning in Macao." Ph.D. Thesis, Beijing Language and Culture University.
- IACM. 2012. *Stories about old streets of Macau – Parish of Se*. Macau: IACM.
- Köhnlein, Björn. 2015. "The Morphological Structure of Complex Place Names: The Case of Dutch." *Journal of Comparative Germanic Linguistics* 18, no. 1: 183–212. <https://doi.org/10.1007/s10828-015-9075-0>
- Nübling, Damaris, Fabian Fahlbusch, and Rita Heuser. 2015. *Namen: Eine Einführung in die Onomastik*. Tübingen: Narr Verlag.
- Lima, Adriana Tavers. 2012. "De Bracara Augusta a Braga: análise toponímica de um concelho português." [From Bracara Augusta to Braga: toponymic analysis of a Portuguese municipality]. Master Thesis, Universidade de São Paulo.
- Lin, Jin. 2002. "A study of street names in Macao." Master Thesis, Jinan University.

Qin Xie, et al.

- Moody, Andrew J. 2008. "Macau English: Status, Functions and Forms." *English Today* 24, no. 3: 3–15.
- Moody, Andrew J. 2021. *Macau's Languages in Society and Education*. Berlin: Springer.
- Neuwirth Rostam J. 2021. "The Regional Flag of the Macau Special Administrative Region (SAR) of the People's Republic of China: A Synaesthetic Exploration." *Flags, Color, and the Legal Narrative. Law and Visual Jurisprudence*, volume 1. Edited by Anne Wagner, and Sarah Marusek, 449–481. Berlin: Springer. https://doi.org/10.1007/978-3-030-32865-8_21
- OSM. OpenStreetMap. Accessed 05/31/2022. <https://www.openstreetmap.org/>
- Pang, Senquan, Liu, Jing, and Shuo Tian. 2010. *地名標準編制概論 [Compilation of Place Names Standards]*. Beijing: Chinese Society Press.
- Pinharanda Nunes, Mário. 2013. "Socio-historical Factors Involved in Changes on The Creole Matrix of Makista." *Macau— Cultural Interaction and Literary Representation*. Edited by George Wei, and Katrine K. Wong. Oxford: Routledge, 25–41.
- Purves, Ross, Stefan Winter, and Werner Kuhn. 2019. "Places in Information Science." *Journal of the Association for Information Science and Technology* 70, no. 11: 11731182. <https://doi.org/10.1002/asi.24194>
- Qian, Siwei, Mengjun Kang, and Min Weng. 2016. "Toponym Mapping: a Case for Distribution of Ethnic Groups and Landscape Features in Guangdong, China." *Journal of Maps* 12, no. 1: 546–550. <https://doi.org/10.1080/17445647.2016.1201017>
- Rezsegi, Katalin. 2020a. "Name – Culture – Identity. The Semantic Structure of Names." *Naming, Identity and Tourism*, edited by Luisa Caiazzo, Richard Coates, & Maria Azaryahu, 154–67. Newcastle upon Tyne: Cambridge Scholars Publishing.
- Rezsegi, Katalin. 2020b. "Toponyms and Spatial Representations." *Onomastica* 64, no.4.: 23–40. <https://doi.org/10.17651/ONOMAST.64.4>
- Rothbauer, Paulette. 2008. "Triangulation." *The SAGE Encyclopaedia of Qualitative Research Methods*. Edited by Lisa Given. Riverside: Sage Publications, 892–893.
- Seidl, Nadja Penko. 2019. "Engraved in the Landscape: The Study of Spatial and Temporal Characteristics of Field Names in the Changing Landscape." *Names* 67, no.1: 16–29.
- Souza, George B. 2005. "The Portuguese Merchant Fleet at Macau in the Seventeenth and Eighteenth Centuries." *Rivalry and Conflict: European Traders and Asian Trading Networks in the 16th and 17th Centuries*. Edited by Ernst van Veen and Leonard Blussé. Leiden: CNWS Publications, 342–369.
- Silva, Renelde J. B. da. 2001. *A Identidade Macaense: The Macanese Identity*. Macau: Instituto Internacional de Macau.
- Situ, Shang-Ji. 1992. "Historical Geographical Study of Place Names in Guangdong." *Journal of Chinese Historical Geography* 1, no. 1: 21–55.
- Situ, Shang-Ji. 2001. *Human Geography History in Lingnan: A Comparative Study of Cantonese, Hakka, Hoklo People*. Guangzhou: Zhongshan University Press.
- Stolz, Thomas, Nataliya Levkovych, and Aina Urdze. 2017. "When Zero is Just Enough . . . in Support of a Special Toponymic Grammar in Maltese." *Folia Linguistica* 51, no. 2: 453–482. <https://doi.org/10.1515/flin-2017-0016>
- Stolz, Thomas and Ingo Warnke. 2018. "Comparative Colonial Toponomastics: Evidence from German and Dutch Colonial Place-Names." *Sonstige Namen: Stiefkinder der Onomastik [Other Names: Stepchildren of Onomastics]*. Edited by Rita Heuser and Miriam Schmuck. Berlin: De Gruyter, 65–90.
- Tam, Derrick C. K. 2014. "Heritage Protection, Tourism and Urban Planning in Macao." *China's Macao Transformed: Challenge and Development in the 21st Century*. Edited by Eilo W. Y. Yu and Ming K. Chan. Hong Kong: City University of Hong Kong Press, 361–86.
- Tent, Jan. 2015. "Approaches to Research in Toponymy." *Names* 63, no. 2: 65–74. <https://doi.org/10.1179/0027773814Z.000000000103>
- Tent, Jan and David Blair. 2011. "Motivations for Naming. The Development of a Toponymic Typology for Australian Placenames." *Names* 59, no. 2: 67–89.

Urbanonyms in Macao

- Tent, Jan and David Blair. 2019. "A Clash of Names: The Terminological Morass of a Toponym Class." *Names* 67, no. 2: 65–77.
- Tuan, Yi Fu. 1977. *Space and Place: The Perspective of Experience*. Minneapolis: University of Minnesota Press.
- Ursini, Francesco-Alessio, and Haiping Long. 2020. "Urbanonyms in Italian: Morpho-Semantic Properties and Distribution." *Names* 55, no. 1: 1–15.
- Ursini, Francesco-Alessio and Giuseppe Samo. 2022a. "The Interpretation of Urbanonyms in Discourse: Reconciling Theoretical Accounts with Experimental Results." *Poznań Journal of Contemporary Linguistics* 58, no. 2: 263–288.
- Ursini, Francesco-Alessio, and Giuseppe Samo. 2022b. "Names for Urban Places and Conceptual Taxonomies: The View from Italian." *Spatial Cognition & Computation* 22, no. 3–4: 264–292.
- Xu, Dan, and Jingqi Fu, eds. 2015. *Space and Quantification in the Languages of China*. Berlin: Springer.
- Wang, Bin, Xu Huang, and Shang-Ji Situ. 2012. "Analysis on Cultural Landscape Characteristics of Place Names in Guangdong province." *Human Geography* 1, no. 1: 39–44.
- Whittlesey, Derwent. 1929. "Sequent Occupance." *Annals of the Association of American Geographers* 19, no. 3: 16–65. <https://doi.org/10.1080/00045602909357088>
- Yan, Libo, and Maria Younghee Lee. 2014. "Tourist Perceptions of the Multi-Linguistic Landscape in Macau." *Journal of China Tourism Research* 10, no. 4: 432–447. <https://doi.org/10.1080/19388160.2014.953658>
- Yan, Xi and Andrew Moody. 2010. "Language and Society in Macao." *Chinese Language and Discourse* 1, no. 2: 293–324. <https://doi.org/10.1075/cld.1.2.07Xi>
- Yee, Herbert. 2014. "The Theory and Practice of 'One-Country-Two-Systems'". *China's Macao Transformed: Challenge and Development in the 21st Century*. Edited by Eilo W. Y. Yu, and Ming K. Chan. Hong Kong: City University of Hong Kong Press, 141–164.
- Vannieuwenhuyze, Bram. 2007. "The Study and Classification of Medieval Urban Toponymy: The Case of Late Medieval Brussels (13th-16th Centuries)." *Onoma* 42, no. 1: 189–211.
- Zhang, Min F. 2009. "Cultural Access to Macao - On Name Translations of Macao World Heritage." *Shanghai Journal of Translators* 2, no. 1: 29–33.

Notes on Contributors

Qin Xie is Assistant Professor at Macao University of Science and Technology where she earned her PhD in Communication Studies. Dr. Xie's research includes phonetics, syntax, morphology, and communication studies. Her recent work involves investigating the morpho-syntactic and lexical properties of Chinese toponyms, with a focus on the Pearl River Bay Area.

Francesco-Alessio Ursini is currently a Research Professor in Linguistics at the School of Chinese Language and Literature, Central China Normal University, Wuhan, China. His primary area of onomastic research is on toponyms, with a special focus on urbanonyms, their lexical and grammatical properties, and accessibility in discourse.

Giuseppe Samo is Associate Professor in Linguistics at the Beijing Language and Culture University. He earned his doctorate from the University of Geneva. He works mainly on test theoretical predictions. His toponymic research focuses on the automatic retrieval in large-scale datasets to detect geographical and dialectal variability.

Correspondence to: Prof. Dr. Francesco-Alessio Ursini
School of Chinese Language and Literature, Central China Normal University 52, Dailyou Road, Wuhan, 625762, China
Email: ursini@mail.sysu.edu.cn; randorama@outlook.com; ursini@ccnu.edu.cn; ursini@sysu.edu.cn