Research article / Научная статья

The spatiotemporal constitution of Dubai as a semiotically assembled touristscape

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Abstract
Mobile technologies mark an increasing construct of heterogeneous semiotic resources which coexist in a networked symmetrical interrelations. This area of research is still understudied, especially in terms of demonstrating how app-mediated touristscapes are co-told, transduced, and augmented by networked assemblage between participants and mobile interfaces. Drawing on a pragma-semiotic approach, the present study aims to investigate the spatiotemporal constitution of Dubai as a mobile-mediated touristscape. We draw on a newly synthesized approach that combines Cooren and Matte's (2010) model of constitutive pragmatics and Pennycook's (2008, 2017) notion of "semiotic assemblages." Such a methodological synergy has been applied to the *Dubai Travel* mobile app in a way that revealed how the touristscape of Dubai has been pragmatically constituted of the semiotic assemblage of heterogeneous figures in the app's interface-human interaction. This form of techno-human interaction was demonstrated to be situated in three spacing practices: (i) *presentifying* or making materially present hybrid interactions of techno-human figures, (ii) *ordering* or systematizing the scripted trajectories of Dubai touristscape by creating more space and time across framed intervals, and (iii) *accounting* or linking spatiotemporal augmentation to affective semiotic assemblages. The study found that Dubai touristscape has been constituted via a human-non-human semiotic assemblage with augmented and multilayered spatiotemporal possibilities. The pragma-semiotic approach has thus helped in arguing against what accounts as a touristscape with fixed spatiotemporal properties. The study contributes to understanding the increasing role of networked communication through developing a dialogue with linguistic pragmatics.
Keywords: *configuration*, *constitutive pragmatics*, *networked communication*, *Dubai touristscape*, *semiotic assemblage*

Пространственно-временная организация туристического ландшафта Дубая с позиций семиотики

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Аннотация

Мобильные технологии представляют собой набор семиотических ресурсов, сосуществующих в симметричных взаимоотношениях. Эта область исследований еще недостаточно изучена, особенно с точки зрения того, как туристические ландшафты отражаются в приложениях, преобразуются и становятся средством взаимодействия между пользователями и мобильными интерфейсами. Опираясь на прагмасемиотический подход, авторы рассматривают пространственно-временную организацию Дубая как туристического ландшафта, опосредованного мобильными устройствами. Для достижения поставленной цели мы опираемся на недавно синтезированный подход, который объединяет модель конститутивной прагматики (Cooren Matte 2010) и теоретическое понятие «семиотические комплексы» (Pennycook 2008, 2017). Этот комплексный подход был применен к мобильному приложению Dubai Travel, чтобы показать, что в интерфейсе приложения, предназначенном для взаимодействия с человеком, туристический ландшафт Дубая прагматически организован как семиотическая совокупность разнородных фигур (человеческих и нечеловеческих). Было продемонстрировано, что данная форма взаимодействия между человеком и техническим средством реализуется в трех пространственных практиках: (i) представлении или материальном присутствии гибридного взаимодействия между человеком и техническим средством, (ii) упорядочивании или систематизации заданных траекторий туристического ландшафта Дубая путем создания расширенного пространства и времени в рамках определенных интервалов, и (iii) учета или установления связи между увеличением пространственно-временной организации и аффективными семиотическими комплексами. Исследование доказало, что эти три практики связаны с мультимодальной конфигурацией, в соответствии с которой прагматическая организация города Дубай представляет собой единое семиотическое целое, включающее пространство, время, образ жизни и действия, которые позволяют презентовать, упорядочивать и принимать во внимание анализируемый туристический ландшафт. Таким образом, прагмасемиотический подход помог опровергнуть точку зрения, согласно которой туристический ландшафт обладает фиксированными пространственно-временными свойствами. Данное исследование способствует пониманию возрастающей роли сетевого общения посредством развития диалога с лингвистической прагматикой

Ключевые слова: *конфигурация, конститутивная прагматика, сетевая коммуникация, туристический ландшафт Дубая, семиотический комплекс*

1. Introduction

The current study attempts to construct an interactional view of spatiotemporality to reflect on the configuration of multiple spatiotemporal orders of touristscapes. With this in mind, we explore how touristscapes are co-told, transduced, and augmented by interactional assemblage between participants and the interface. However, analysing techno-semiotically mediatized data with multimodal representations necessitates the operationalization of methodologies that are epistemologically capable of engaging with diverse analytic aspects at both communicative and linguistic levels. This would entail the presence of synthesized methods drawn from the disciplines of communication studies and linguistics. Although there is a plethora of research on the analysis of multimodal data *contextualized* in technological modes of communication, the majority of this research has remained captive of methods grounded in the fields of social semiotics and semio-pragmatics (notably, Kress & van Leeuwen 2006, Fawzy 2021, Salama 2022, Salama & Fawzy 2023) or communication studies (e.g., Mifsud 2019, Kirchenbauer 2020, Beckers 2022 among others); but rarely, if ever, has there been research with methods synthesizing the two fields towards the analysis of techno-semiotically mediatized data. (Perhaps, whilst François Cooren's research (e.g., Cooren 2010, 2018, 2020, Cooren et al. 2017) qualifies as an exception to this generalization, the analysis conducted through his research has been confined to far less complex data sets). This can be considered one facet of current research problem: the dearth of linguistic-communicative methods whereby techno-semiotically mediatized data can be analysed. At this point, another facet of the problem surfaces: the *de facto* emergence of mobile-app-mediatized touristscapes as an ideal model or site for this type of data.

Indeed, the techno-semiotic complexity of multimodal representations should be a research focus with the advent of high-tech mobile apps that advertise touristscapes in a way that features the attractions of these touristscapes at different levels: historical, geographical, architectural, recreational, and even technological. The commingling of such attractions tends to emerge within the ambit of specific space and time frames that are technologically compressed as a spatiotemporal configuration; this is especially so should we consider the modern presence of empirical data with a multiplicity of communicative modes of expression that utilize semiotic assemblages (Pennycook 2017) of various techno-semiotic milieus; and one such representative data set is *Dubai Travel* mobile app.

As demonstrated in the analysis section below, the multimodal representations technologically mediatized by this mobile app in presenting and communicating Dubai city as a touristscape are so semiotically complex, in that different modalities overlap through the app's interface, viz. images, videos, music, colour, and verbal

language; with such modalities there may emerge heterogeneous figures that are pragmatically constituted within specific communicative situations which are bounded by well-defined dimensions of space and time – recognizable in the present set of mobile-app data as a *spatiotemporal configuration*. Further, adding to the empirical complexity of such a set of data, the techno-human actors interacting through the app's interface and its affordances provide a complex medium that enables both human and non-human actors to communicate at a posthuman era; it is an era which is sensitive to this type of communication, with humans becoming no longer centralized and technological actors coming to the fore in a fashion that emphasizes the 'dialogicity of things' (Caronia & Cooren 2014).

It can safely be said here that, with Cooren's scholarly efforts to reconcile linguistic phenomena with communication studies, the two-facet problem outlined above has been partially resolved; this has been undertaken on research fronts whereupon the organizational properties of communication have been demonstrated to be structured by a form of critiqued and reinterpreted speech acts as well as the notion of textual agency (Taylor & Cooren 1997, Cooren 2010, among others). Notwithstanding the potentials for Cooren's linguistics-cum-communication research applicability, to date no scholarly attempt has been made to apply Cooren and Matte's (2010) model of pragmatics as constitutive of heterogeneous figures in multimodally communicative situations and Pennycook's (2008, 2017) theoretical notion of "semiotic assemblages." Thus, here, we hypothesize that, in order for this scholarly attempt to be made, there need be a methodological synergy of Cooren's model of constitutive pragmatics and relevant semiotic assemblages; and that, for this to empirically materialize, the *Dubai Travel* mobile app may be utilized as a techno-semiotic medium to which a synergized pragma-communicative approach can be applied.

In order to (dis-)prove the above-stated hypothesis, we should address two research questions, one is methodological and the other practical; both can be formulated respectively thus: (1) In what way are Cooren and Matte linguistic model of constitutive pragmatics and Pennycook's theoretical notion of "semiotic assemblages" methodologically synergizable? (2) How can this methodological synergy (if any) be utilized in the analysis of Dubai city as a touristscape that is mediatized by *Dubai Travel* mobile app? The remaining sections of this study are structured in a way that answers these two research questions, and thereby (dis)prove our research hypothesis. Section 2 is a brief review of the literature relevant to analysing mobile apps, with a focus on two types of mobile-app data analysis: general-purpose-app analyses and tourism/touristscape-app ones. Section 3 presents a synthetic approach of Cooren and Matte's model of constitutive pragmatics and the notion of "semiotic assemblages." Section 4 utilizes the synthetic approach adopted in this study with a view to conducting an analysis of Dubai city as a touristscape mediatized by *Dubai Travel* mobile app. Section 5 offers a detailed discussion of the findings emerging from the data analysis. Section 6 concludes the study with a summary of the main research point and a presentation of prospects for relevant future research.

2. Mobile-apps research in focus

Arguably, mobile communication derives its value from the mobile-communication devices themselves as constitutive of "a very peculiar kind of techno-objects"; an assumption that has been based on twofold rationale (Caronia & Katz 2010: 24): First, these devices are deemed material tools for communication whereby humans effectively construct their socio-cultural worlds; second, the design of such devices renders them "embodied technologies of communication", with the logos inscribed in them being "perpetual contact". More narrowly, as one type of mobile communication, mobile apps are subdivided into three categories: native, web-based, and hybrid (Joorabchi et al. 2013). Based on this categorization, mobile apps "can provide direct access to an existing website, can function as an independent software, and can collect data from device hardware" (Zhang at al. 2018: 181). For the practical needs of covering the literature on current research point, we find it appropriate and relevant to divide this literature into general-purpose mobile-apps analyses and touristscape-/tourism-bound ones; the latter are focused on touristscapes, or are concerned with mobile tourism apps, and the former involve those studies pertaining to mobile apps with research interests other than tourism/touristscapes.

To begin with, the first/former general-purpose research on mobile apps abounds; there have recently been studies on mobile apps germane to various spheres of life. For example, Islam et al. (2010) presented the utility and impact of mobile application at the different levels of individuals, business, and social areas; but with a focus on how individual mobile users contribute to the facilitation of using mobile apps. Towards this end, different statistical data of past and present situations of using mobile apps have been utilized in a way that demonstrated the impact of mobile apps communication. Zydney and Warner (2016) provided a comprehensive 2007–2014 review of articles on mobile apps for science learning. Employing a qualitative content analysis, the authors investigated the science mobile app research in terms of its design features and theoretical foundations as well as the measurable outcomes of students. The review found that the mobile apps under investigation afforded specific similar design features, namely, knowledge-sharing mechanisms, technology-bound scaffolding, digital knowledge-construction tools, audio/visual representations, and location-aware functionality.

Likewise, Zhang et al. (2018) conducted a systematic 2007–2017 review on field experiments involving mobile apps, with a particular concern about 7 databases that were scanned by means of a predefined search strategy. Practically, 4,810 citations were retrieved from the databases, with 101 articles meeting the inclusion criteria. The authors' review concluded that only in the last 4 years have scholars begun to employ apps in field experiments, with the observation that the majority of studies, instead of using them as an experiment platform, used apps as an experiment treatment; further, the review revealed that only 7 studies have made use of smartphone sensors for data collection, and that only one study has given an account of cost and ethical concerns with respect to using apps for the experiment.

Also, Fuad and Al-Yahya (2021) examined the link between features of Arabic mobile apps and investigated whether the categories of Google Play app represented the genre and type of Arabic mobile apps. Crucially, the authors supported the hypothesis that the method of textual app descriptions, recognized as Topic Modelling, has proven effective in offering new categories for Arabic mobile apps in Google Play app store. With this hypothesis supported, the study offered a contribution to Arabic mobile app analysis as well as improved app search and investigation in various domains, viz. technical development, business, and marketing. Additionally, Stocchi at al. (2022) proposed an integrative review of marketing research on mobile apps with a view to demonstrating how mobile apps shape customer experiences across iterative journeys of customers; the authors conducted an in-depth bibliographic analysis of 471 studies, and found that mobile apps could enhance consumer perceptions of value at the early stages of the customer journey; but, according to the authors, this could be feasible should a synthetic method be adopted towards combining market orientation, digital customer orientation, customer journey and experience, value (co)creation, and competitive advantage.

Now, let us move to the specific type of literature on touristscape-/tourism-bound mobile-app analysis. Kennedy-Eden and Gretzel (2012) proposed a taxonomy of mobile apps in tourism with two perspectives in mind: one is concerned with a taxonomy of the services travel-bound apps afforded to users; the other perspective concerns a taxonomy related to the customization level accessible to mobile-app users. With the two types of taxonomy, both authors managed to provide insights in the landscape of mobile apps and their development in the sphere of tourism. Kuo at al. (2019) provided an assessment of both how tourism mobile apps have been utilized by consumers and how those consumers have used such apps towards adapting consumers' communicative intentions to visit touristic destinations. The authors adopted the integrative approach of technology acceptance model (TAM) with a view to investigating customers' intentions to take up tourism mobile apps. With a survey of 630 tourism respondents, the study found that the 'e-servicescape environment' and 'e-word-of-mouth communication' played significant roles in specifying and deciding on intentions to adopt tourism apps and visit tourism destinations. Also, drawing on the text-analysis methods of Sentiment Analysis and Topic Modelling, Masrury et al. (2019) were concerned with analysing the perceived quality of tourism mobile apps, with a focus on the two popular Online Travel Agent (OTA) mobile apps for travel-specific activities: Traveloka and Tiket.com. The authors found that positive/negative sentiments towards aspects of online travel agent apps qualities could be unveiled by means of the Sentiment Analysis method; further, they concluded that the method of Topic Modelling could bring up clusters of significantly topic-indicating words related to each mobile app service quality dimensions. Finally, Abdul Rashid et al. (2020) have recently provided an assessment of the strengths and weaknesses of how mobile apps have become a substitution for a great deal of tourism workers'

functions as well as the effectiveness of these apps in helping and satisfying tourists during their tour visit. The authors have drawn on a broad swathe of research on the use of mobile apps in tourism over the time period 2011–2020. They found that mobile apps in tourism communication have not entirely replaced the function of human workers in the tourism industry; and, according to them, these apps' strengths could be enhanced and their weaknesses required improvements that should be made to meet tourists' needs.

Having surveyed the two types of literature on mobile apps, general-purpose and tourism-specific, we may readily claim the presence of a tangible research gap insofar as the empirical analysis of mobile-apps data is concerned, at least from a pragma-communicative perspective; a perspective that can explicate crucial pragmatic and communicative aspects of the multimodal techno-semiotic complexity of this type of data. Indeed, towards bridging this gap, we propose the pragma-communicative approach outlined in the coming section, and then apply it to the analysis of *Dubai Travel* mobile app in the following section.

3. Interfacing constitutive pragmatics and semiotic assemblages: A synthetic approach

Here, we propose an approach that synthesizes Cooren and Matte's (2010) linguistically oriented model of constitutive pragmatics with the general understanding of semiotic assemblages introduced by Pennycook (2008, 2017). In the following subsections, we begin with the constitutive pragmatics model, then move on to elucidating the notion of semiotic assemblages and relating to Vásquez and Cooren's (2013) practices of presentifying, ordering, and accounting.

3.1. The constitutive pragmatics model and its mechanism of configuration analysis

Cooren and Matte (2010) have argued for a model of constitutive pragmatics that transcends the limited potentials of the classic models of speech act theory. Whilst the latter models had long remained monological and human-centric in approaching language use as action, the former model (constitutive pragmatics) has methodologically attended to interaction and communication, particularly beyond human actors. As Cooren and Matte (2010: 14; italics in original) argue, the constitutive view of pragmatics demonstrates that a great deal of things "can also be said to *do things with words*, since it is through their performances that these things will present/incarnate/embody themselves in given situations." Thus, the two authors, with their proposed constitutive model, have made a contributory advance on the traditional field of pragmatics as historically focused on the agency of people in speaking and writing – being exclusively doing things with words.

Indeed, in order to secure a richer model that investigates heterogeneous agency of people and things in interaction, Cooren and Matte have utilized the crucial term "figures" to emphasize Latour's (1996) conceptualization of action as

being inter-objectively shared. Far from the term's technically convoluted history, they proposed to define "figures" as such:

> We will speak of figures to refer to faces, to someone's physical appearance, to what someone performs or accomplishes when she is skating or doing gymnastic (a quadruple back somersault, for instance), to an illustration, a (written) character, a number, a diagram, a musical motif, a status, a role, or the special usage of a word or phrase (as in figure of speech). (Cooren & Matte 2010: 18)

Crucially, according to constitutive pragmatics, figures can be presentified (see below the term "presentification" as a spacing practice) materially/explicitly or invoked implicitly – or more generally, mobilized – in given situations; and the degree of pragmatic force of such figures can be pinpointed in terms of their potential for making a difference in such given situations – what is metaphorically described as 'lending weight to' what is being done.

Further, in their proposition of constitutive pragmatics, Cooren and Matte (2010) have particularly attended to the "ordering effects" enabled by the heterogeneous agencies embodied in speech acts; these effects materialize in two subtle forms: first, presence-and-absence effects in interactional situations; second, representation effects made in the case of "principals." Apropos the first form of ordering effects, pragmatic constitution follows Derrida's (1994) concept of "spectral logic," whereby a figure – recognized as a spectre – can simultaneously be both present and absent: thus, a constitutive pragmatics "should not make any a priori distinction between what is present and what is absent, active or passive in a given situation" (Cooren & Matte 2010: 16). Regarding the second form of ordering effects, the pragmatic constitution of figures is influenced by Taylor and Van Every's (2000) notion of "principal" as "an actor that is represented by an agent who/that is supposed to be acting for it/him/her" (Cooren & Matte 2010: 28).

Among all potentially analysable figures, those of time and place are strictly focused in the present context of research, where the mobile-app-mediatized touristic landscape of Dubai is empirically investigated in terms of its *spatiotemporal configurations*; and, more specifically, the pragmatic constitution of those configurations and their ordering effects on such a touristic landscape. Here, we argue that this can best be captured in terms of what is theoretically established now as the semiotic assemblages of human and non-human figures as a means of spatiotemporal organization (see subsection 3.2 below).

3.2. Semiotic assemblages and spatiotemporal organization

The notion of "semiotic assemblages" helps us discuss the entangled, spatiotemporal multiplicity of mobile apps communication where different semiotic figures interact. An understanding of this notion allows extending knowledge on how heterogeneous semiotic resources (including human interactants) constitute a particular moment of interaction. It "expands the semiotic inventory and *relocates*

repertoires in the dynamic relations among objects, places and linguistic resources, an emergent property deriving from the interactions between people, artefacts and space" (Pennycook 2017: 11–12, authors' italics). A significant concept that is essential to our understanding of the notion of 'semiotic assemblages' is 'relocation.' Relocation, Pennycook argues, addresses the "remaking" of meaning in different contexts, the "inscription" of different meanings into different settings, and, most importantly, the "redistribution" of meaning between the human body and the physical surroundings (Pennycook 2008: 40).

Studies adopting this approach focus primarily on the interactions between language, visual resources, bodies and other spatial resources that appear in a specific communicational space. The notion of 'spatial repertoires' is suggestive here. Spatial repertoires describe the emergent and interactant affordances of communicational spaces. Approaching mobile apps through the notion of semiotic assemblages allows perceiving this peculiar medium of communication as distributed in human-non-human interaction. It also aids in addressing the complexity of the resultant spatiotemporal repertoires, the figures that come together in the form of semiotic assemblages. Such figures, we argue, can be co-presented and relocated into material spacing practices that organize the form of human-non-human interaction indicated above. In their Communicative Constitution of Organizing approach, Vásquez and Cooren (2013) offer three of such spacing practices, namely, presentifying, ordering, and accounting. Our theoretical focus here is the constitutive nature of these practices in terms of certain spatiotemporal assemblages of human and non-human resources.

To begin with, the spacing practice of presentifying explicates how the making-presence of persons or objects can take up a material form through the various human and non-human agents' actions (Vásquez & Cooren 2013: 33). Crucially, presentifying, as Salama and Fawzy (2023: 7, online version) point out, emphasizes the experience of materiality as being "inseparable from the making-someone-or-something-present process in time and space." The second spacing practice of ordering, according to Vásquez and Cooren (2013), denotes the spacing sense of ordering various things at regular intervals in a way that semiotically assembles heterogeneous actors in space and time in an orderly fashion. The third, and last, spacing practice of accounting is argued to make accounts (quantities and/or numbers) and stories (certain narrative) in the communicative scene of interacting semiotic assemblages.

4. Data analysis

The present section endeavours to apply the pragma-communicative approach, outlined in the preceding section, to *Dubai Travel* mobile app. Based on the touristscape's semiotic assemblages of human-non-human figures pragmatically constituted within the spacing practices of presentifying, ordering, and augmentation-adduced accounting as well as their respective analytic foci, a corresponding three-strand analysis is neatly presented in the coming subsections.

4.1. The material experiences of Dubai touristscape made present: Touristic experiential presentification

As a point of departure, conceiving of 'Dubai' as a touristic experience stems from acknowledging that there is a form of dynamic human-non-human interaction between *Dubai Travel* mobile app and its users. In so doing, we argue that Dubai-touristscape's configuration is realized as a *presentifying spacing practice* with human and non-human figures that are made materially co-present in different communicative scenes of touristic experience. This is evident in the hybrid communicative scenes and their semiotically assembled presentifications by the mobile app as 'Best Experiences' in Dubai in Figure 1. The scenes exhibited could be viewed as a touristic configuration of the whole scenery made present by the app itself, but it should be noted *a priori* that this configuration is particularly selected and organized for its attractively hybrid-style embodiment of the following figures: (i) the Islamic style of 'Jumeirah mosque', (ii) the traditional Arab style of a desert-camel landscape, and (iii) the modern style of a swimming-pool recreation.

Equally important is the fact that putative users are likely to be assembled as figures in the utterance scene that constitutes an Islamic-Arab Dubai in space and time. Extending a modern figure from a traditional (if not classic) one can be perceived as a hybrid augmentation of tourist scenery that is communicated as a real-world object through two speech-act figures: the directive speech act 'BOOK NOW' and the informative speech act 'Likely to Sell Out'. Users are assembled in the app-based touristscape as being the addressed figures: (i) the presumed subject 'You' instructed by the directive act and (ii) the implicit subject informed by the representative act. Conceivably, then, the assembled figures, humans and non-humans, are pragmatically constitutive of a spatiotemporal configuration whose space-bound affordances and timely produced speech acts have jointly enabled the mobile-app mediatization of the touristic 'Best Experiences' in Dubai.

As shown in Figure 2, Dubai's 'Best Experiences' is presentified as a dislocated touristscape and captioned with the configuration 'Sightseeing Attraction Tickets'. This configuration seems to be spatiotemporally linked with the specific moments of visiting Dubai's 'Sahara Dunes & Camels' and 'Abu Dhabi Full-Day Sightseeing' – presented here as two figures. Indeed, this spatiotemporally flowing configuration is achieved by assembling the figure of 'Tickets' as a nonhuman actor whereby the directive speech act of 'Do the booking' is enabled in the utterance context of sightseeing. Also, the same utterance event assembles human actors as 'figures' who dynamically participate in this speech act event with a *temporally augmented presence* that oscillates between the different temporalities of the past and the present: First, explicitly, human figures are made materially present in touristic scenes; second, implicitly, the human actors are *spectrally* presentified as reviewers of the touristic places through the Classification Golden Star Victors associated with an accreditive speech act: being themselves technological figures enabling human figures to pragmatically constitute previous positive and negative reviewing practices. Thus, the practices of past reviewing acts

(positive or negative) are materially presented by the app as a hybrid relational nexus between human and technological figures beyond the app users' *here* and *now*. Further, one may observe the informative speech act of place representation connected with the material realization of the figure of 'Jumeirah mosque' as located 'Near Dubai' in Figure 2 – another locative figure that contributes to app's mediatization of the overall touristic configuration.
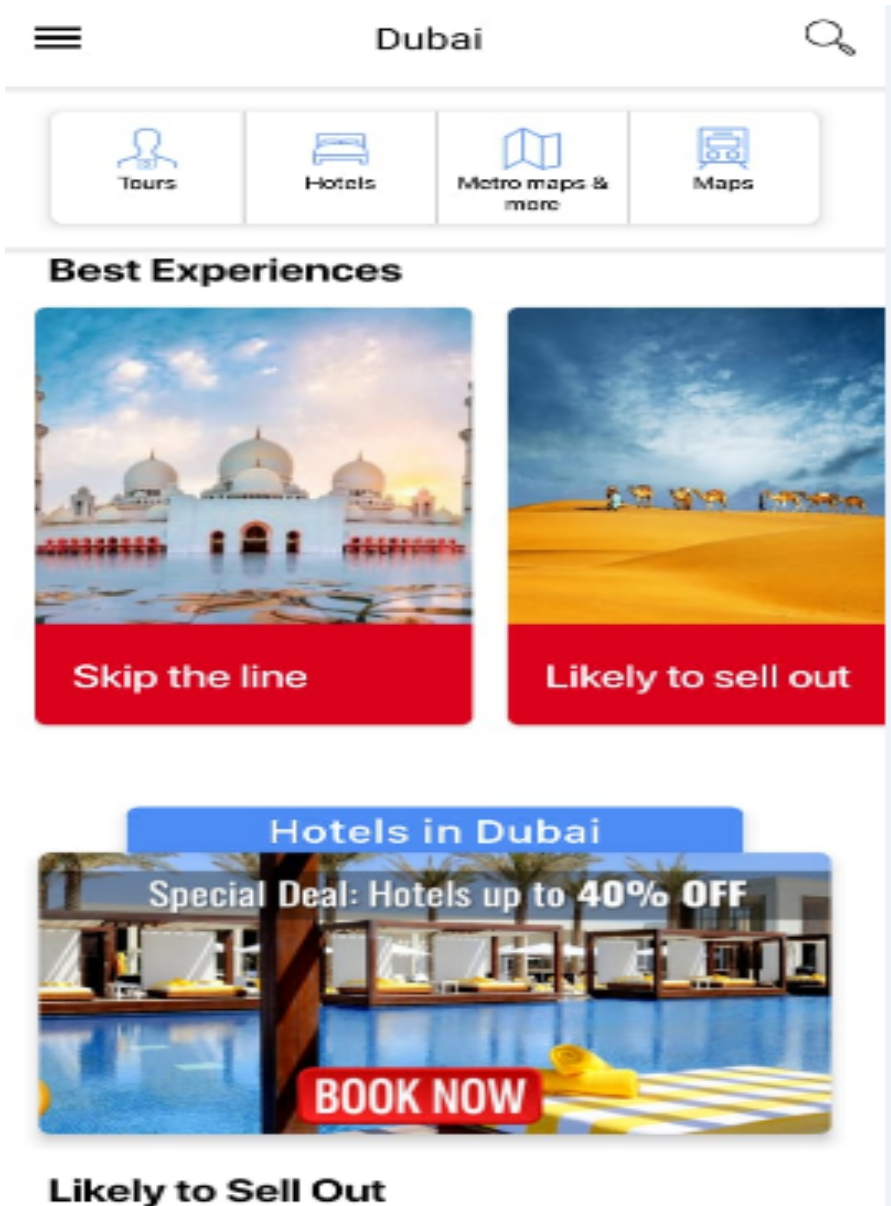

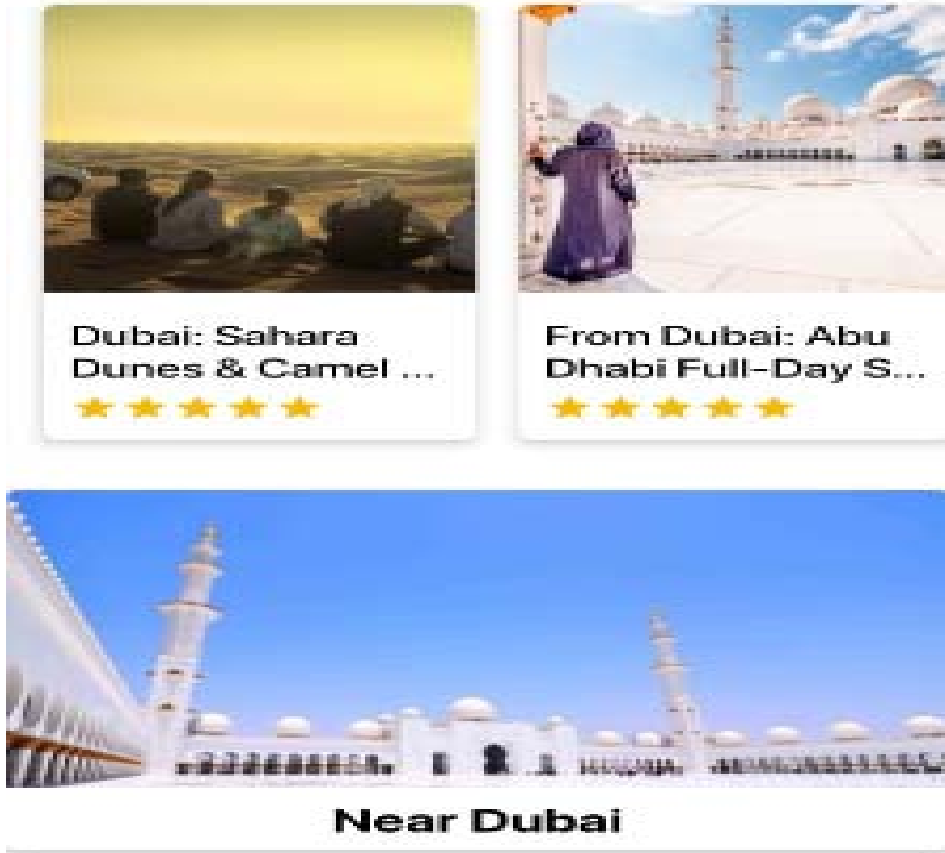**Figure 1. The made-present configuration of 'Best Experiences' in Dubai**

Figure 2. Material scenes presentified with the locational figure 'Near Dubai'

Now, having discussed the spacing practice of presentifying touristic locations as a material configuration of heterogeneous agentive figures, it is time we moved to the practice of ordering and its semiotic assemblages of scripting in the *Dubai Travel* app in the coming subsection.

4.2. Ordering the Dubai touristscape: Scripting the touristic scene

Ordering, as a spacing practice, can be viewed as a spatiotemporal scripting of the touristscape of Dubai with certain semiotic assemblages of human and non-human figures. This can readily be observed in Figures 3 and 4, where the overall touristscape can be described as a typical realization of spacing as an ordering process of place and time respectively; that is, a "scripted trajectory" (Vásquez & Cooren 2013: 42) of (i) a list of ordered locational figures in a sequence near Dubai (Figure 3) and (ii) a five-day regular framework which can be viewed here as a temporal configuration of time figures (Figure 4). Let us take each in turn. Spatially, as exhibited in Figure 3, the list of scripted touristic locations can be said to

constitute a nexus of three spatial figures, namely, 'Abu Dhabi', 'Kish Island', and 'Sharjah'. Temporally, as displayed in Figure 4, a time configuration is constituted across a temporal framework of five days – each is a standing figure with pragmatically constituted agency – ordered as Day1 through Day5. As such, virtually all locational figures in the present communicative scene are temporally organized in an orderly fashion within augmented space; this can be assumed to afford what is described as "the rhythm to the organization" (Vásquez & Cooren 2013: 36) to the current configuration of touristic locational figures.

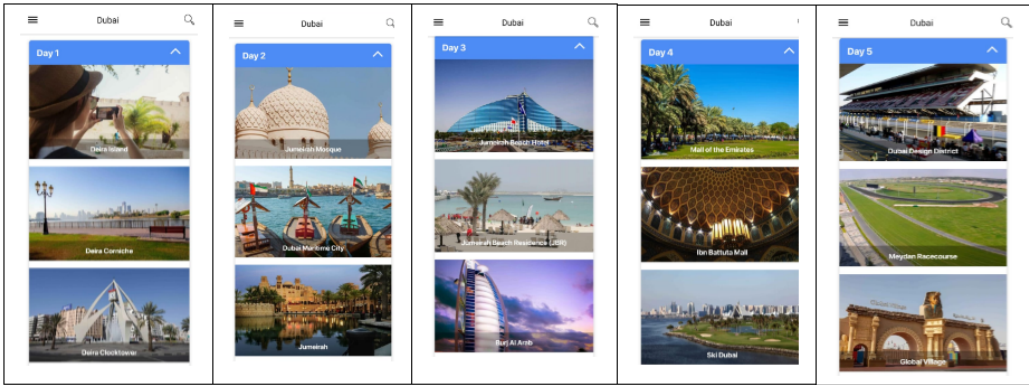**Figure 3. Ordering spatial figures 'Near Dubai'**

Figure 4. Temporal ordering of Dubai touristscape as a scenic configuration

Also, on closer inspection of Figure 4, the temporal ordering the Dubai touristscape can be further considered to be a scenic configuration of touristic locational figures. Here, these figures are pragmatically constituted by the directive speech act of instructing potential app users into an ordered spatiotemporal framework; it is such a communicative situation that seems to offer those users the opportunity to be "instructed by the [ordered] script to do something" (Latour 2008: 5, cited in Vásquez & Cooren 2013: 37). Human figures dynamically interact with the locational figures assembled here. Another communicative situation is then invoked and is pragmatically constituted by the informative illocutions of telling the app users about the organization of the space and time of visiting touristic locations. The spacing practice of ordering can be interpreted as a dislocated assemblage of human-non-human figures presented as a technologically scripted trajectory. This trajectory conduces to an order of heterogeneous organizational actors which are in effect mediatized by the *Dubai Travel* app; these actors can be conceived of here as ordered figures – touristic in essence.

Now, let us move to the last augmentation-bound spacing practice of accounting and its role in constituting the affective semiotic assemblages associated with Dubai touristscape in the present context of analysing the *Dubai Travel* app.

4.3. Augmentation by constitutive accounting
of affective semiotic assemblages

The semiotic assemblages brought into the *Dubai Travel* context of utterance diffuse and distribute accountability between participants and the app affordances. This can be exemplified through the display of participants' past experiences and ratings of the various touristscapes they have visited. That is, experiencing Dubai as a mobile-app-mediatized touristscape is a product of the constitutive affective accounting distributed between the digital/analogue participants and the interface assemblages. As demonstrated in Figure 5, the left screen displays participants' narrative which warns other app participants against the bad experience of a specific tour itinerary, whereas the right screen encodes participants' past experiences into

numerical and yellow star ratings. The interface deploys 'pretextual' (see Jones 2020) accreditives so as to gather data from participants concerning their visits. The accreditive illocutions allow participants to share their past experiences and rate specific touristscapes. The resulting short timescales narratives of past experiences are layered and multiplied into longer timescale ones, representing them as longer historical events. Other participants distributed across different spaces, who interact with the app for information about specific touristscapes, become part of the spatial event, thus adding various other layers to the tourist destinations. Spatiotemporal augmentation is thus achieved.
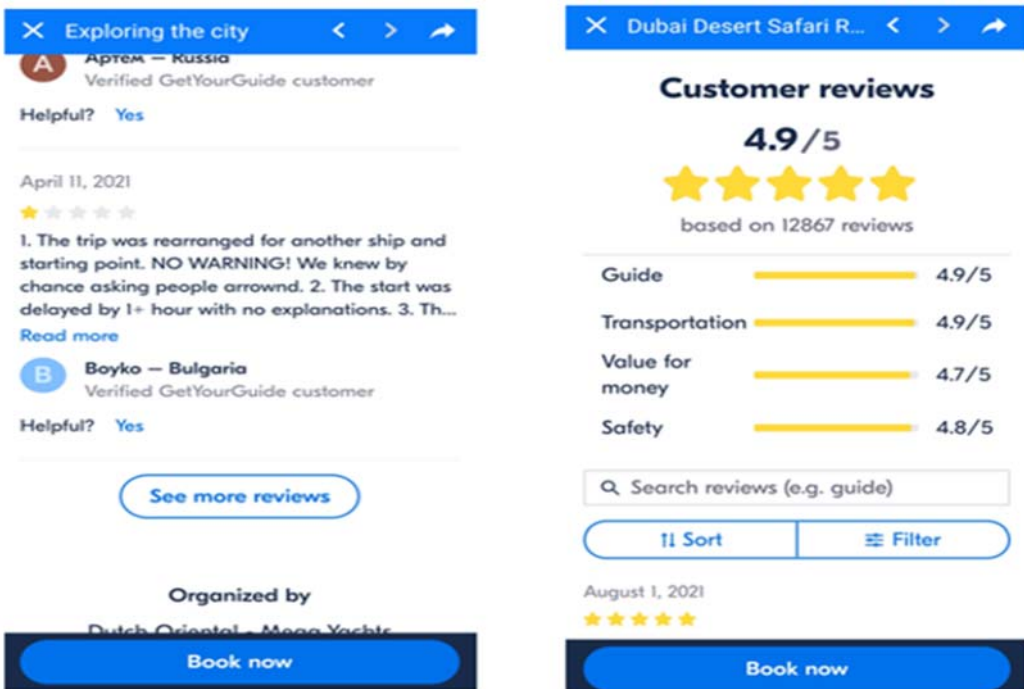

Figure 5. Accounting of the semiotics of affective positive/negative reviewing

Additionally, the typographies of fonts, colours, and layout are semiotically assembled to codify specific affective values of participants' experiences. This corresponds to Kitchin and Dodge's (2011) notion of "transduction of space"; that is the transformation of space by code. The informative illocutions of numbers and yellow stars account for coding participants' touristscapes experience, in terms of guide, transportation, service and organization. Thus, the algorithmic mediation of the touristscape seems to have agentively rendered participants' affect materialized with the performative illocutions of numbers and colours, assigning touristscapes *new* algorithmically coded spatial repertoires. Deploying the informative contents of warning or promise, the figure of past experience accounts for adding new attributes, whether positive or negative, to the mentioned touristscapes.

Also, crucially, in Figure 6, the informative illocutions in "Travel memories you'll never forget" instantiate the commissive forces of a future promise of

"Unforgettable cultural experiences." These illocutions are activated by participants' clicking on the typographically emphasized directive "GET YOUR GUIDE" button placed at the top of the screen. Clicking the button, the accreditives of choosing between sports, culture, food, or nature destinations are then activated, allowing participants to customize their own experience based on past participants' "Likely to sell out" ones. Affect in this particular instance is specifically defined as the "prediscursive, embodied experiences that are subsequently codified into subjective emotions" (Lorimer 2009: 334). A further instance of affective positioning is achieved in the fourth screenshot offering the cumulative results of multiple feedbacks over time, which even assume the role of deciding who this destination is "not suitable for." That is, *Dubai Travel* accounts for instantiating spatial repertoires through the interface qualification of participants' spatial experiences, thus rendering them more experiential.
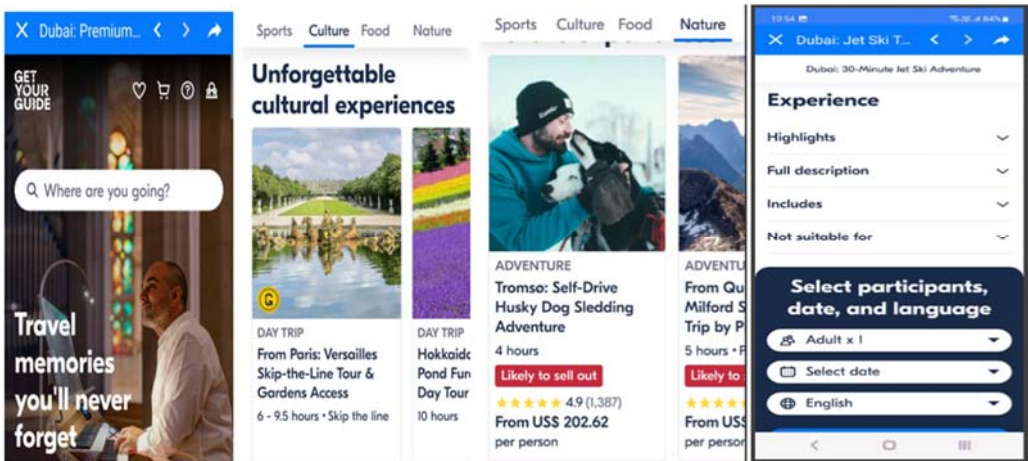

Figure 6. Accounting of participants' cultural experiences and affective positioning

It can be argued, then, that Dubai touristscapes are heterogeneously connected into semiotic assemblages "enabling action-at-a-distance and 'distance-at-an-action': distance-(in time and space of the multiple environments of human experience)-at (or attending to)-an-action'" (Bridge 2021: 428). The multiplicity of time and spaces of diverse environments of participants' experience is numerically and typographically compressed (distance-at-an-action) producing new repertoires and ramifying its effects (action-at-a-distance). In fact, the *Dubai Travel* participants and interface affordances discursively frame, shape and sort the various tourist destinations, contributing to the construction of new spatial repertoires. The resulting space is of a particular hybrid and augmented spatio-temporalities. First it is divided down by being algorthmically presented as abstract de-terriolialized touristscapes. Second, it is reassembled in different timescapes by different participants through a series of data flow.

The result is an emerging form of continual spatializations of negative/positive connotational bearings. Correspondingly, it can be argued that the assemblage of

human-non-human affective semiosis conflates the information space (instantiated by the interface) and the lived space of the body (participants' past experience) as socio-technical assemblies or 'congeries' (Nayar 2014: 64). Involving corporality, the assembled figures produce effects of presence which is in a constant state of reconstruction for "another next first time" (Cooren & Matt 2010) by the putative app participants who encounter those narrations of past experience and thus co-produce them. Furthermore, it can be argued that past experience in this instance is a figure that accounts for transforming spatial identities by adding incorporeal attributes to the touristscapes, enacting a touristscape strung out between a built environment and a screened environment that could be described as a "hypertopia" wherein "a 'here' is full of 'elsewheres'" (Casetti 2015: 131, 151).

5. Discussion

The analysis has yielded that the touristscapes perceived through the interactional assemblages afforded by *Dubai Travel* carry peculiar spatiotemporal representations which are multiple, interactional, contingent, constitutive and entangled with human-non-human assemblages. The touristscapes produced through *Dubai Travel* mediation are augmented in interaction. That is, *Dubai Travel* offers interaction-based configurations of space and time which refute linear, portioned, clockwork but are permeable, fluid and multiple. Dubai touristscape is thus presented as not just a space or location but an 'event' defined by human-non-human and analogue-digital interaction. This has been analytically realized above via three spacing practices of presentifying, ordering, and accounting.

The first practice of presentifying has allowed for making materially present hybrid interactions of techno-human figures. The most important instance of such a practice was demonstrated to be the app's communicative situations associated with the 'Best Experiences' in Dubai (see Figure 1); such experiences have been pragmatically constituted as a touristic configuration heterogeneously presentified via relational figures: (i) the Islamic style of 'Jumeirah mosque', (ii) the traditional Arab style of a desert-camel landscape, and (iii) the modern style of a swimming-pool recreation. The communicative agency of such figures was shown in relation to potential app users as human figures in a way that constituted the spatiotemporal presentification of a modern figure vis-à-vis a traditional or classic one. The speech acts observed in the constitution of this spatiotemporal presentification were directives and informatives.

The second spacing practice of ordering was demonstrated to consist in systematizing the scripted trajectories of Dubai touristscape by means of the pragmatic constitution of more spaces and time frames across framed intervals, all recognized as figures in themselves and assigned an agency role in some communicative situations. For instance, a configuration of place figures was shown to offer the list of spatially scripted touristic locations, namely, 'Abu Dhabi', 'Kish Island', and 'Sharjah' (see Figure 3). Also, a scripted trajectory of five days was viewed as a whole temporal configuration of time figures whose agency role has

taken the form of a narratively mediatized ordering – ordered as Day1 through Day5 – whereby more space and time frames were communicatively co-produced; such an ordering narrative was argued to operate on a spatial level with Dubai's touristic locations figuring in the app's techno-semiotic milieu (see Figure 4).

The third, and final, spacing practice of accounting was demonstrated in relation to the process of augmentation by constitutive accounting of affective semiotic assemblages of two analytic instances. The first was instantiated in the accounting of the semiotics of affective positive/negative reviewing (see Figure 5), where the typographies of fonts, colours, and layout were shown to have been assembled with a view to codifying specific affective values of participants' experiences. Also, the accounts of informative illocutions of numbers and yellow stars constituted participants' touristic experience, in terms of guide, transportation, service and organization. The second analytic instance of augmentation by constitutive accounting was presented in the form of accounting of participants' cultural experiences and affective positioning (see Figure 6). With the investigation of this instance, a multiplicity of time and spaces of diverse environments of participants' experience was shown to constitute numerically and typographically compressed (distance-at-an-action) producing new repertoires and ramifying its effects (action-at-a-distance). Crucially, a form of continual spatializations of negative/positive connotational bearings ensued. At this point, it was made clear how the assemblage of human-non-human affective semiosis conflated the information space (instantiated by the interface) and the lived space of the body (participants' past experience) as socio-technical assemblies.

6. Conclusion

The present study has investigated the spatiotemporal configuration of *Dubai Travel* mobile app as a mediatizing medium of Dubai touristscape; this has been methodologically enabled by virtue of a newly synthesized pragma-commutative approach that combines Cooren and Matte's (2010) linguistic model of constitutive pragmatics and Pennycook's (2008, 2017) theoretical notion of "semiotic assemblages." The study has empirically demonstrated how the present synthesized approach analytically revealed the pragma-communicative constitution of Dubai's touristic attractions: being a spatiotemporal configuration of heterogeneous figures (human and non-human) in the app's interface-human interaction. This form of techno-human interaction has been proven to be situated in three spacing practices; and, on a rather dialectical level, it is through the co-emergence of these three practices that the approach has been proven methodologically robust for the analysis of techno-semiotically mediatized data of the sort. The discussion above reflected on how the two methodological and analytic questions raised in the introduction have been addressed: respectively, the question on the synergizability of the model of constitutive pragmatics and the notion of "semiotic assemblages" as well as that on the applicability of the synthesized approach to the mobile app of *Dubai Travel*. Indeed, we argue here that this discussion should be focused on how

the three mediatized spacing practices (presentifying, ordering, and accounting) have been pragmatically constituted in forms of spatiotemporal configurations of heterogeneous figures.

Finally, by now, we are in a position to reflect on the methodological significance of the pragma-communicative approach adopted in the present study in view of the outline of the crucial aspects of multimodal data analysis above. Synergizing Cooren and Matte's (2010) constitutive-pragmatics model and Pennycook's (2008, 2017) notion of "semiotic assemblages" has significantly correlated the non-human figures appearing in the app's multimodal interface and the human app-user figures (as heterogeneous configurations) with their communicative contexts; such contexts have been pragmatically constituted via speech-act forces associated with the various agencies of such inter-objective figures. Crucially, this interesting correlation can be deemed to unravel a configuration of the app's interface and its users as an "augmented space," where "the virtual becomes a powerful force that reshapes the physical" (Manovich 2006: 227). Such an augmented-space realization has become increasingly established as the foregoing analysis proceeded, particularly at the point where the past (typically ancient Arab style of architecture) was shown to literally cut into the present (modern attractions style), and thus geo-historical dataspace has materialized to become a sort of attractive touristscape that is techno-semiotically mediatized by a mobile app.

Acknowledgments

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