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Augmenting Travel Guides for Enriching Travel Experiences

Paper and digital media, smartphone apps and travel guides for example, are commonly used together by travellers for reliable and up-to-date information. This paper examines how the a-book, an augmented travel guide with complementary multimedia could enrich travel experiences. Using a tailored app, travellers can access, play, and add their own videos, audio, weblinks and digital images to the guide. Results of 14 evaluations studies with UK travellers suggest that it advances concepts of *co-creation*, facilitates a *new reading paradigm*, consequently *enriching travel performances*. This paper provides an initial introductory to these emerging theoretical themes and suggests implications for future research.

Key words: augmented reality, travel guides, co-creation, new reading paradigm, enriching travel experiences

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Introduction

Recent digital technology developments, such as the increased prevalence of personal smart phones, are transforming how travellers engage in travel experiences (Gretzel & Jamal, 2009). Digital technology enables more personalised experiences (Neuhofer, Buhalis, & Ladkin, 2014) through the generation and sharing of personal content using social media for example (Tussyadiah & Fesenmaier, 2009), making these encounters more meaningful and memorable (Bharwani & Jauhari, 2013). However, paper still continues to be used alongside digital technology by travellers, the most common being guidebooks (Tsang, Chan, & Ho, 2011). The a-book was developed as a commercially viable response to this observation to enhance traveller experiences by bridging the gap between material and virtual travel practices. It was in fact released as the latest travel guide for Cornwall, published by Bradt Travel Guides in February 2019 which is linked to additional related multimedia through a bespoke smartphone app, called the ‘Cornwall a-book’. A test version of the app is currently also available for travellers to download for free from the Google Play Store. This paper introduces key conceptual themes that arose from formally testing the a-book with 14 UK-based travellers through one-to-one ‘technology elicitation style’ semi-structured interviews and suggests how it might enrich travel experiences and inform future print and digital technology configurations within eTourism.

Collectively, this paper proposes further critiques around the concepts of co-creation, reading paradigms and the influence of these on the tourist experience. It advances our conceptual and empirical understanding of the complexities of the relationship between physical and virtual worlds as fundamental in tourist experiences. It is part of a wider research project that seeks to develop new paper technologies that blend paper with digital and explore its arising implications for hardware and software technology innovation,

business model and enterprise development, and interaction design within Travel and Tourism. Although, due to this paper's scope, these additional themes will not be addressed.

Literature Review

Paper and digital media have valuable qualities that can complement and strengthen each other, as evidenced through the prevalent usage of travel guides (Tsang et al., 2011) and smartphone apps (Wang, Park & Fesenmaier, 2012) together when planning and engaging in a holiday. Travel guides have been cited as the most commonly used printed medium in travel (Brown & Chalmers, 2003) due to their 'tangibility, accessibility and standardisation' (Tsang et al., 2011, p. 721). Travel guides also facilitate various augmentation explorations (e.g. embedding of video, audio and web content) that could be applied to other print formats, such as brochures, magazines or leaflets, in other travel contexts (e.g. exhibitions spaces), providing a platform for exploring new affordances enabled by blending physical and digital media in this manner. Moreover, smartphone apps have also been demonstrated to significantly enhance travel experiences by providing readily available and easily transportable practical information for many travel related activities that facilitate preparation and completion of aims, with some supporting supplementary attributes that encourage spontaneity—employment of a 'near me' feature to locate places of interest nearby for example (Wang et al., 2012). The a-book was therefore conceived to amalgamate these valuable travel guide and app features under one platform, to enhance current associated travel experiences.

A-book Methodology

The a-book is an augmented travel guide to Cornwall developed as part of the EPSRC funded Next Generation Paper Project that is investigating new paper technologies: 2G and

3G. 2G paper is optically recognised using a smartphone camera, allowing associated digital content to be played by taking a picture of the page using a smartphone with the Cornwall a-book app installed. With the camera function selected, the phone is held over an open page to take its picture. Once the image has been taken, available augmented content is then highlighted in green on the subsequent app page and can be activated through touch to play it. See Figure 1 for visual reference of this, read from left to right.



Figure 1. An example of 2G a-book interaction (authors' own work)

Using this approach, 2G augmentation can be applied retrospectively to any currently existing printed medium without modification. 3G paper has touch sensitive buttons embedded in the page that when pressed plays associated digital content in the same manner as the 2G example. See Figure 2 for images of this, read from left to right.

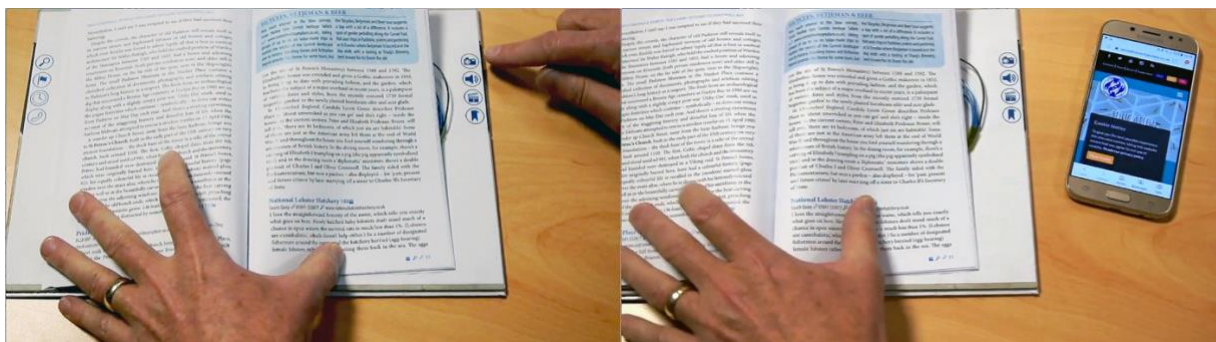


Figure 2. An example of 3G a-book interaction (authors' own work)

This paper refers to 2G a-books exclusively as 3G paper is not yet ready for user testing. It is however indicative of forthcoming possibilities of eTourism technologies and how these could affect future travel experiences.

The a-book takes a ‘zero delta’ approach; this means that it encompasses items, such as a smartphone and printed travel guide, that are already commonly part of current travel practices, so that travellers do not need specialised equipment to engage with it. They can use the free-to-download Cornwall a-book app on their smartphone device with the printed travel guide to access and playback digital image slideshows, videos, audio and weblinks by taking a picture of its page or speaking or manually inputting the page number (see Figure 3).



Figure 3. The Cornwall a-book app display when a page is selected (available content for the page are highlighted in green) (authors’ own work)

They can also digitally bookmark pages, access associated Twitter feeds, be notified of places of interest close by a ‘live location service’ and add their own personal content to specific pages or to the main app homepage under ‘access shared content’. Consequently, it is

the travellers' engagement with the a-book's material and virtual attributes that creates a merging of digital and physical associated performances as they *co-respond* with the technology and its affordances. See Figure 4 for an annotated example of the app's features.

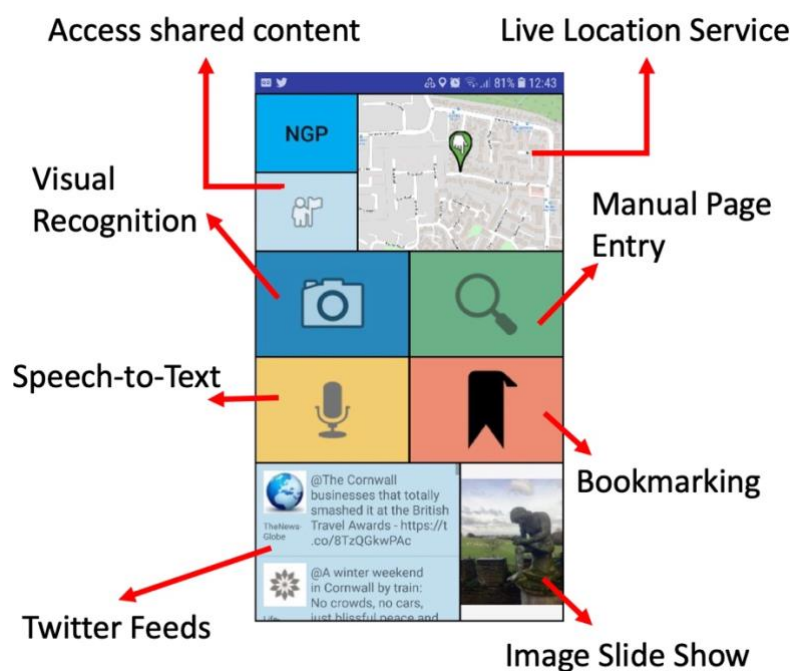


Figure 4. The Cornwall a-book app's homepage with features annotated (authors' own work)

Considering the novel and experiential nature of the a-book, Corbin and Strauss's (2015) grounded theory methodology was selected to explore its potential significance on traveller experiences. This grounded theory methodology is exploratory in approach and uses qualitative techniques, such as open coding, axial coding and selective coding, to create theories that explain phenomena of which there is little or no knowledge. The a-book was created to develop and test novel augmented paper technology with travellers for the first time as specific understandings around the traveller experience with this technology are yet to be established. Corbin and Strauss's (2015) grounded theory methodology therefore allowed

for the conceptualisation of an initial theoretical framework and corresponding themes that explain how the a-book could be used to enhance travel experiences.

Data Collection and Sample

Methods consisted of 14 one-to-one ‘technology elicitation style’ semi-structured interviews with UK-based adult travellers in a home lab at the University of Surrey. Similar to photo elicitation where photographs are employed as prompts to facilitate interview discussions (Harper, 2002), technology elicitation is used here to refer to the use of technology, the a-book in this instance, to support and elicit interview conversations. Specifically, an initial demonstration of the a-book was carried out with participants. Subsequently they were given unlimited time to interact with it undisturbed and were then interviewed on their initial impressions when they indicated they were finished exploring the technology. Conducting this in a home lab provided a more private and relaxed environment, promoting more natural behaviour and honest responses. Respondents were a mix of both men and women aged from 29 to 74 and were recruited through university staff networks using criterion sampling: adult (over 18 years of age); interest in travelling; UK resident. Sessions ranged in duration from 1 hour 15 minutes to 2 hours 45 minutes and were audio/video recorded. Video footage was employed to provide visual context to participants’ reactions to the a-book and follow-up interview responses, such as exhibited body language and how they handled and interacted with it.

Data Analysis

Data analysis consisted of reflective memos, opening coding, axial coding and selective coding. Opening coding was conducted to reveal new emerging themes and associated properties around novel a-book affordances for enhancing travel experiences.

Axial coding was then conducted to solidify and modify emerging codes by counting its occurrences in the data, such as how many participants elicited it and highlighting where similar codes could be combined with overarching themes. Using selective coding, codes were then organised under arising higher-level themes, namely *Co-creation*, *New Reading Paradigm*, and *Enriching Travel Performances*, developed from considering what new and positive affordances the a-book facilitates travellers, how this develops present concepts of co-creation and leads to enhancement of travel encounters. Reflective memos were employed throughout to consolidate and prioritise related emerging findings. Notably, some codes overlapped with all themes while some were specific to one or two. All emerging codes were subsequently visualised in a detailed three circle Venn Diagram, each representing a theme, to visually conceptualise how themes and codes related and interacted with each other—the full details of which are beyond the scope of this paper. This was used to illustrate the potential value of the a-book in informing future enhancements of travel experiences through co-creation and novel paper and digital augmentation. Table 1 details emerging themes and their most significant emerging codes for conciseness with each code's number of occurrences labelled in brackets.

Table 1. Emerging themes and associated codes with frequency in brackets

(authors' own work)

Co-creation	New reading paradigms	Enriching Travel Performances
Shared codes for all three themes		
Inspiration (12) Accessibility (8) Sharing of experiences (8) Tuning in (7) Serendipity (7) Variety (7)	Inspiration (12) Accessibility (8) Sharing of experiences (8) Tuning in (7) Serendipity (7) Variety (7)	Inspiration (12) Accessibility (8) Sharing of experiences (8) Tuning in (7) Serendipity (7) Variety (7)
Shared co-creation and new reading paradigm codes		
Multi-sensory (8) Immersive (7)	Multi-sensory (8) Immersive (7)	
Shared co-creation and enriching travel performances codes		
Preparation (8) Bookmarking (8) Personalisation (6)		Preparation (8) Bookmarking (8) Personalisation (6)
Shared new reading paradigms and enriching travel performances codes		
	Complementary multimedia (10) Tactile interaction with 3D objects (6) Book as primary platform (6)	Complementary multimedia (10) Tactile interaction with 3D objects (6) Book as primary platform (6)
Unique codes for each theme		
Enabling group syncing (7)	Greater context (11)	Changing group syncing (7) Slow(er) travel (6)

Findings

Results suggest that travellers' engagements with the a-book's physical and digital attributes (i.e. book and app) facilitate the advancement of conceptualisations of *Co-creation*, the development of a *New Reading Paradigm* (i.e. semi-immersive imaginary) that bridge physical and virtual worlds, subsequently *Enriching Travel Performances*—in the context of UK travellers going to Cornwall at least. These themes will now be discussed in greater detail below.

Co-creation

Recent conceptualisations of co-creation position the traveller as an active performer who co-creates the value of travel industry propositions (i.e. travel service offerings such as holiday packages) with stakeholders through their interaction with them (Campos, Mendes, do Valle, & Scott 2018; Prahalad & Ramaswamy, 2004a; 2004b; 2004c; Ramaswamy, 2009) and mediation of associated experiences through their social networks both online and offline. For example, the transition of the original Web 1.0 internet to Web 2.0 and its characteristic online social networking has afforded a variety of digital outputs, such as blog posts, community forums, podcasts and videos for travellers to communicate their experiences to others at an unrivalled magnitude (Tussyadiah & Fesenmaier, 2009). The a-book advances this conceptualisation of co-creation as rather a *co-responsiveness* where co-creation occurs throughout the developmental stages as well as when end-users engage with the finalised output and express their encounters through on and offline avenues to elicit its value. The a-book was configured to represent present travel performances, allowing travellers to naturally *co-respond* and illuminate its novel affordances as they negotiate travel mediation needs through new blending opportunities of familiar physical (i.e. travel guide) and virtual (i.e. smartphone app) attributes. Evidently, the a-book's unique capabilities were

established through traveller engagements and reactions to the technology, such as a new reading paradigm that appeared to enrich travel performances. The value of the a-book is therefore determined jointly through a co-responsiveness of the technology to present travel practices and travellers' subsequent interactions with it.

New Reading Paradigm

The material and virtual discrepancies between digital and printed media consequently promote a new reading paradigm. Our intuitive interaction with physical books and their apparent tangibility allows reading to primarily support Ihde's (1990) concept of hermeneutic relation where representations of the world are mediated through textual and pictorial depictions (Mangen, 2008). In contrast, digital text is intangible, tends to be viewed on devices with multiple alternative capabilities and interaction patterns (Ibid), leading to more *discontinuous fragmented reading*, whereas printed media supports *continuous immersive reading*, and, at times, *imaginary* if fictional text is present (Hillesund, 2010).

By collating print and digital components, the a-book appears to support *semi-immersive imaginary* reading. The activation of digital content temporarily breaks the reading process, but its playback can emphasise the text's meaning, through use of soundscapes or image slideshows for example. This creates *semi-immersive imaginary* reading experiences, subsequently encouraging variations on travel mediation practices, including internalised and externalised visualisations of place and associated performances (Scarles, 2016), where travellers can create their own juxtapositions of material and digital reading narratives.

Enriching Travel Performances

Previous research has indicated that personalising travel experiences and sharing these with others can increase their poignancy and overall enjoyment (Bharwani & Jauhari, 2013;

Morgan & Xu, 2009). The a-book allows travellers to negotiate their own configurations of print and digital narratives by exacting agency in the selection and playback of curated augmented content, that can be shared and accessed collectively by multiple individuals that have the Cornwall a-book app installed on their smartphone. It also provides a way of creating and exhibiting personal renditions of places to others through its facilities to include personally captured content, transforming it into a type of travel diary to mediate travel encounters.

Moreover, added content can signify the presence of valuable interpersonal relationships (i.e. friends with useful advice) and/or encourage social interaction to add additional customised content to the a-book, enhancing the meaningfulness of those associated experiences. Collectively, the a-book's personalisation, and semi-immersive imaginary affordances appear to facilitate more memorable and significant travel encounters.

Conclusion

Overall findings suggested that the a-book's development has led to a conceptual evolution of the co-creation to co-responsiveness through its dual reactionary development to current traveller practices and their subsequent responsiveness to its affordances, establishing its key value, having positive ramifications for future developments of travel mediated technologies. Although only tested within the context of UK travellers visiting Cornwall, this approach could feasibly be transferred to the development of alternative tourism services and accompanying augmented and digital enhancements to print. Consequently, the a-book's unique print and digital juxtaposition capabilities seem to expand the reading capabilities of travellers, notably specific to UK individuals visiting Cornwall in this case, enabling richer encounters by facilitating a new reading paradigm, such as semi-immersive imaginary

reading, through travellers' engagement with its digital and physical features. Recognising the contextual limitations of this study, it is plausible that results might be applicable to travellers of alternative backgrounds and destinations given the prolific use of travel guides (Tsang et al., 2011) and smartphones by travellers more generally (Wang et al., 2012). Considering this, semi-immersive imaginary reading supported by the a-book could expand the ways in which travellers build imaginary repertoires of destinations before visiting them, making them more tangible and vivid to contemplate. Moreover, the a-book's customisable features could allow for more personalised holiday experiences through assemblages of self-made and found content both before, during and after a trip, making these more memorable and meaningful. Synergising the virtual and material, the a-book shows clear potential in enriching travel experiences and introducing co-responsiveness as a new approach to co-creation.

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