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Muddying the waters: What urban waterways reveal about bluespaces and wellbeing.

Introducing waterways: therapeutic bluespaces?

> Canals can mean all sorts of things, can't they? They can mean holidays, peace,
> tranquillity, depends on the time of year, doesn't it? Exercise, peace of mind, I
> mean obviously if you've got kids, a bit dang- it's a little bit more stressful. So
> yeah it can mean all sorts of things, can't it? I mean obviously, they might be
> seedy, kind of sinister, depends where they are (adult male, Milton Keynes).

This comment suggests the ambiguous, often contradictory perceptions of the UK's
inland waterways. Whether they are dangerous or tranquil depends on time, place and
person because an environment's affects depend on how it is experienced (Conradson,
2005; Duff, 2011). Yet certain types of place have long been suggested more likely to
have therapeutic effects, with natural environments at the fore (Gesler 2005). A wealth
of research considers greenspace's role in promoting health and wellbeing (Rosenberg
2017); in comparison waterscapes are relatively neglected. Health geographers recently
put bluespaces - those including visible surface waters - under the spotlight, considering
how water enhances wellbeing (Foley and Kistemann, 2015; Völker and Kistemann,
2011a). Categorising spaces as blue identifies them as sharing something distinctive:
the presence of water. But what water is and does in these places has not been
thoroughly considered, with a tendency to assume it has similar traits everywhere
(Strang 2005 & 2014). If water's properties exist through relations it is not everywhere
always the same (Alberti, 2014), suggesting a category like bluespace masks diversity.
Here I propose thinking in terms of wateriness accounts for this variety, and the
relational nature of encounters with water which always depend on person, place and
context. Combined with attention to previously neglected waterscapes this highlights
the complexity of interactions between watery places and wellbeing, revealing how
water's affects can be simultaneously enabling and disabling.

This research contributes insight into variable experiences of bluespaces, including
perspectives from people not currently using them, whilst considering environments
under-represented in health and human geographies. Inland waterways, navigable
rivers or canals, represent engineered and designed water environments rather than
'natural' watercourses. In the UK these were pre-dominantly built for transport to

support industrialisation during the 18th century. This role was soon taken by railways, prompting the network's steady decline. Neglect left late 20th century waterways as remnants of de-industrialisation associated with blight and dereliction. Many have since featured in urban regeneration schemes, and been re-developed as leisure resources. Since 2012, most waterways in England and Wales are managed by a charity created for the purpose. The Canal and River Trust (CRT) oversees 2000 Km of waterway, associated buildings, museums and nature reserves. These waterscapes are significant public resources, freely accessible for physical recreation, relaxation and travel. In the UK 15% of the population live within 1 Km of a waterway, a figure rising to 100% in some city-regions (CRT, 2017). The network is centred on former industrial heartlands where urban populations and health needs concentrate. Yet accessibility is uneven, with only 31% of people in England and Wales stating they visited a waterway in the last year, and regular users unlikely to be younger or from minority ethnic groups (CRT 2017).

Similar human-designed and neglected urban watercourses flow through European cities (Bonetti et al., 2016; Hijdra et al., 2015; Völker et al., 2016) north America (Buckman, 2016; Haeffner et al., 2017; Tang and Jang, 2010) and beyond (Findlay and Taylor, 2006; Yamashita, 2002). But human geographers have done little to explore current use and value of these networks. The discipline increasingly redresses past neglect of wet places (Anderson and Peters, 2014; Bear and Bull, 2011; Fonstad, 2013), but inland waterways have received little attention (Kaaristo and Rhoden, 2017). In health geography, research into bluespaces is dominated by coastal waters, leaving the wellbeing effects of inland and urban waters unknown. This paper introduces experiences and perceptions of inland waterways to understanding of therapeutic bluespaces, signalling the importance of acknowledging the complex variety of places considered as such. Focusing on urban waterscapes responds to calls for consideration of the full palette of watery-spaces – not blue but brown, grey and green (Foley and Kistemann, 2015). More than expanding the range of places considered, waterways and wateriness raise questions for those concerned with bluespaces' wellbeing potential. Murky, more brown than blue watery environments demonstrate a complexity and ambiguity of relationships to water, finding it attractive and repellent, risky and relaxing. Wateriness celebrated for offering escape and refreshment, might make waterscapes intimidating, deter use, or lessen therapeutic potential.

This research addresses noted gaps in bluespace research, including attention to barriers to accessibility and variations between types of people (Foley and Kistemann, 2015). Perspectives from people not currently accessing waterways illustrate the multiplicity of experiences of bluespaces, and highlight the importance of understanding exclusion from enabling places (Bell et al, 2018). I conclude that the relationship between bluespaces and wellbeing is less straightforward than previously suggested, muddying the waters. To reduce this turbidity and pursue clarity I argue for closer attention to variations between waterscapes, recommending wateriness is used to attend to how water is experienced and becomes disabling. The next section considers existing knowledge of bluespaces and wellbeing. The empirical study of UK waterways is then introduced, presenting data focused on attitudes to water; enabling and disabling experiences are explored in relation to watery properties. The conclusion reflects on what the wateriness of waterways suggests for future investigations of bluespaces.

The relationship between bluespaces and wellbeing

Terminology around health and place is notoriously fluid and overlapping (Fleuret and Atkinson, 2007), as environment and wellbeing interact in complex ways (Atkinson et al., 2012). My focus is places' salutogenic effects, how they enhance or promote wellbeing in the broad sense of "healthiness and happiness" (Kearns and Andrews, 2010). Environments with positive health benefits have been described as therapeutic (Williams, 2007), enabling (Duff, 2011), restorative (Milligan and Bingley, 2007) and health-affirming (Wakefield and McMullan, 2005). Foley and Kistemann propose 'healthy bluespace' describes enabling waterscapes and how environments centred on water promote wellbeing (2015). They acknowledge not all water is blue, but their terminology is intentionally broad and aligned with popular imageries of water.

A popular preference for views featuring water was highlighted by Herzog's seminal study (1985). More recent research suggests these preferences continue, with aquatic views favoured in natural and built environments (White, Smith et al., 2010). But water seems to have more than aesthetic value as restoration – stress reduction and mood enhancement – are highly correlated with water (Völker and Kistemann, 2011a). Water's associations with wellbeing endure across history and space (Strang 2005), with Lourdes amongst the first place to be characterised as therapeutic (Gesler, 1996). More mundane environments associated with wellbeing include blue dimensions, for example

beaches (Collins et al., 2007), rivers (Volker and Kistemann 2013), spas (Little 2013) and island communities (Coleman and Kearns 2015). Watery pursuits including swimming (Foley, 2017; Ward, 2017) and surfing (Anderson, 2014) are suggested to have benefits beyond 'dry' physical activity. UK census data shows coastal populations are healthier, particularly benefitting deprived communities which tend to have poorer physical and mental health (Wheeler et al., 2015).

Geography has become more interested in bluespaces and wellbeing (Bell et al., 2017; Foley and Kistemann, 2015; Gascon et al., 2017). Two recent reviews identified associations, but found evidence insufficient and lacking causal explanations (Gascon et al 2015; Völker and Kistemann, 2011). Surveys suggest people appreciate freshwater bluespaces for their wellbeing benefits for similar reasons they value greenspace: social interaction, psychological benefits and physical activity (de Bell et al., 2017). Being able to see sea from an urban home may reduce psychological distress (Nutsford et al., 2016). A study of older city residents found they experienced beaches, rivers and lakes as relaxing and restorative (Finlay et al., 2015). Bluespaces' salutogenic effects seem to combine what people do around water – relax, socialise, physical activity – its sensory qualities, and wider symbolic and cultural significance (Völker and Kistemann, 2013). Living near the sea is suggested to enhance health through increased opportunities for physical activity and the sea's restorative effects (Wheeler et al., 2012). Whilst they have negative dimensions these seem to be outweighed by waterscapes' health enhancing qualities (Lengen, 2015; Völker and Kistemann, 2013).

Wellbeing as relational outcome of bluespace experiences

Despite recent attention to healthy bluespaces, evidence for associations with wellbeing remains inadequate (Gascon et al., 2015; Gascon et al., 2017). It is not clear how water promotes wellbeing, why bluespaces seem to have greater enabling power than other greenspaces, or how they become salutogenic (de Bell et al., 2017; Foley and Kistemann, 2015; White et al. 2010). Some research fails to distinguish effects of water from other environmental features (Völker and Kistemann 2011: 450). The four key health benefitting mechanisms attributed to greenspaces (Hartig et al., 2014), have been associated with bluespaces: stress reduction, promoting physical activity, facilitating social interaction and enhanced environmental quality (de Bell et al., 2017; Völker and Kistemann, 2015). But associations do not indicate causality; perhaps people seek water

because they want to socialise or exercise. Nor do they identify what water contributes beyond the enabling qualities of open spaces and outdoor environments generally.

Water's restorative power has been attributed to appealing aesthetic qualities and sensory experiences (Völker and Kistemann, 2011a). It is associated with fascination (Nordh et al., 2009), being relatively still yet interesting because of movement and luminescence (Völker and Kistemann, 2015). Ripples and flows, particularly when combined with reflective properties seem to encourage contemplation, or the pleasure of sitting and watching (Völker and Kistemann, 2015). Visual effects combined with sounds of water flowing (White et al., 2010), clarity and associations with freshness (Herzog, 1985) are identified contributors to water's positive wellbeing effects. Others suggest it contributes to sense of place through its strong emotional and spiritual significance (Völker and Kistemann, 2011a). But these explanations focus on waterscapes in rural and coastal locations, neglecting negative sensory experiences of water - the stench of a stagnant pond - and variations in how they are perceived - the non-swimmer fearful of rushing torrents.

Geographies of bluespaces risk repeating errors which treated greenspaces rather homogeneously and as having inherent properties (Bell et al 2018; Duff 2011, Milligan and Bingley 2007). Early discussions of therapeutic landscapes regarded them as inherently beneficial, neglecting differences between people's experiences and that places can be simultaneously "healthful and hurtful" (Williams 2007: 2). This reified natural environments, masking which aspects of spaces are enabling, and neglecting active shaping to make places enabling (Duff 2011; Pitt 2014). If greenspaces are scary to some, there is nothing inherently therapeutic about their spatial qualities (Milligan and Bingley 2007). For example, Finlay et al. (2015) found older people in the same city held contrasting attitudes towards bluespaces' therapeutic effects. Conditions which facilitate therapeutic experiences such as control of one's own schedule are variably distributed, hence the need to consider socio-economic factors (Conradson, 2005). Such realisations prompt a relational approach which considers how individuals experience a place which may become therapeutic depending on context: "positive experiences of these places always derive from particular forms of socio-natural engagement. They are not in any sense pre-determined outcomes" (Conradson 2005: 338). Attention shifts to the nature of spatial encounters and dynamics which *may* result in someone feeling

enabled, or disabled. Therapeutic places are therefore porous, hybrid and relational with emergent properties which shift over time (Bell et al., 2018).

Understanding enabling experiences requires attention to how outcomes are shaped in specific interactions. For healthy bluespaces the interplay of the space, the activity of being there and its physical and emotional dimensions seem to matter (Foley, 2017). Attention to how people experience bluespaces through activities in, on, and around water suggests strong salutogenic potential arises through co-incidence of four beneficial modes of experience (Foley and Kistemann, 2015). First, is embodied, sensory engagement with water, including immersion. Second are inter-subjective experiences through group interactions in these environments and activities. Then is the experience of movement through physicality and exercise. Fourth, is water's symbolic power through meanings linked to culture and identity. As highlighted in close study of young anglers whose bluespace experiences ease stress, restoration comes from active engagement with water through bodily practices of casting the line, watching and listening (Djohari et al., 2017). The interaction of body, place and activity is enabling; the waterscape is not passive as water's phenomenology makes these particular experiences, and the effects of different types of water are not equal (Djohari et al. 2017; Foley 2017). Studying bluespace experiences like swimming and angling, and water's potentially ambiguous meanings (Lengen 2015), illustrates the need for a relational perspective which recognises that enabling effects are not inevitable but emergent. Landscape experiences are very individualised so a place is rarely inherently restorative or risky (Milligan 2007). Relationships to bluespace are likely to vary at stages in the life course (Thomas, 2015), whilst some are wholly excluded (Bell et al. 2017).

Despite moves to reflect the 'darker' side of therapeutic places (Bell et al. 2018), less positive bluespace experiences are often masked by emphasis on beneficial impacts (Foley and Kearns 2015). None of the 35 studies reviewed by Gascon et al. (2017) addressed negative impacts such as drowning or pollution. Even for swimmers the joy of immersion is attended by the risk of its negative, even dangerous facets; water can disable human movement and is inaccessible for those without suitable physical ability (Foley, 2017). This should prompt attention to contested aspects of therapeutic bluespaces, including risk averse public discourse which emphasises water safety (Foley and Kistemann, 2015). Bluespaces are not un-problematic, for example an urban German river associated with anti-social activity or stressful congestion (Völker and

Kistemann, 2013). Beaches are risky because of exposure to health issues associated with sunshine (Collins and Kearns 2007). Some older people in Vancouver expressed safety concerns and fears around bluespaces, whilst lack of useful facilities prompted negative experiences (Finlay et al., 2015). Whilst older people enjoyed island life for the sea's continual proximity, it also caused isolation and feeling stuck (Coleman and Kearns, 2015). Although associated with freedom, water carries meanings associated with foreboding, giving it a pervasive ambiguity which cannot easily be termed therapeutic (Lengen, 2015). That waterscapes are unlikely to hold unambiguously positive potential highlights the need to attend to the full complexity of how they are experienced. Exploration of the relationship between bluespace and wellbeing also requires extension in a further dimension – towards a broader range of waterscapes and waters.

Varied bluespaces

Relational perspectives acknowledge interaction between person, other people, place and activity as source of enablement (Kearns et al., 2014). This suggests not all water environments are the same, and that certain forms of waterscape may be particularly enabling. For example, natural courses and blue water assumed as cleaner are often pleasing (Völker and Kistemann, 2011a), whilst water in industrial settings can be perceived negatively (Sander and Zhao, 2015). In its white, frozen forms water is particularly hazardous for the less physically mobile (Finlay, 2018). But this variety is under-represented in existing wellbeing studies which feature coastal more than inland waters (Gascon et al., 2017). Rural freshwaters have been considered (Augustin and Cackowski-Campbell, 2011; Coleman and Kearns, 2015), urban ones less so. This follows a pattern of assuming urban environments hold less restorative potential (Karmanov and Hamel 2008), overlooking wellbeing benefits of engineered or urban waters in brown, grey spaces.

As Foley and Kistemann (2015) note, not all water is blue as it comes in "myriad shades and forms (grey, brown, dark, oily, muddy, clear)" (2015: 158). This palette is under-explored, with water too often assumed as blue. But different waters affect people differently, with variable implications for wellbeing. Clear blue water is preferred over tainted brown or stagnant water (Herzog 1985), whilst waterscapes with signs of neglect or anti-social behaviour are found less restorative (Wyles et al., 2016). Living near the

sea may have stronger effects on mental health than inland waters (White et al., 2013), making islands particularly potent (Coleman and Kearns, 2015; Kearns et al., 2014). Young people say angling at a swimming pool would not be as beneficial because it is not like a river (Djohari et al., 2017). Such contrasts suggest not only that bluespaces are not inherently therapeutic, but that *water* is not all the same, differing in ways which matter to human experiences.

A small amount of research focused on urban waterscapes identifies differing attitudes according to the waterbody, with those living near rivers more likely than those neighbouring canals to cite them as positive influences on quality of life (Haeffner et al., 2017). Canals seem to be regarded less favourably than other urban bluespaces in terms of visual complexity and amenity (Völker et al., 2016), but such preferences are inconsistent (Bonetti et al., 2016; Haeffner et al., 2017). Regenerated urban waterways can be perceived negatively as pastiche or exclusive, over-writing past landscapes and personal memories (Coles et al., 2013). In urban areas the mere presence of water seems insufficient to promote positive perceptions as preference, usability and accessibility vary according to spatial design and layout (Buckman, 2016). This suggests issues specific to urban waters might affect their potential to enhance wellbeing. There is a need for finer consideration of different waterscapes (Haeffner et al, 2017), including urban ones. Nuanced attention to how urban waters could benefit city residents, and how to enhance their stress-relieving potential is lacking (Karmanov and Hamel, 2008; Völker and Kistemann, 2015). Addressing this is significant given concentrations of disadvantaged populations in urban areas, for whom greater access to therapeutic encounters could be beneficial and help redress environmental injustices.

In summary, existing research lacks qualitative detail of causal processes linking water and wellbeing. Close study of "emotional and experiential responses to bluespace" is needed for insight into *how* water influences wellbeing, unpicking its influence from other environmental features and salutogenic effects (Völker and Kistemann, 2011b). Secondly, too few studies acknowledge the relationship between bluespace and wellbeing is not straightforward, as negative aspects may accompany or overpower positive potential (Völker and Kistemann 2013). Such contestation is best explored through relational approaches open to the complexity of experiences, attending to the interaction of person, place and context (e.g. Brown et al. 2012). Thirdly, bluespace research has been overly homogenising in the range of places and people considered. Coastal

environments dominate, followed by rural freshwaters, neglecting urban waterways. There is a need to discern the influence of ethnicity, age, class and other social differentiators (Raymond et al., 2016; Foley and Kistemann, 2015; Völker and Kistemann 2013), particularly as accessibility seems unequal (de Bell et al., 2017; Thomas, 2015). Perhaps most neglected to date are those not engaging with enabling bluespaces, so we do not know what prevents people accessing them (Foley and Kistemann, 2015). Bluespace research could usefully connect with geographies of difference to reveal those constrained in the attempt to enhance their wellbeing (Bell et al., 2018; Foley and Kistemann 2015).

Advancing understanding of the relationship between bluespace and wellbeing therefore requires a relational view, sensitive to variations between people, attentive to what they do - or do not do - around water. Understanding their wellbeing impacts requires closer attention to the variety of waters and places comprising bluespaces, extending the range of waterbodies considered, and interrogating less salutogenic characteristics. I suggest this begins through closer attention to water, what it is and does, how people relate to it. Rather than assuming water is always everywhere the same, I propose the term wateriness helps attend to what is distinct about places with water, whilst recognising this varies across space, time and through interaction with other materials.

Using wateriness to muddy the blue

A focus on how bluespace enhances wellbeing has over-emphasised water's salutogenic characteristics, implying that water is everywhere the same. Strang suggests a universal tendency to celebrate water is possible because its fluidity, transmutability and aesthetic qualities persist in different environments (Strang, 2005). She identifies consistent qualities appreciated across cultures; water is luminous, hypnotic, stimulating calming, characteristics identified as affording therapy (White et al 2010, Volker and Kistemann 2015). But does water have such consistent properties, is it all the same? What if properties do not belong to materials but to relations? (Barad, 2007). If "water is always in relation" it has no inherent qualities, rather these emerge through relating in particular contexts (Alberti 2014). Following Barad (2003), objects and their properties do not pre-exist relations, but emerge through intra-action, always specific to a situation. Water is not encountered in isolation as pure H_2O, but in particular places, always interacting with other materials – the glass of the beaker, the pebbly shore.

Situations shape its properties so water is inherently multiple with "diverse and fluid materiality" (Yates *et al.*, 2017). Barad's approach to matter encourages us to consider not being but becoming (2003), water as a doing more than an object. Qualities and meanings associated with water arise from interactions, so are never quite the same: "If water is always in relation, we can expect new properties from new relations" (Alberti 2014: 158).

Water then is not everywhere, always the same; waters in ditch or flowing mountain stream are very different in look, smell, sound and motion. This is obvious in colour variations: muddy solution in cloudy brown puddle versus clear luminosity of a turquoise mountain lake. It is perhaps useful then, to think of wateriness as a loose category of states with similar capacities which manifest variously, what watery places tend to have in common that distinguishes them from dry environments.[1] To understand what watery places afford and how they affect people means considering specific contexts, how water is interacting - making earth soggy, reflecting blue sky - to cause characteristics we experience, as a particular mode of wateriness. Things float in water because of buoyancy - the interaction between density of object and water. Speed of movement varies with friction. Under sunshine and clear sky waterbodies appear bright and blue. States of wateriness result from interaction with other materials, and always exist through such relations, including those with people. Significant to wellbeing is that feelings about wateriness depend on the situation: wetness is refreshing during a swim on a hot day, but uncomfortable and chilling as wet shoes trudging in the rain.

How wateriness affects people and their wellbeing therefore has to be interrogated from a relational perspective, without assuming a consistent state or outcome for either person or bluespace. This represents two dimensions of relational thinking, firstly regarding bluespaces' therapeutic qualities as emerging from dynamic interactions of human and nonhumans, an approach now well established (Bell et al 2018). Secondly, and more novel, regarding bluespaces' watery qualities - which might contribute to therapy - as equally emergent, variable and dynamic. Experiences of wateriness cannot be considered in the abstract, isolated from a place's other features. This becomes particularly apparent considering urban waterways where water tends not to exhibit

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[1] This is inspired by Head and Atchison's (2012) coining of *plantiness* to denote a loose assemblage of traits associated with plants, a terminology intended to enable conversation about what they tend to share without implying they are all the same.

qualities Strang suggests are common, does not "shimmer and flicker with constant movement" (2015: 49). Canal water is heavy with sediment, brown green or grey, rarely - if ever - blue, often littered with debris, sometimes emitting odours (Figure 1). It does not flow so much as occasionally ripple or bob. Inland waterways therefore offer a useful addition to the range of places considered as 'therapeutic bluespaces', highlighting the need to consider the complexity of experiences of water, and variation in types of watery places. Urban waterways also reveal elements of wateriness which can limit its enabling potential.

Insert Figure 1 here.

Researching waterways and wellbeing

The research reported here forms part of a programme aiming to understand barriers and motivations to use of waterways in England (2015-2017). Four case study locations representing a range of urban waterway environments were selected in discussion with Canal and River Trust (CRT). Three locations centred on canals, one on a combination of canal and navigable river. Each is publicly accessible with waterside access for pedestrians and cyclists, and regulated access for watercraft such as boats and canoes. Fishing rights are subject to permits from CRT or local angling clubs. CRT do not encourage casual swimming in their waterways, and do not provide facilities for openwater swimming at the case study locations.

At each location a survey of current towpath users was undertaken to characterise patterns of use. Their profile was compared with the population living within 1Km of the waterway to identify groups less likely to be using waterways. These became priorities for detailed qualitative research to understand what prevents people accessing local waterways. Participants were recruited through community organisations working with target populations around the waterways, such as youth centres, drop-in groups for older people, and tenant support facilities run by social housing providers. This facilitated participation by people living near to waterways without requiring that they already accessed them. Groups in Blackburn and Leicester were participating in summer activity schemes run in partnership with CRT, offering introductory waterways experience such as volunteering days, guided walks, and canoeing taster sessions. These participants engaged with researchers before and after activity sessions, to track

changes in attitudes. Staff of community organisations (n= 12) were interviewed to gather reflections on their communities and initiatives enabling access to waterways.

In total 84 people participated in sessions discussing perceptions and use of waterways, and completed a questionnaire providing demographic information and background on use of waterways. Participants ranged from teenage to over 80; almost half were from minority ethnic groups, just over half were female. A majority were not regular waterway users; 30% had not visited one prior to the research. Those already accessing waterways were likely to be adult or older, and more likely to be White than of another ethnic background. Mixed qualitative methods (interviews, group discussions, participant observation, photo elicitation) were adapted to each group, for example, youth workers recommended varied sessions including activities such as drawing. Researchers sought to elicit perceptions without prompting the topic of wellbeing: "What do canals mean to you?", "Is there anything which prevents you going to a waterway more often?", "How could waterways benefit you and your life?" Interviews and discussions were fully transcribed and analysed thematically; material related to themes of water and wellbeing is presented here.

Table 1 Research participants

Location	Groups involved
Blackburn, Lancashire	1) Teenagers on National Citizen Service including volunteering with CRT; one mixed gender group, one females pre-dominantly of South Asian heritage. 2) Adult women attending community craft group.
Leicester	Families and teenagers participating in introductory waterway activities (walk, canoeing, boat trip) organised by Somali community organisation in partnership with CRT.
Milton Keynes	1) Adults attending parent-toddler group based near canal. 2) Women attending Sure Start Centre serving parents and under 4s in disadvantaged areas; participated in walk to local canal organised by research team.
Tower Hamlets, London	1) Teenagers attending youth centre located near canal. 2) Adults and older people attending community programmes operated by housing association in the same area.

Waterways and wellbeing

This section presents findings on the theme of wellbeing, positioning waterways in relation to previous work on therapeutic bluespaces, before moving on to consider in greater detail the wateriness of waterway experiences. The intention is not to compare experiences or types of people or waterway, rather to highlight the difference water makes, its ambiguity, and the complexity of how this interacts with wellbeing. Research discussions did not explicitly ask participants about water and wellbeing, but both emerged as prominent themes. The initial prompt was: "What comes to mind when you think of canals?"[2] The first answer was usually "water", which was also ranked by participants as their strongest association with canals. Some groups specified "dirty water" as canals' prime characteristic. Potential to enhance wellbeing emerged as a significant theme when participants were asked to consider what canals mean to them and how they could benefit from them. Mental health benefits were more commonly noted than those related to physical activity. That themes around wellbeing emerged without prompting illustrates waterways are publicly recognised for their enabling potential. CRT's latest survey suggests 56% of users visit a waterway to enhance physical wellbeing, whilst 90% see them as good places to 'relax or de-stress' (2017). Some research participants reported visiting canals for these reasons.

Many of those familiar with urban waterways identified them as pleasant places:

> F: I think they're quite nice, usually I go maybe twice a month, there's a canal down in Wolverton where I live, and a river and we'll go down and I think it's lovely, and he loves it but he also tries to jump in it!
> Q: What do you like about it?
> F: Just the fresh air and the nature, and you know, trains go by and he loves the trains and you can see the ducks in the river, and it's just nature, they get muddy and it's fun and I like that (adult female, Milton Keynes).

> The fact that it's quite peaceful really, everywhere else you go it's always busy, whereas there it is quite peaceful so you haven't got that - you can sort of kind of lose yourself (adult female, Milton Keynes).

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[2] The term waterway was unfamiliar to some so 'canal' was used during discussions. Some young participants requested clarification of what canals are.

The four ways bluespaces are suggested to enhance wellbeing (Volker and Kistemann 2013) were associated with canals: physical activity, social interaction, psychological benefits and environmental quality (Table 2). People suggested multiple factors combining to enhance wellbeing:

> More positive outdoor living, more enrichening experiences for the kids, just makes you feel - because sometimes in Milton Keynes, you can feel quite isolated, [in a] quite kind of indoorsy. So I think it would just provide another aspect of something more to do in Milton Keynes, make it feel a bit more community-led (adult female, Milton Keynes).

This suggests part of waterways' value is the coincidence of multiple enabling characteristics.

Table 2: Quotes illustrating modes of waterways' wellbeing benefits

Physical activity	*Social interaction*
Q: How could the canal improve your life? F1: Could have some like canoeing activities. Like sport activities. F2: It can improve your health like for instance doing canoeing. F3: It'd be an enjoyable activity, like if you go with your family. F2: Bike riding. It's like family activities too. F3: Feeding the ducks. (young females, Blackburn).	"Where there's a group of people walking I think that's good because you're meeting, they'll all have very different backgrounds and very different stories so it's nice to get out to different groups and meet people like that." (adult female, Blackburn)
Psychological benefits	*Environmental quality*
Q: Did your ideas of canals change after going there today? F: Um, well, I should think so, because emotionally, you go there and then you come back here emotionally refreshed and things like that, so it is good.	"Round here, it's probably the most polluted part of the country, traffic wise. So I like to get away from the traffic. By going to the River Lea you are a little more away from it." (adult male, Tower Hamlets)

(adult female, Milton Keynes)	

Waterways were noted as contrasting other places where people spend time, a trait favouring therapeutic experiences (Pitt 2014). This woman lived in a congested inner-city area and had few opportunities to explore more rural places like those she saw on a boat trip:

> F: When you go in the canal, you see many things and the environment in the city, and that the river's different. You see many green, many animals, many things, it's different. Your mind is not watching the cars, houses and something like that, something else.
>
> Q: So you see a very different place?
>
> F: Very different place, yes.
>
> Q: And you think that's a good thing?
>
> F: Yeah because you know, the brain sees something different. I like green things, I like to see the animals because you know, when I see the animals, you know, horses, sheeps, dogs, many things different (adult female, Leicester).

One London resident liked walking to work along the canal because it is a unique urban environment:

> It's nice to - well you can look down the canal. For me there's a real sense of space. So if I'll just be walking along the road the other side of this wall for instance you wouldn't be able to see this far, you wouldn't have almost a perfect horizon down there and when I come to the river itself, again you've got this big open space (adult male).

Waterways' spatial characteristics were significant to their positive effects, suggesting their enabling potential (Duff 2011). However, many features highlighted as affording wellbeing benefits are not exclusive to bluespaces, being associated with outdoor environments more generally. Many adults identified time at a waterway as 'a good thing' because of being outdoors, getting 'fresh air' or being 'around nature'. A strong narrative from parents was using them to get children outside:

> spending time outdoors is good for children I just think because... obviously because they're getting the sun, the vitamin D, they're getting healthy, they're doing exercise but they're also meeting other people and coming in to contact with

other people but um and it's better than just being on technology all the time (adult female, Blackburn).

These benefits could be achieved elsewhere, and several parents suggested canals are less appealing because children cannot run as freely as in parks.

Other characteristics were perceived to advantage waterways over other outdoor environments, including opportunities afforded by water. Prime amongst these were the pleasure of watching or participating in water-borne activities (boating, canoeing), and being calmer than other public spaces:

> M1: It's like never fully packed.
>
> M2: Calm.
>
> M3: It's nice and chilled on the canal. Stick your head in the water and you're sorted.
>
> M2: Nice and peaceful.
>
> M4: Peaceful.
>
> M2: Nice and peaceful and clear.
>
> M3: Canals are a beautiful place, you can just sit back. Take a look at life think 'yeah'.
>
> M4: They're somewhere you can just…look at it…you can just look at it and think right I'm just going to chill out, just think right. You can think about all of your problems (young males, Blackburn).

Parents in Milton Keynes noted that bluespaces like the city's large lakeside park are busy, whilst the canal offers quieter visits. Older people, others with limited mobility, and parents wheeling pushchairs, favoured them as level exercise routes. But this was counter-acted by perceptions that towpaths are uneven, or too narrow to negotiate except single file. These nuances and contrasting perspectives highlight that different bodies finds a place differently enabling, with therapeutic experiences dependent on interaction of environment and person (Conradson 2005)

So far it is apparent that waterways are associated with wellbeing benefits, even for people not using them as such. Secondly, they have potential to enhance wellbeing in the four ways associated with therapeutic green and bluespaces. Wellbeing benefits were not all specific to waterways so might be gained in other outdoor places. This is significant because discussions identified multiple negative traits deterring people from visiting waterways, suggesting other environments may be favoured. Negative

perceptions were particularly prevalent amongst those not currently using waterways, or who had never visited one. This contrasts with research demonstrating positive preferences for environments including water, and highlights that no waterscape is inherently enabling as therapeutic outcomes depend on the person. There are signs that urban waterways are unlike other waterscapes, perceived less favourably. The common factor is wateriness, but this is not blue everywhere. The next section details perceptions of wateriness, what water does, how this affects use of waterways and limits their enabling potential.

Putting the water into waterways

I have proposed wateriness to denote the difference water makes, a loose category of states arising through interactions with water. Research participants' discussions of waterways revealed multiple dimensions of wateriness, experienced positively and negatively. Next I highlight those pertinent to wellbeing, before detailing sensory experiences specific to wateriness, then those centred on buoyancy and wetness. As noted above, water's therapeutic qualities have long been celebrated; some participants appreciated these in relation to waterways:

> It does have a very good effect on your state of your mind, you know, when you're outside, near water […] canals and rivers are relaxing. In general I don't really go out but I have that idea of relaxation because the water itself is you know, it has that very therapeutic effect. It is very good on mental health and wellbeing of a – the person so canals and rivers are relaxing (adult female, Blackburn).

This woman was not currently using waterways, but other adults and a minority of young people said they appreciate sitting by them for the relaxing water; water makes them "feel very peaceful" (young female, Tower Hamlets). Restorative properties were discussed by older men in Tower Hamlets:

> [name] said earlier about water being relaxing. I find it incredibly therapeutic. And that's probably why we walk a lot to Greenwich a lot or the Thames. That's probably why we walk along the front at Southend. That's probably why we did the Thames estuary walk at East Essex. So there's always water involved.

Chances to be *on* the water intensified restorative effects, for example, a Leicester participant described his stressful life being relieved by going on a boat which "ease[d] my problems out". Certain modes of movement are therapeutic (Gatrell, 2013; Pitt, 2014); water-borne mobility seems to be one.

These descriptions echo characterisations of water's restorative effects, through its combination of stillness and motion, and the symbolic significance of fluidity (Nord et al., 2009; Völker and Kistemann, 2011a). However, these qualities were not always perceived positively. Whilst watching a video of the waterways through Leicester one young man shouted: "it's boring, it's just water". The sense they offer nothing to do was a strong theme amongst the majority of young participants; they found the presence of water insufficiently appealing as it does nothing interesting. Asked to suggest how they would like to use waterways they emphasised activity, preferably on the water, ideally at speed. These contrasts illustrate water is not inherently enabling as its potential depends on individual needs, hence the importance of relational perspectives mindful of water's ambiguity (Lengen, 2015). Water makes a difference to waterway experiences, but not always through restoration, particularly as people perceived these waters to lack the positive aesthetics Strang highlights (2014). Less blue, more brown-green, inland urban waterways may be less likely to promote wellbeing. In the next section I detail multi-sensory experiences of waterways and highlight how wateriness is experienced through specific interactions.

Sensing water

One beneficial sensation associated with waterways was feeling refreshed: "you go there and then you come back here emotionally refreshed and things like that, so it is good" (adult female, Milton Keynes). Freshness is a sensation commonly associated with water (Herzog 1985). But many participants imagined and found waterways not to be very fresh, a key deterrent to visiting. Young people commented on them being smelly, with bad smells a common complaint following canal volunteering in Blackburn. A focus on water's blueness has perhaps detracted from sensations like the haptic and olfactory (Bell et al., 2018), but odour influences therapeutic experiences (Gorman, 2017). Smell may be a neglected influence on whether bluespaces are accessed, given that negative comments about waterways being smelly were more prominent amongst those least likely to visit. Alternatively, perceiving waterways as malodourous may derive from stereotypes rather than direct experience, a description intended to convey associations with general unpleasantness. H_2O may be odourless, but wateriness is not, due to interactions with smelly substances and social meanings, in some places resulting in sensations with reduced enabling potential.

Imagining waterways to be smelly was closely linked to the sense they are dirty, the water unclear. Brown wateriness also results from interactions with other materials to shape potentially negative encounters. One CRT staff member identified a common pre-conception: "How many times I get told that? That the canal's dirty because you can't see it, because it's not clear water." Heavy sedimentation is common because canal water is not freely flowing, meaning eroded material remains suspended, made more visible when churned by boats. Surrounded by buildings, narrow urban waters are often in shade, reflecting browns and greys rather than blue sky, particularly during typically overcast British weather. Few people understand the water's colour or opacity, so assume dirtiness:

> F: I have sometimes the impression that it is not clean.
>
> Q: Not clean. OK, when you say not clean, what do you mean?
>
> F: I think that uh, I don't know but the colour of the water (adult female, Tower Hamlets).

Lack of transparency prompts concern:

> Q: What would you say you think of canals in general?
>
> M: Dirty, very dirty. The water's, like green, I wouldn't be surprised if there's a few bodies underneath it.
>
> Q: That's a nice thought isn't it?
>
> M: Well they say for every mile of the canal there's at least 5 bodies (young male, Blackburn).

These perceptions were sometimes based on mis-understandings, for example none of the young women in Blackburn had been to a canal, so understood them to be sewage channels, hence imagined them as smelly, dirty and bacteria laden. Their first visit showed the canal to be nicer than this, but confirmed the water as brown and littered. 'Dirty' can convey more than sensory characteristics, denoting social meanings such as neglect, particularly given strong associations between canals and unsavoury behaviour such as drug taking. One young woman said litter around a canal was a bad sign because "good people don't do that". Expressing concern with mess can signify a place associated with anti-social behaviour, criminality or lack of neighbourliness (Derges *et al.,* 2012; Innes, 2004). These examples demonstrate how water interacts with material context to produce a particular form of wateriness, which interacts with social and individual meanings to produce negative perceptions.

Sights and smells were prominent in discussion of wateriness, whilst watery sounds and aural perception were largely absent as these waters lack rushing and bubbling noises enjoyed at streams or rivers (White *et al.,* 2010). Nor did people sense canal water haptically as swimming was prohibited or deterred by water-quality and other risks. During a boat trip in Leicester young men seemed compelled to trail their hands through the water, a pleasant new sensation for them on a hot day. But they had been told to keep their arms within the boat so were repeatedly chastised. These absences suggest some bodily experiences of wateriness lack the range of therapeutic sensations associated with healthy bluespaces (Foley and Kistemann 2015). Therapeutic effects could be limited by such constraints on behaviour, or perceptions that waterways' wateriness is aesthetically unappealing, also because it has several disabling traits as detailed next.

Floating, suspending and sinking

The previous section highlighted interactions between water and materials which result in negative visual and olfactory sensations of wateriness. Another form of interaction is relative buoyancy determining whether materials sink or float. Wateriness flows, carrying with it things which float, sometimes creating pleasant scenes:

> I find it really relaxing to watch, and when you see the barges go by and stuff like that and you're like give them a wave and yeah it's just nice, it's a nice place to be (adult female, Milton Keynes).

Ducks and boats moving across the water surface were popular sights which many said attracted them to visit. But litter also floats, and was common around waterways:

> sometimes they smell as well or, even sometimes you can see dirt is on the surface as well (adult female, Tower Hamlets).

Floating rubbish was part of what made these seem dirty environments, an aspect of wateriness resulting from relations between water and solids, noted as unappealing or detracting from positive dimensions.

Buoyancy is a relational outcome so not all materials float, hence the suspension of solid particles making canal water seem brown and dull. Poor visibility combined with a sense of depth can be sensed as impenetrable mystery conveying fore-boding (Lengen 2015). Things heavier than water become submerged so cannot be seen from the surface, hence the popular narrative of dead bodies found in canals. Young people like the one

quoted above, and adults more familiar with canals recounted stories of bodies found in them, of people being sucked under the surface by boats or locks. Young volunteers in Blackburn pulled weed and litter off the canal floor, and were equally horrified and impressed by what surfaced. Submerged materials were off-putting, rarely enough to prevent someone visiting but enough to taint a walk or compel someone to favour cleaner spaces.

The risk of a *person* becoming submerged could be an absolute barrier to visiting a waterway. Some adult and young participants were afraid to visit because they cannot swim, and feared risks from falling into water. Those less familiar with waterways were not aware they are rarely more than a few feet deep, reducing the risk of full submersion, particularly for adults. But depth was not the whole issue:

> F: The canal isn't very deep.
>
> F2: Yeah, yeah my mum did say that it's not too deep but I know -
>
> F3: It's something that people associate the canal with though isn't it?
>
> F: Yeah of course it is. Well it's water isn't it, and you can drown if you fall badly, it's as simple as that isn't it?
>
> F3: Cycling near the canal immediately you're thinking, you hear all those stories about someone diving in on purpose but getting tangled up in weeds or trollies and not being able to get up, it would put me off but I wouldn't be daft enough to jump in the first place (adult females, Blackburn).

Water can disable human bodies (Foley 2017: 49), so submersion was perceived as risky, even for those who swim.

Water's ability to suffocate might become a weapon; stories of people being pushed into canals emerged at each location. Those who feared encountering strangers or criminals on a towpath were particularly wary because wateriness increases the risk of harm:

> I think when you're alongside canal because its water, you find it - whether you're up to defending yourself it's just hazardous isn't it (adult female, Blackburn).

Canals were regarded as relatively constrained environments – narrow paths edged by buildings with few exit points – making wateriness more problematic here than elsewhere:

> Q: Anything that stops you or puts you off going to the canal?

M: Some of the towpaths look a bit narrow and overgrown to me. That and proximity to water puts me off because I don't swim.

Q: Right. So you're a bit wary of getting too close to the water?

M: I'm very wary! (adult male, Tower Hamlets).

Parents of young children were particularly aware of the interaction between edge and water, making many reluctant to walk or cycle on narrow towpaths along unguarded canals. Water *per se* was not deemed risky - a local lake is a popular destination for walks and taking children to play, but there it is easier to stay back from the edge. In comparison towpaths are problematic:

You have to watch the kids because there is not fencing there or anything and um, my dad literally fell into a canal because he thought- it was his first time here and there is this like grass coming out, so he thought that he could walk there so literally he jumped right in! I'm like 'what are you doing?' He was: 'I wanted to get to the water!' I'm like: 'no the water starts here! I know it doesn't look like!' So yeah I'm a bit worried about [my son] in the future, I have to be careful (adult female, Milton Keynes).

Parents who walked towpaths found it difficult to move along this confined space as a family group, particularly with children less able to safely negotiate it:

I am, not like, mortally afraid, but I am really aware because you try and keep an eye on everyone, they will just wander in, they will just do whatever […] it's just like [the] having the actual edge next to the canal, if it's jagged and then the grass might go over and they don't know where the actual edge is, and it's like 'stay on the path!' you know, the whole time (adult female, Milton Keynes).

The combination of unguarded edge and narrow path makes waterways' wateriness and its potential to submerge or suffocate particularly risky (Figure 2).

Insert Figure 2 here.

This section has shown how wateriness and its interaction with solidity in the form of boats, litter, bodies and edges makes waterways risky places where it can be difficult to relax or unpleasant to spend time. At worst waterways are wholly disabling, causing loss of life, potential which heightens risks from encountering wateriness. Such risks are not universally perceived as problematic, nor are they unique to waterways, but their spatiality and popular associations with death shape a wateriness perceived as particularly risky. Perceived risks around wateriness result from interactions between

water and spatial characteristics, and are heightened by the presence of other people (e.g. muggers), or in situations (e.g. narrow paths) which make submersion more likely. This prevents some from using waterways to enhance their wellbeing, or pushes potential users to alternative open spaces.

Saturation and solutions

Wateriness is not confined to the channel, and its presence elsewhere further inhibits waterways' wellbeing potential. Wateriness was problematic when too close to people, particularly as puddles or precipitation which make people wet. Wet weather was not the most significant barrier to use of waterways, but did feature, particularly for young people, many of whom were not pre-disposed to being outdoors:

> Q: What puts you off going?
>
> M: The weather because if I'm walking by the canal - canals usually don't have shelter so I would get wet and then I would be cold.
>
> F: And you could slip (young people, Tower Hamlets).

Even adults who enjoy outdoor leisure were deterred by the prospect of wetness: "When it's bad weather you don't have the motivation to go, you lose the desire" (adult male, Leicester). This was exacerbated for those with young children:

> I probably should spend more [time outdoors] but I guess that's just with having a one year old that you want to protect a bit more. If it's raining you don't want to go outside (adult female, Milton Keynes).

If water gets too close it can saturate skin and clothes, a mode of wateriness resulting from interactions between person, materials, and precipitation likely to be negatively experienced or to disable outdoor recreation.

Wateriness on the ground as puddles was also deemed out of place. For parents this was problematic because of interactions between water and path. Water pooling on soluble ground forms mud which makes clothes and people dirty: "I don't want him walking all over or falling over or getting muddy" (adult female, Milton Keynes). Others were concerned about risks: "I could slip into the canal if the ground was slippery" (young male, Tower Hamlets). Adults familiar with a towpath noted problems with soft surfaces getting wet:

> The boggy bit is just north of Springfield Park going up towards Stamford Hill and it is horrendous. It was just like you go up on your bike and literally you feel

quagmire (adult male, Tower Hamlets).

In combination with a high level of use, particularly by cyclists travelling at speed, sogginess made the towpath unusable at certain times for fear of falling. Such risks and incivilities were associated with wateriness in and around the channel, and its disabling potential. Watery qualities such as the potential for saturation and slipperiness are not exclusive to waterways, but their spatial characteristics - narrow paths, poorly defined exposed edges - heighten the sense a disabling experience is likely. Wateriness which in a green rural environment may be pleasing, is in grey built environments problematic.

This section has revealed multiple dimensions of wateriness, not all enabling or likely to attract people to waterscapes, with some actively deterring potential visitors. Wateriness has multiple dimensions, its affects emerging from interactions with other materials and energies, with some configurations resulting in less positive qualities such as muddiness, opacity and risk. These more disabling characteristics may be particularly prominent at, or strongly associated with urban waterways, but might arise at other bluespaces. They are also of varying concern depending on the individual, with vulnerable groups such as older people and non-swimmers affected more strongly. As the opening quote suggested, waterways can mean many things so they are not either enabling or disabling – wateriness has potential for both depending on context, activity and person. The outcomes are doubly relational, firstly because the particular form of wateriness results from specific configurations of water, other materials and meanings. Secondly because how enabling a waterway's wateriness is depends on person, place and encounter.

Conclusion

There are many waters, not only many meanings of water (Alberti 2014: 162).

By definition, what unites and distinguishes bluespaces is the presence of surface water (Völker and Kistemann, 2011a). But as urban waterways highlight, not all water is blue. This is significant because it is qualities associated with blueness - freshness, fluidity, luminescence, rippling - which seem particularly salutogenic. But these qualities are not inherent to water, and are not its only properties. Attending to waterways takes us beyond the blue to consider a wider palette of waterscapes, highlighting how their enabling potential varies. This reiterates the need for a relational perspective on

therapeutic bluespaces, recognising that wellbeing may or may not be enhanced depending on how person and place interact in particular encounters (Conradson 2005). Water's enabling affects are also relational outcomes shaped by its interaction with materials like pebbles, or energies like light, which are not present in all waterscapes. Wateriness can seem brown, stagnant, opaque, and smelly, having more neutral or negative effects on wellbeing. These aspects are particularly prominent in the context of urban waterways, so studying such places reveals elements of wateriness which limit or eradicate its enabling potential. Inland waterways therefore offer a useful addition to the range of places considered as 'therapeutic bluespaces', highlighting the need to consider the diversity and complexity of experiences of water in relation to wellbeing. I have proposed the term wateriness helps attend to this multiplicity, highlighting qualities of wet places as emergent and context specific, drawing attention to the varied outcomes of encountering water.

The ambivalence of waterscapes, that the same place generates different, even contradictory dispositions, is acknowledged elsewhere (Coleman and Kearns, 2015; Foley, 2017). But the balance of research so far has been towards positive experiences (Foley and Kistemann 2015), assuming associations between wellbeing and water. Shifting focus towards those who do not necessarily associate the two revealed more multiple, complex, ambiguous ways people experience watery environments. Previously neglected watery characteristics become more apparent - wetness, submersion, slipperiness - demonstrating how wateriness can make places risky or disabling. Research findings should prompt closer attention to the specificities of water and how it distinguishes bluespaces from other outdoor environments – the particular yet fluid nature of wateriness.

This paper might temporarily muddy the waters of understanding the relationship between wellbeing and bluespaces. In the longer-term it should facilitate greater clarity by nudging future investigations in certain directions. Firstly, to not treat water as always everywhere the same, recognising waterscapes as diverse, with varying degrees of enabling potential. Secondly, to better understand how bluespaces can enhance wellbeing it is necessary to attend to the difference wateriness makes, and what is distinct about being near water rather than simply outdoors or around greenery. This does not mean focusing on wateriness in isolation, for the context in which it is encountered affects experience, particularly risk perceptions. Rather, water is

considered as a dynamic contributor to bluespace experiences, with emergent not inherent properties. Finally, researchers should remember that wateriness can be salutogenic *and* disabling, and that some potential beneficiaries fail to access the former for fear of the latter. Equitable and fair access to watery places' wellbeing benefits will only become possible through understanding what prevents some from visiting, and what might enable them to do so in future. Beyond geographers focused on wellbeing, this study suggests value in studying other modes of experiencing and valuing inland waters as grey, green and brown places centred on wateriness.

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Figure captions

Figure 1: The palette of urban waterways – less blue than brown.

Figure 2: Paths along urban waterways can feel constrained and risky.