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Beyond the fence: Constructed and found spaces for children's outdoor play in natural and human-induced disaster contexts – lessons from north-east Japan, and Za'atari refugee camp in Jordan

1 Introduction

Wherever children live in the world they will play (Opie and Opie, 1969) because it is part of the nature of childhood (James, et al. 1998). The importance of children's play is acknowledged internationally in the United Nations Convention on the Rights of the Child (UNCRC, 1989) being re-confirmed in General Comment No. 17 (UNHCRC, 2013). Yet children's play is not considered to be a pillar of humanitarian aid for disaster contexts in the way that food and water; shelter; health; and education are (Machel, 2001). Recurring disasters and climate change result in difficulties in protecting children's rights (Polack, 2010) and often those rights are overlooked because of a narrow construction of children being frail, helpless and in need of being rescued in disaster contexts (Todres, 2011).

A disaster is understood to be an event that overwhelms local capacity, causing significant damage, destruction or human suffering (Executive Office of the President of the United States National Science and Technology Council, 2003). Disasters are usually identified as being of one of two types: *natural*, such as earthquakes, floods, hurricanes, typhoons and tsunamis; or *human-induced*, including terrorism, mass transportation events or war (Weissbecker et al., 2008). Little academic research explores either the provision for children's outdoor play, or child initiated outdoor play in such situations, with contemporary evidence only being available from journalists and photojournalists, rather than researchers.

This paper addresses a gap in the literature and evidence thus making an innovative and significant contribution by asserting that a child's right to play should be acknowledged as a pillar of humanitarian aid. It does this by seeking to understand the opportunities for children's outdoor play within the framework of *constructed* and *found* spaces (section 2.5) in two post disaster contexts: the triple disaster of earthquake, tsunami and nuclear power plant failure in north-east Japan and a refugee camp in Jordan accommodating Syrian refugees.

1.1 Children disproportionately affected by disasters

In 2018 70.8 million people were forcibly displaced across the world with 3.5 million of these being asylum seekers, 41.3 million being internally displaced (within their own country), and 25.9 million being refugees (UN ,2019). By the end of 2017 nearly 31 million children had been forcibly displaced making them 40% of all displaced people (UNICEF 2018) and in 2018 children constituted 50% of the refugee population (UN, 2019). Children are currently 33% of the world population (UN, 2019a) and so are disproportionately represented as both displaced people and refugees across the world.

The numbers of children affected by disasters has increased from an estimated 66.5 million each year in the late 1990s to 175 million in the following 10 years (UNICEF, 2011). Individual disasters have affected 1 million children in Iran when three quarters of the country's provinces were flooded in 2019 (UNICEF 2019a) and 925,000 children as the result

of two strong tropical cyclones in Mozambique in 2019 (UNICEF, 2019 b). Despite the fact that disasters usually slip down the media agenda after a few days and the impact they have becomes hidden from many people, the effects continue for those affected by disasters. The memory of events, and fear of future incidents such memories create, are hard to eradicate for those who experience them, such as Barbudan children two years after hurricane Irma (UNICEF 2019c). It is not possible to accurately predict the numbers of children who will be affected by natural and human-induced disasters in coming years but it has been estimated that 175 million children per year will be affected by natural disasters as a result of ongoing climate change alone (Codreanu, Celenza, & Jacobs, 2014).

1.2 Lost childhoods: the impact of disasters on children

Daily routines build frameworks for children's lives and these become disrupted in post-disaster situations. Children experience a loss of normality with life changing events including separation from parents and siblings, fear of this happening, relocation, displacement and changes in physical environments resulting in a 'cascading series of life stressors' (Weissbecker et al. 2008, p 32). In some situations children are additionally vulnerable to child labour and other forms of mental and physical abuse. Indeed, following the Haiti earthquake existing poverty was amplified and many children were forced into dangerous labour or sexual exploitation (Wessells and Kostelny, 2013). Girls in particular are vulnerable to attack and sexual abuse in locations such as refugee camps (Women's Refugee Council, 2012).

Children's response to these stressors and resilience to cope depend on their own personality, relationships with family and community, the type and duration of the disaster (Coffman, 1998; Sugar, 1989). These stressors can affect children's brains, minds and bodies (Joshi and O'Donnell, 2003) resulting in acute stress reactions, adjustment disorders, depression, panic disorder, post-traumatic stress disorder, anxiety disorder and psychotic disorders (Kar, 2009). Such impacts can be acute and chronic over time, adding to the consequences of any physical violence and injury experienced during a disaster. This results in what Netland (2012) calls *lost childhoods*, with a series of cub-categories that include lost play and exploration opportunities, lost schooling, and lost health. This is in contrast to the rights of children expressed in the UN Convention on the Rights of the Child (UNCRC, 1989), which includes play and UN Sustainable Development Goal (SDG) 3, Good Health and Well-being, and SDG 4, Quality Education.

1.3 Play: intrinsic value, benefits, coping mechanism in disaster contexts

Play is fun and has intrinsic social, developmental and educational benefit, both at the time of play and later (see e.g. Lester and Russell, 2008). Play can also be a mechanism for dealing with the experiences, feelings and symptoms resulting from crisis situations, helping to 'normalise' children's experiences and helping children to work out their understanding of an experience, including violence, to which they might have been exposed (Levin, 2003). Some children will initiate Post Traumatic Play (PTP) which is driven, serious and has a morbid quality (Gil, 1998; Nader and Pynoos, 1991; Terr, 1983; Varkas, 1998), often characterised by repetitive unresolved themes, increased aggressiveness and/or withdrawal, fantasies linked with rescue or revenge, reduced symbolisation and concrete thinking (Cohen et al., 2010). PTP has been observed in different contexts including children

exposed to violence in Los Angeles (Farver and Frosch, 1996); the terrorist attack in New York City (Ogawa, 2004); and hurricane Katrina in the Louisiana and Mississippi Gulf Coast Regions (Dugan et al., 2010). In such play children may engage in emotions such as fear, anxiety and violence, from which adults would traditionally seek to protect them (Procter and Hackett, 2017) yet children may need to encounter and deal with these emotions in post disaster contexts.

Different adult initiated interventions have sometimes been used to allow children to express their feelings in (post)disaster contexts. Often these seek to allow young children to express themselves in non-verbal ways (Harding, 1965) or when a family's survival strategy might be to not discuss the situation (Bjorn et al., 2011). Many creative interventions provide different mechanism for children to communicate, and draw upon cultural traditions thereby contributing to children's resilience and a sense of continuity, familiarity and security providing a sense of grounding and return to some level of normality (Westbrook and Leitz, 2008). Such interventions include art, music and writing (Gangi and Barowsky, 2009); art therapy in a post-earthquake context in Pakistan (Ispanovic-Radojkovic, 2003); sand play following a tsunami (Lacroix et al., 2007); oral story-telling and dramatization in creative workshops in Guatemala (Brinton Lykes, 1994); group-interventions with children and mothers in Israel (Cohen et al., 2014); unstructured experiential activities in refugee camps in Palestine (Loughry, et al., 2006; Veronese et al., 2012) and drawing in an African refugee camp (Farley and Tarc, 2014). Dance has also been used in the USA following the 9/11 attack; in Iraq where fire dance by men and boys is deemed to free the soul of bad thoughts; in Israel to help children deal with terrorism; in Uganda where traditional dance helped children sleep through the night; in Haiti where heritage and culture were reflected in dance and in Afghanistan where dance represents hope (Levy et al., 2006).

These adult initiated interventions reflect a broader understanding of play as expressed in the UN General Comment No17 on article 31 of the UNCRC (2013) and some of these activities are identified as 'free unstructured activities' by UNICEF Jordan (2019d p 63). However such interventions are determined by adult interpretations of children's priorities and do not address the free play that children might initiate themselves in outdoor environments in a post-disaster context.

All opportunities for children to play in these post disaster contexts, whether adult directed, through interventions as mentioned above, or experiences of free play initated by children, provide opportunities for children to deal with the significant impact of the many physical and mental health issues they may experience as a result of any disaster. In this way play can contribute to children's Health and well-being, UN Sustainable Development 3, as well as preparing children to deal with their trauma and be ready to return to Quality (where possible in the situation) education, UN Sustainable Development Goal 4.

1.4 Temporary Housing Areas, Child Friendly Spaces and Makanis

When children, and their families, are displaced as a result of a disaster they may first be in emergency accommodation and then in Temporary Housing Areas (Bris and Bendito, 2019), which can take the form of housing in a host community, temporary housing, a refugee camp or informal settlement. Such temporary housing may not have adequate private or public space for children's play because of the density (Rueff and Viaro, 2010) and parents

may not allow children to play outside in the cramped conditions because of safety concerns (Lauten and Lietz, 2008). This is important because of the length of time children might live in such camps: where a disaster has lasted more than five years people may live in such housing for more than 20 years which for children will be all their childhood (UNHCR, 2020).

Although children's play is not a pillar of humanitarian aid in some (post)disaster contexts, play is implied to be part of a bigger picture of child protection, especially within refugee camps where children can be subject to violence and sexual assault. Here protection is deemed the highest priority and is provided in Child Friendly Spaces (CFSs) (Ager, et al. 2009; Ager et al., 2013; Wessells and Kostelny, 2013). CFSs are primarily protected environments for children's safety but also address a range of other issues including: monitoring and reporting; protecting attitudes, traditions, customs, behaviour and practices; children's life skills; services for recovery and reintegration (Ager et al., 2009). In addition CFSs provide an umbrella setting within which Psychosocial Support can take place.

Makani centres, developed from CFSs, are 'the comprehensive approach of providing children with an integrated package of services to promote their healthy growth' (UNICEF, 2019d, p8). The Arabic translation of Makani means 'My Space' and encapsulates the comprehensive approach of 'I am safe, I can learn, I connect' (UNICEF, 2019d, p2). The programme was launched in 2015 and exists in host communities and refugee camps in Jordan. Since 2018 the aim has been that all staff and volunteers should be Syrian refugees as part of a move towards a community-based approach (UNICEF, 2019d). Although Makanis usually have outdoor space for play, if the site allows, CFSs do not always have such provision, reflecting the lack of protection of children's rights (Polack, 2010), in this instance play.

1.5 Theory of Constructed and Found spaces for play

In outdoor environments children play in both Constructed and Found Spaces (Woolley, 2015). *Constructed* spaces are designed and built for a specific purpose and for children in many parts of the world these are often playgrounds consisting of a Kit, Fence, Carpet, where the playground has a *kit* of pieces of fixed play equipment, is enclosed by a *fence* and has a *carpet* of rubber (Woolley, 2007). Such an approach does not provide the play value that it might, leaving a deficit in opportunities for some types of play including creative, fantasy, construction and social play (Woolley and Lowe, 2013). Children themselves confirm that constructed spaces do not offer all the play opportunities they might like by using *Found* spaces which have not been designed specifically for play. In housing this can include flat surfaces that have been provided for a purpose different than play (Kytta, 2004) such as car park areas, garage roofs, footpaths, squares, lanes between buildings, deserted drainage runs and dead ends behind a house together with wild and planted spaces, and hard surfaces such as walls and fences (Hole, 1966; Department of Environment, 1973; Chawla, 2002; Allen et al., 2005; Wang, et al., 2017).

Children's use of found spaces can be understood within the concept of *affordance*, which suggests that people interact with their environment in ways they perceive as possible (Gibson, 1979) when an element or elements are perceived as offering the potential for an

activity. This perception relates to different characteristics of an individual and how these match with elements within an environment (Greeno, 1994; Kytta, 2004). Such affordances may be potential or actualised within an environment. Potential affordances relate to an individual and an activity which they perceive as available in an environment (Kytta, 2004). Actualised affordances (Heft, 1989) result when someone perceives an activity and acts or reports on that perception (Kytta, 2004). As noted above, children in housing areas identify and use found spaces perceiving and actualising the affordances of outdoor spaces together with landscape elements within such spaces.

The theory of *constructed* and *found* spaces will be used as a lens to answer several questions about children's outdoor play in post-disaster contexts: Do constructed spaces exist? What found spaces do children identify to perceive and actualise affordances for pay? What then might be learnt for a more explicit inclusion of children's outdoor play within humanitarian aid principles and practice?

2. Study areas

In order to begin to answer these questions the research draws upon two disasters of different types: one natural disaster and one human-induced disaster, both initiated in March 2011. The natural disaster is the Great East Japan Earthquake, which triggered a tsunami and nuclear meltdown in the Tohoku region of north eastern Japan. This triple disaster displaced thousands and the resulting internal migration led to many people needing temporary housing areas in different locations. The context of the human-induced disaster is the ongoing Syrian conflict and the external migration of refugees living, for this study, in one refugee camp in Jordan.

2.1 Natural disaster: Triple disaster in Tohoku, north-east Japan

On March 11 2011, Japan experienced an earthquake of 9.0 magnitude, the fourth most powerful recorded in the world since 1900, resulting from movement of the Pacific and North American Plates (JMA, 2011). The subsequent tsunami reached unprecedented and unanticipated heights of up to 21.1 m (Asahi Shimbunsha, 2011). Within an hour the tsunami traversed over the north-eastern coast flooding more than 500 km2 of land, similar to a tsunami in 869. The tsunami breached the protective walls of the Fukushima Daiichi nuclear power plant causing a nuclear meltdown of the reactors. This unique triple disaster resulted in more than 22,500 people dead or missing (Koyama et al., 2012) with an estimated 6.5% of the dead being children under the age of 19 (Yonekura et al., 2013). An estimated 500,000 people were evacuated including 100,000 children (Global Giving, n. d).

Emergency evacuation was initially to schools, and community buildings. People were moved to temporary housing areas including 48,700 light metallic pre-fabricated units on a range of sites geographically distributed across the disaster area where more than 5,600 people were still living 7 and a half years after the triple disaster (Bris and Bendito, 2019). In addition some people were housed in 19,000 public housing and 67,000 private rentals (Bris and Bendito, 2019). Children were displaced to temporary accommodation and some to different schools, many for several years. Children's routines were disrupted and many

constructed spaces for play were destroyed, abandoned or lost including school playgrounds, kindergarten playgrounds, play spaces in parks and an adventure playground that was elevated on the Sendai coastal plain (Woolley and Kinoshita, 2014).

Across Fukushima Province failure of the nuclear power plant resulted in ongoing concern, about radiation in the air and soil. One doctor, worried about the weight and development of babies in Fukushima Prefecture, initiated an indoor play facility called PEP Kids which was very popular (Woolley and Kinoshita, 2014) and became a model for other indoor facilities developed in subsequent years.

2.2: Human-induced disaster: Syrian conflict

On March 15 2011, four days after the Japanese triple disaster, pro-democracy demonstrations in the south of Syria were supressed by the government resulting in protests across the country demanding the president's resignation. The violence escalated and soon erupted into a civil war (BBC news, 2019), now in its tenth year, and there have been many waves of conflict in different cities and regions. Casualties include more than 500,000 people missing or dead by December 2018 (BBC news 2019) and 13,500 civilians, of which 3,000+ were children, killed by October 2019 (Syrian Observatory for Human Rights, 2020). In the two months from December 2019 more than 875,000 people, half of whom are children, were displaced in the north of the country following attacks on the city of Idlib (UNICEF, 2020) resulting in Turkey receiving an additional 1.5 million refugees.

Since the conflict started, 6.6 million people have been internally displaced within Syria. External migration has resulted in more than 5.6 million people fleeing Syria with 3.6+ million registered refugees in Turkey; 1+ million refugees in Lebanon; 655,000+ people in Jordan, 246,000 people displaced to Iraq and 126,000 displaced to Egypt (UN, 2020a).

In Jordan 80% of Syrian refugees live in host communities while 20% are accommodated in camps at Za'atari and Azraq (UN, 2020). Za'atari refugee camp, close to Mafraq town and 10km from Jordan's northern border with Syria, was established in 2012. The camp started as an urban settlement with a small number of UNHCR tents but soon evolved to accommodate nearly 80,000 refugees over 5 sq km, becoming Jordan's 4th largest 'city' and the second largest refugee camp in the world (World Food Programme USA, 2019). As time went on some tents were replaced by prefabricated units, similar to those used in Japan. Nearly 56% of the refugees are children under 18 years of age and nearly 20% are under the age of 5 (UNHCR, 2019).

3. Research approach and methods

Accessing post-disaster sites, whether natural or human-induced, for research can be problematic and is likely to require specific permissions or invitations, because of the management of the sites; vulnerability of the people; physical difficulties getting to and moving within the areas; and political reasons.

3.1 Site selection, access, ethics and primary data collection

The sites were selected using the two dimensions of being *purposive* and *practically* possible. Purposeful selection (Bryman, 2012; Ritchie et al., 2014) used the criteria of one site being in the context of a natural disaster and the second site being a human-induced disaster. The practical consideration was to choose sites that I would be able to access which, as already mentioned, can be very difficult in disaster contexts for a variety of reasons.

Access was facilitated to both sites by invitations from academic colleagues. In Japan a colleague at Chiba University, with a research interest in children's outdoor environments, invited me to visit the northeast area of Japan following the triple disaster in North East Japan and I visited in 2012 and 2014. My invitation to visit Za'atari refugee camp came from some science colleagues at my university who had been visiting Za'atari refugee camp in Jordan for two years. Building on my experience from Japan I was one of a small group of social scientists invited to join them. I visited at the beginning and end of 2018.

An ethics application was undertaken before visiting each site, as required by the author's university. These supported the collection of photographs as data and the undertaking of interviews and conversations where this might be possible, with the understanding that this may not always be possible or appropriate. The ethics review did not include undertaking interviews or conversations with any children for two reasons. First, opinions and experiences of the children was not the focus of this research: the aim was to understand the spatial nature of opportunities for outdoor play. Second, I considered that to interview or formally converse with children in these situations would be unethical because I do not have any training in working with traumatised children.

Primary data collection was photographic, reflecting the fact that not everything can be adequately expressed in text and that visual methods can also create documents for analysis (Pink, 2001; Mason, 2002). The creation of photographic documents allows for the researcher to focus on 'what the eye can see' (Emmison and Smith, 200: 2-4) allowing for analysis away from the field situation. Recognisable faces of children were not included in photographs, as a response to the ethics review and because the spaces, rather than the children were the focus of this research. Without photographs this research would have had to rely only on text to explain the existence of constructed and found space and the context of their setting and this would not have adequately shown the differences between constructed and found spaces.

3.2 Data gathering in Japan

Each visit to Japan included a week long journey through the area devastated by the tsunami, 300+km along the coast and 10km inland. We journeyed through the most affected prefectures of Fukushima, Miyagi and Iwate, and stopped in towns extensively destroyed by the tsunami (Sendai, Ishinomaki, Minamisanriku, Rikuzentakata and Kesennuma) or affected by the nuclear power plant failure (Fukushima, Kawamata and Minamisoma). We also visited temporary housing areas, existing and new kindergartens and some schools and community facilities which had been preserved, despite the disaster. On

my second visit we specifically visited a new constructed playspace which was outside the boundary of one temporary housing areas location.

Supplementary data was collected in two ways. First, my Japanese colleague had pre-existing contacts, some of whom were play workers, school teachers, government officials, academics and local people. We experienced formal interviews, and conversations with these people, some of which were day long conversations as we travelled the area. Second, I kept a diary of daily notes where I reflected on my conversations, interviews, observations and general experiences. This supplementary data proved context for the research and photographic data.

3.3 Data gathering in Jordan

Za'atari refugee camp is managed by the United Nations High Commission for Refugees (UNHCR) with a range of government and humanitarian partners including the United Nations Children's Fund (UNICEF). Permission to visit Za'atari camp was given by the UNHCR through a process which started weeks prior to our visits. Understandably, I was only allowed to parts of the camp and was always accompanied by UNHCR staff and my academic colleagues. In addition UNICEF staff on the ground escorted me to visit selected parts of the camp by vehicle with an emphasis on being shown constructed play spaces, but while moving around the camp children's found spaces became obvious.

Again supplementary data, giving social and physical context, was from field notes made while being shown round the camp and as reflections at the end of each day and each visit.

4. Findings

Photographs from both case studies were sorted for representing constructed and found spaces. They were then studied in more detail and revealed sub-categories, in a similar way that transcripts are examined for themes. This process revealed that constructed spaces were of three types: replaced, reclaimed and new, the latter having three sub-types. Found space appeared as two types: proximal, with two sub-types; and distal. These categories, types and sub-types (seen table 1) are used to explain the two study areas. Each constructed space exists because of the intervention of people, whether an individual or an organisation such as an NGO, something previously identified as part of the Space, People, Intervention and Time model from earlier analysis of the Japanese context (Woolley and Kinoshita, 2014). The found spaces were specifically claimed and identified for their affordances by the children.

Table 1: Categories and types of constructed and found space in natural and human (post)disaster contexts.

		TYPE OF DISASTER	**TYPE OF DISASTER**
CATEGORY: Constructed and Found Spaces	**TYPE of Constructed and Found Spaces**	Natural: north-east Japan	Human-Induced: Za'atari refugee camp
Constructed			
	Replaced	YES	NO
	Reclaimed	YES	NO
	New: • *stand-alone*, • *Makani*, • *Child Friendly Spaces*	FEW	MANY
Found			
	Proximal: • *between temporary housing*, • *around temporary housing*	YES	YES
	Distal: • *beyond temporary housing*.	Outside the housing but within the areas devastated by the disaster	Outside the housing and outside the camp boundary

4.1 Findings from Japan

4.1.1. Constructed spaces for play in north-east Japan: replaced, reclaimed and new

Replaced constructed spaces were often associated with educational establishments including the Nobiru kindergarten, on the Sendai coastal plain devastated by the tsunami, which was replaced with a prefabricated temporary housing unit (fig 1) provided by a white goods company. Some personalisation was evident with the outside being painted with flowers to provide a more child friendly aesthetic. This space was of a Kit, Fence Carpet approach in that it included a set of swings, taps and buckets for water play and for washing before returning inside, but it also included manufactured loose parts in the form of bikes and trikes. The surfacing was sand which also supported young children's play.

Reclaimed constructed spaces included an elementary school playground in Minamisanriku in Miyagi Prefecture, greatly affected by the tsunami, where the head teacher had negotiated with the authorities to prevent the playground from being completely built on for temporary housing. Swings, a climbing frame and an area for running around and ball games were reclaimed for use by children.

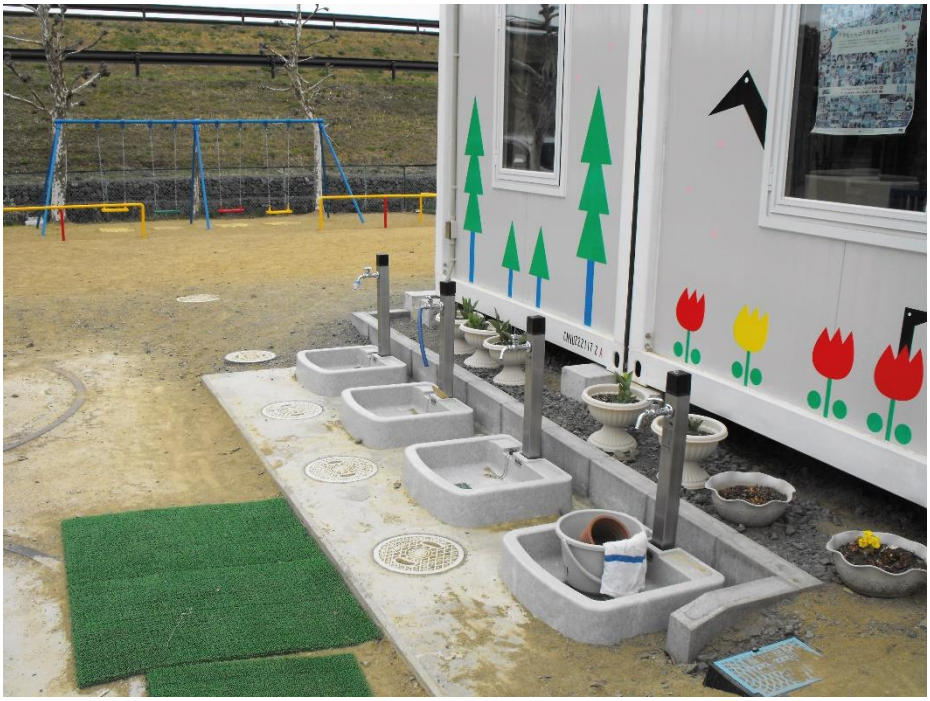

Figure 1: Replaced constructed space – Nobiru kindergarten on the Sendai coastal plain

Figure 2: Reclaimed constructed space – part of a school playground in Minamisanriku, Miyagi Prefecture

Towards the south of the disaster area in Fukushima Prefecture, where radiation contamination was the biggest and ongoing concern, schools took a thorough approach to dealing with reclaiming their constructed spaces as was evidenced in Fukushima City (fig 3). This included repeated removal of the original surface treatment, whether soil or sand, and replacement of this loose surface, multiple times. Concern about radiation on fixed play

equipment resulted in such pieces being washed frequently and re-painted several times. In addition trees in some of these playgrounds were cut-back dramatically because of the fear that radiation was held by vegetation. Numbers of children were seen enjoying what appeared to be their normal play activities as we walked past this playground.

Figure 3: Reclaimed constructed space – school in Fukushima City, Fukushima Prefecture

Figure 4: Reclaimed constructed space – Fukushima College Kindergarten, Fukushima Prefecture

The Fukushima College Kindergarten's response to the radiation was to change its sand several times and wash and paint its outdoor play equipment, thus reclaiming use for its children (fig 4). The little children were rushing around and playing around the whole of this playground enjoying all the different elements of the space and the affordances they provided. At the end of playtime the children were excellent at putting toys and moving parts away in a very ordered way, some in the transition zone of the verandah between the outdoor space and the building: everything was in its place before indoor classes and activities started again. Within months of the nuclear plant failure the kindergarten took additional precautions by initiating a large sand area indoors within the school hall and externally a (temporary housing) unit which contained soft sand several inches deep, a facility which other schools used once they knew of its existence.

New constructed spaces within temporary housing areas did not exist on my first visit. This compared with an excess of tarmac areas marked out as car parking bays resulting in vast deserts of hard black surface. However, amongst temporary housing in Fukuda on the Sendai coastal plain there was a small size tennis court, provided by an international sports company, with synthetic grass. This newly constructed space for sport (not play) was being used for football and general play, not tennis (fig 5). On my second visit an area of temporary housing in Ishinomaki in Miyagi Prefecture had one newly constructed play space but this was positioned outside the boundary of the temporary housing areas it was apparently seeking to serve.

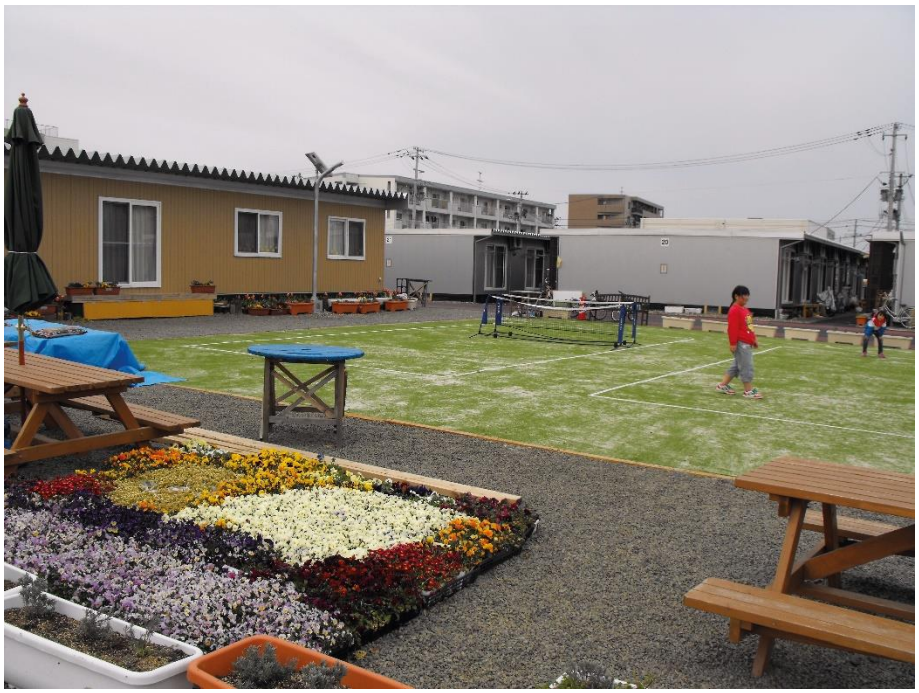

Figure 5: New constructed space – a tennis court amidst temporary housing areas in Fukuda, Sendai coastal plain

Further north at Kesennuma in Miyagi Prefecture a new Adventure Playground, called Asobiba, was developed at the inspiration and under the direction of a playworker and with the generous donation of two small fields by a farmer (fig 6). This was flexible in its design and use, as is the character of traditional adventure playgrounds. It had no kit of fixed play

equipment but a self-made wooden swing seat attached by a rope to a tree on a fairly steep slope providing great enjoyment for one child. Other children enjoyed climbing the slope by a small pond and two children were watching everyone else from the roof of the shed. The outdoor space also included many loose parts to facilitate play activities. On my second visit children were keenly involved in the construction of a wooden structure which was nearing completion. This was an expression of the construction and creative activities that such an adventure playground can support.

Figure 6: New constructed space – Asobiba adventure playground in Kesennuma, Miyagi Prefecture

4.1.2. Found spaces in north east Japan

Found spaces were identified as being of two types: *proximal* (or adjacent) to temporary accommodation and *distal* from the accommodation, being elsewhere in the disaster area. These spaces supported actualised affordances including riding bicycles for individual children but more often for small groups of children.

Proximal found spaces were sometimes long and thin in shape because they were *between* the rows of temporary accommodation which were only about 1.5 metres apart from each other but even these had affordances for small groups of children to meet, chat and ride bicycles as observed in Ishinomaki in Miyagi Prefecture (fig 7).

Figure 7: Proximal between housing found space – playing between the temporary housing in Ishinomaki, Miyagi Prefecture

In many temporary housing areas the living units were surrounded by tarmac: plenty of provision for cars. In some of the housing areas parents expressed their concern about children's safety because of the cars. Despite being dominated by tarmac and car parking, these areas could support spaces that were *around* the temporary housing. In Minamisanriku in Miyagi Prefecture (fig 8) this found space was used by older children playing with a football, a bicycle and hanging around next to a table tennis table outside a unit availab

Figure 8: Proximal around temporary housing found space – playing in the car parking provision in Minamisanriku, Miyagi Prefecture

Distal found spaces were observed to be *beyond* the housing areas in the midst of areas destroyed by the tsunami. Such spaces included a devastated school playground where boys were playing football. Again boys were seen playing football, or were they skateboarding, in the ruins of buildings destroyed by the tsunami as we drove through Minamisanriku in Miyagi Prefecture during a storm, hence the poorly focused but representative nature of figure 9. In both situations there was no habitable housing within sight and so the assumption was that the boys had walked, cycled or been taken to these spaces some distance from their current living accommodation.

Figure 9: Distal found space beyond the housing in Minamisanriku, Miyagi Prefecture

4.2. Findings from Jordan

4.2.1 Constructed spaces for play in Za'atari refugee camp

Children who moved with their parents, rather than were born in Za'atari camp, have left behind any constructed play spaces they used. Because of this there are no *replaced* or *reclaimed* constructed spaces within the camp but there were many *new* constructed spaces, mainly of the Kit, Fence, Carpet approach (Woolley, 2007, 2008). The camp is approximately rectangular in shape and has 12 districts. Each district has a Child and Family Centre and Community Centre, some of which have outdoor spaces for play associated with them. There are also schools and kindergartens in some districts and some of these have outdoor spaces for play and recreation. Some of the districts have recreation areas, many of which are designed for sports, including football. At the time of my visits there were 13 Makanis and these too have some kind of outdoor space for play. Each district also has one playground. Differing from constructed playgrounds in other parts of the world, these had natural desert sand carpets and some very tall fences, built as part of the ongoing need to protect children in refugee camps. In addition, most of the new constructed spaces had a

cover over them to protect children from the sun. These new constructed spaces appeared to be of different types: stand alone, associated with Makanis and associated with CFSs.

Figure 10: New constructed space – with multiply repeated kit of fixed play equipment, tall fence and desert carpet

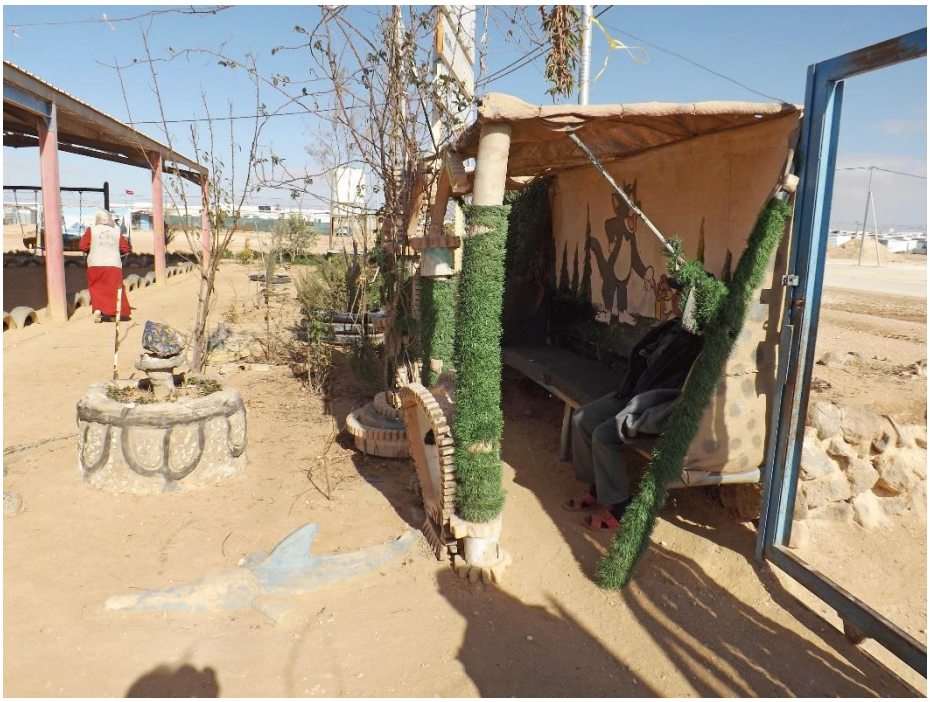

Figure 11: New constructed space – with personalised artefacts

Stand-alone constructed spaces were usually supported by one or multiple providers, often UNICEF and international charities such as MercyCorps and international governments. A series of differences between Kit Fence Carpet spaces in most parts of the world and the camp were evident (fig 10). First, the kit consisted of specific and often multiply repeated pieces of fixed play equipment, sometimes laid out in a mirror image pattern within the space. This formulaic nature of the layout was stronger than in other Kit Fence Carpet spaces, and was used in multiple spaces. Second, the fence to these areas was about 3-4 metres tall, as part of the primary concern for child protection, much taller than the usual 1 metre high fence. Third, in this desert location the carpet was just desert compared to many other parts of the world where it is usually rubber. A small number of these stand-alone spaces had personalisation treatment including planting and artefacts (fig 11) providing more interest and in some instances additional affordances for play in the changes of levels and sometimes animal characterisation of the treatment.

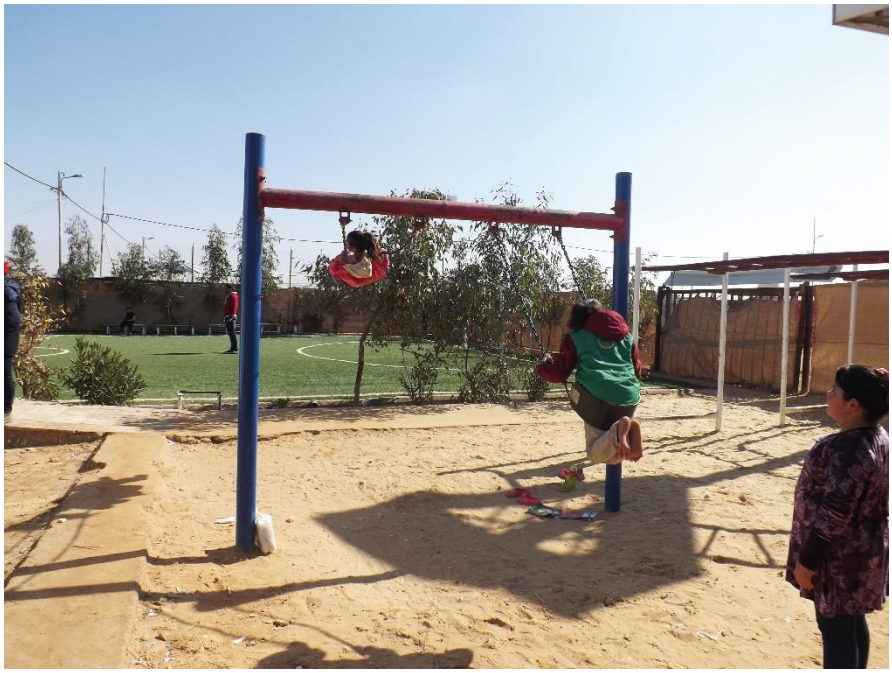

Figure 12: New constructed space – associated with a Makani and with ball games area

The material expression of a Makani is one, or a series of, prefabricated units, often with expressive colourful paintings on the outside. Inside is evidence of creative activities, computer labs and opportunities for other activities, all carefully managed with respect to gender and timings of use. Associated with each unit is an outdoor constructed play space. These were usually smaller in size than the stand-alone constructed play spaces and varied with the size of each Makani site. They had fewer pieces of kit distributed in a less formulaic way, even randomly depending on the available space, than the stand-alone constructed spaces. Sometimes part of these spaces had no kit so that children could run around, play freely or play ball games. The fences around the Makani buildings and outdoor space were again high while the carpet was desert. Some spaces had pieces of fixed play equipment and were enjoyed as can be seen in figure 12. In addition these new constructed spaces often included a football area consisting of a thin layer of artificial grass laid directly on top of the

desert surface as can be seen at the back of figure 12. In one Makani some of those playing football indicated to me they thought the desert surface under the thin artificial grass was too uneven and they wanted something better.

Even a Makani with a relatively small outdoor space would have fixed play equipment (fig 13). Another Makani outdoor space had many expressions of personalisation, including a well (reminiscent of some homes back in Syria), a wishing tree (fig 14), and hanging decorations made by the children giving a lively and happy atmosphere to this newly constructed space.

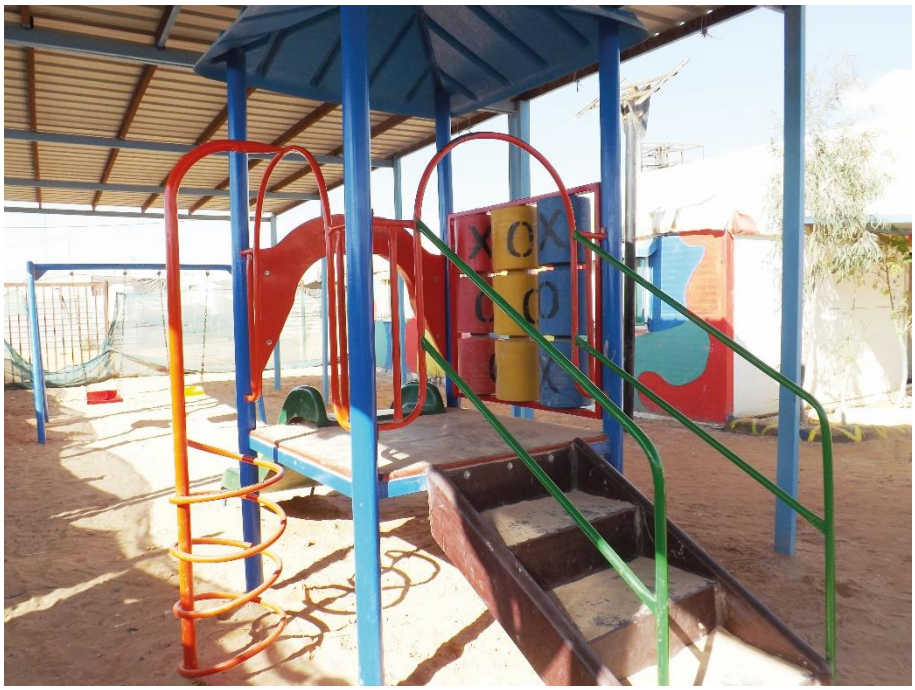

Figure 13: New constructed space – a small space associated with a Makani

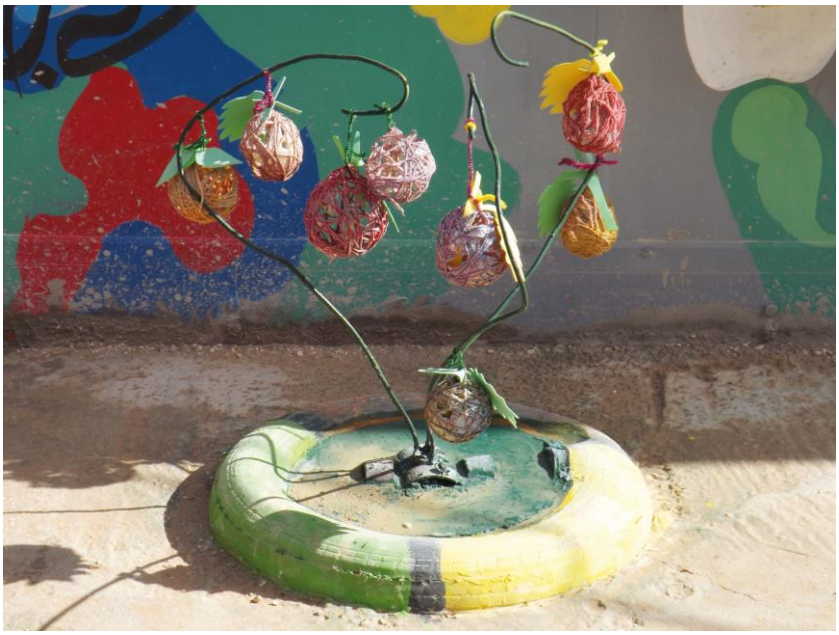

Figure 14: A wishing tree created by children in a small Makani space

On my second visit there was evidence of increasing concern to cater for all children, including disabled children with impairments. This included ramps, sometimes awkwardly positioned, to buildings and the first 'Inclusive Playground' in the camp, completed in October 2018. This inclusive playground included a lot of kit and some of it, such as the wheelchair roundabout and the specialised see-saw, had been specifically chosen so that some disabled children could use it. The playground had only been open for two months so I was surprised that some of the equipment was already showing serious signs of wear, evidently because of the poor quality of the kit, as can be seen in Figure 15 where the top of the drums are being held in place with tape.

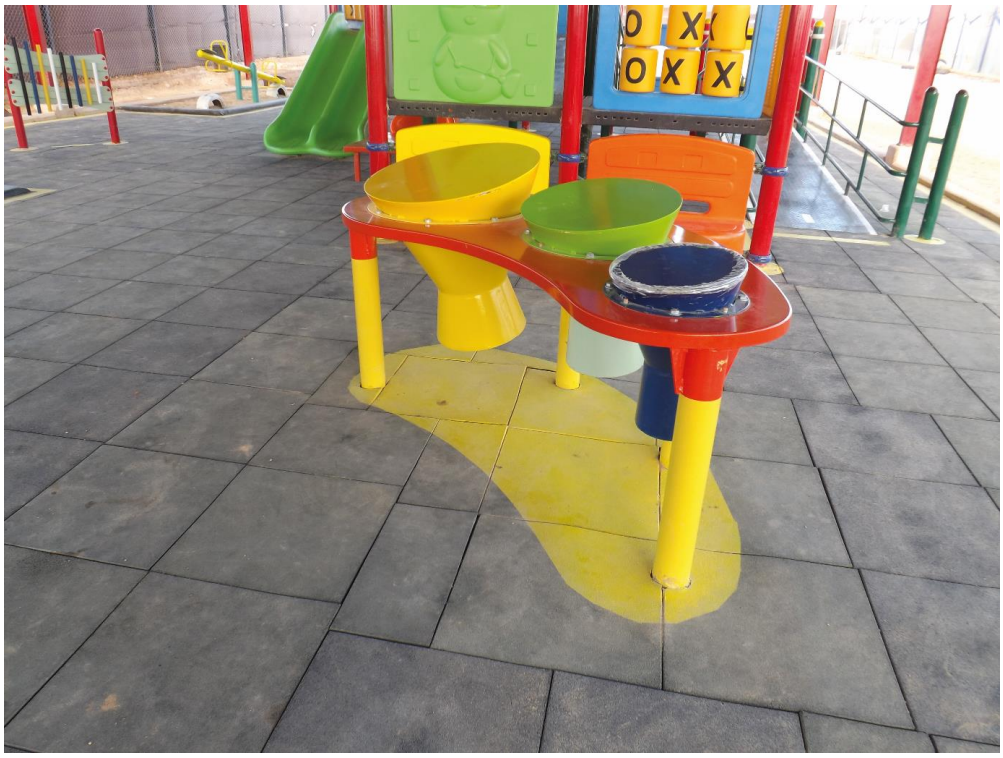

Figure 15: New constructed space – deteriorating equipment in the Inclusive Playground

The inclusive playground was located at one edge of a large school compound where the boundary consisted of a fence about 4 metres tall with internal and external angle irons at the top for additional security. The side of the playground accessed from the school had no fence because it was within the school compound. One noticeable difference in this playground was the carpet. The entire area was slightly raised with a ramp access which not only allowed for access by wheelchair users and those with mobility impairments but also facilitated the use of black rubber tiles as the carpet, which were laid less professionally than in other constructed playgrounds. There was also a rubber edging to the entire area. Sunken areas in the carpet accommodated soft sand, which was more playable than the hard and coarse desert surface (fig 16).

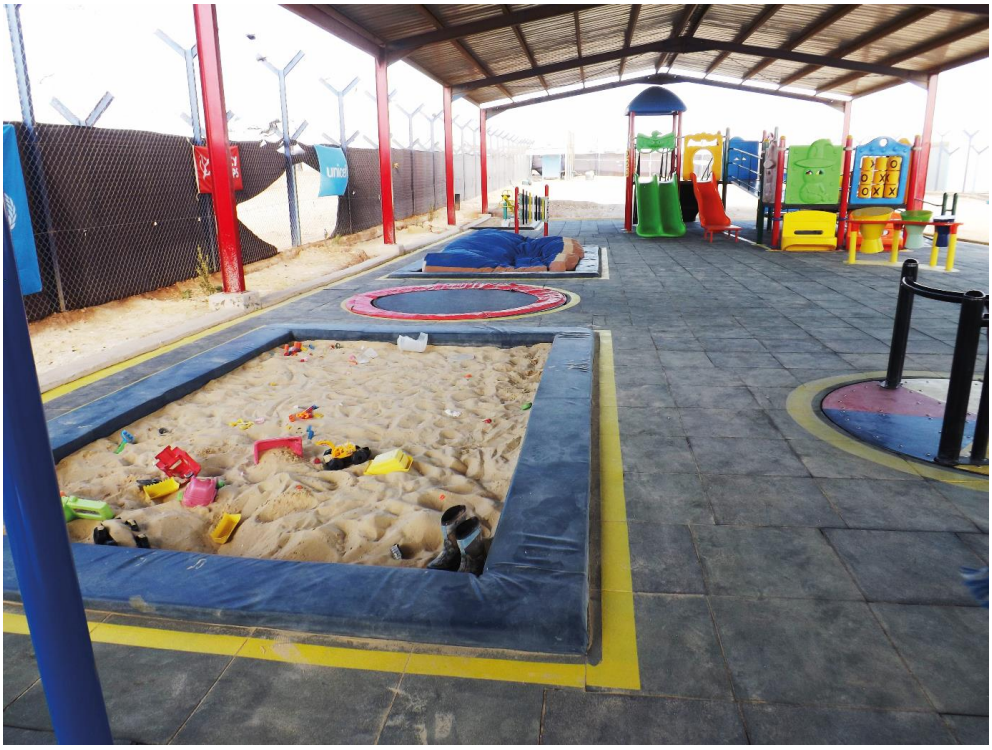

Figure 16: New constructed space – the Inclusive Playground

4.2.2 Found spaces for play in Za'atari refugee camp

From the limited access I had in the refugee camp it was clear that proximal found spaces were used for play. The layout of the housing was such that rows were not apparent everywhere, a result of the different stages of 'development' of the camp, although the small gaps and routes through the accommodation supported children's play in the *between* proximal found spaces (fig 17).

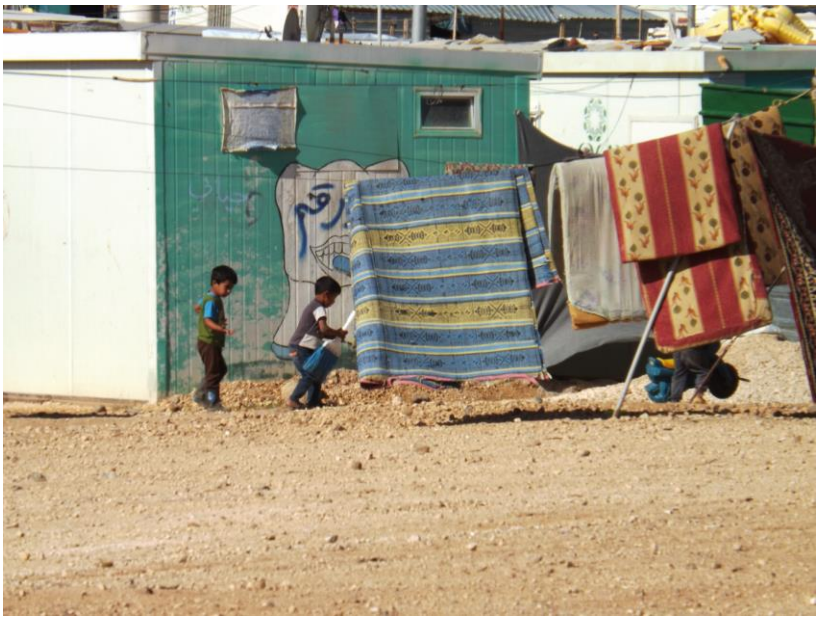

Figure 17: Found proximal spaces between housing

From the service road within the camp's perimeter fence it was evident that space *around* housing was quite well used, especially land between the edge of the accommodation and the road (fig 18). Here children, usually in groups, were clearly actualising the affordances they perceived for play with some participating and others apparently observing, or perhaps thinking what to do next.

Figure 18: Found proximal spaces around housing

Found strips of land around housing varied in width, but were often more than 5 meters wide. Children played in such found spaces in groups ranging in size from a few to 20 or so children. In some locations the strip was wider or contained an element that was of interest to the children, providing additional affordances for play, whether it was loose stones, drainage covers or the base of an electricity pylon (fig 19).

Distal found spaces were *beyond* the housing areas and outside the camp's fence, within about 100 metres of the camp boundary fence. Here, predominantly older males, probably a cultural reflection of those in the camp, played football supported by several sets of reasonably stable goalposts. Other activities, including climbing up a pile of rocks, and general play were also observed taking place in the distal space beyond the fence (fig 20).

Figure 19: Found proximal spaces around housing – the electricity pylon as a focus for play

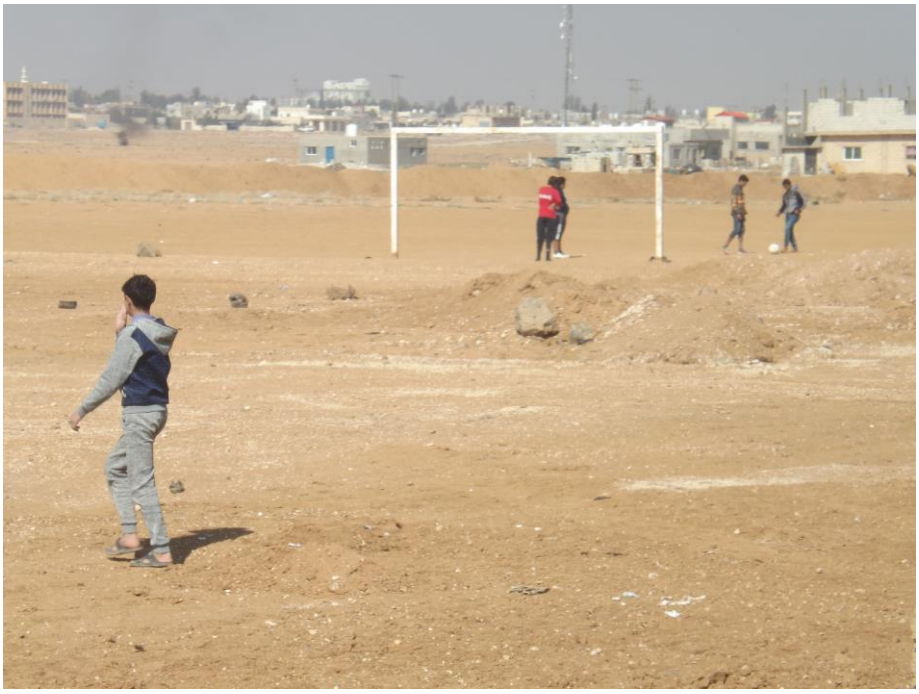

Figure 20: Distal found beyond housing areas – affordance for football and climbing on small piles of desert rocks and sand

5. Discussion

5.1 Constructed and found spaces: differences between natural and human-induced cases

This research has drawn on two study areas to answer the questions as to whether constructed and found spaces for play existed in the (post)disaster situations of the natural and human-induced contexts of Japan and Jordan. Both situations have constructed, Kit Fence Carpet style, spaces and support children's found spaces. Real differences were identified between the two studies, as indicated in table 1. First, the extent of the categories of constructed spaces appear to be different between the two contexts: the natural disaster case study had more replaced and reclaimed and fewer new constructed spaces compared to the human-induced case study, which had no replaced or reclaimed spaces but many new constructed spaces. Within the refugee camp the new constructed spaces included different types, depending on whether they were identified as stand-alone or co-located with a specific facility such as a Makani or Child Friendly Space.

Both contexts also supported children's play in found spaces, where children perceived and actualised affordances for play. The proximal found spaces between and around temporary housing were well used in both contexts. The distal spaces beyond housing were sometimes used in the natural disaster context but apparently regularly used in the human-induced disaster context, possibly because the latter was closer being just outside the camp boundary fence.

The provision of constructed spaces of whatever type, indicates that children's play has been addressed to some extent in both situations. In the human-induced context specific effort had been made by UNHCR, UNICEF and other charities to provide newly constructed spaces in the different districts of the camp, resulting in a higher frequency of the different types of constructed spaces than in the natural induced disaster area. In the natural induced disaster area effort had been made by specific individuals or organisations such as kindergarten and head teachers (Woolley and Kinoshita, 2014) to reclaim constructed spaces associated with their facility. However in the temporary housing areas there was no evidence of new constructed spaces for play, except for the sponsored tennis court at one location in the Sendai coastal plain and on the second visit a newly constructed space *outside* a temporary housing site. It appeared that the provision of all types of constructed spaces, of whatever type in the Japanese situation was random and dependent upon individuals rather than organisations.

It is also very evident that in both post-disaster situations children initiated self-directed free play in found spaces, reflecting understandings of the nature of childhood (Opie and Opie, 1969; James, et al, 1998) and that children will actualise the affordances that they perceive in found spaces (Heft, 1989). Proximal found spaces in Jordan were between and around the living accommodation, reflecting habitual spaces used on a daily basis (Moore, 1986) though limited to only desert space and not the richness of elements such as gardens, sheds and garages in other parts of the world. Some similarity can be found between the 'alleys' that Moore identified and the thin spaces between the close living units of the camp.

Beyond found spaces were outside the boundary of the camp but still accessible on a daily, hourly basis.

Found spaces in Japan included tarmac car parks, similar to non-disaster housing areas (Chawla, 2002; Kytta, 2004; Hole, 1966; Wang, et al., 2017). Spaces which I have categorised as *around* and *between* found spaces, identified in both post-disaster areas, have some resonance with the footpaths identified in various non-disaster housing locations (Hole, 1966; Department of Environment, 1973; Allen et al., 2005), which can be considered to be similar to domestic and neighbourhood open spaces in cities (Woolley, 2003). In Japan, *beyond found* spaces included a destroyed school playground and the devastated centre of a town, both very much beyond the housing the children were currently living in and possibly used because of their familiarity to the children using them.

5.2: Exploring reasons for differences between the two case studies

Accepting that children will perceive and actualise affordances of found spaces in any disaster context it is of interest to explore the different between the provision of constructed spaces for play in the two cases and I suggest that this may be the product of one or more of four factors. First, there are *demographic* differences with 50+% of Za'atari camp residents being children while only a small percentage of the north-east Japan population being children. Such demographic difference may have resulted in more consideration being given for the provision of new constructed spaces in the refugee camp in Jordan than in the rural area of Japan, where children were a lower proportion of the affected population and there was generally an absence of new constructed spaces.

Second, there are different *timeframes* associated with the different types of disaster. The natural disaster resulted in immediate displacement of people, within hours of the event, and with an apparent assumption that people would be in temporary accommodation for only a short period of time. This expectation was not the case for everyone, although some could see there was a resolution to the accommodation issue in sight (Bris and Bendito, 2019). The displacement of people from the human-induced disaster was not immediate. Za'atari camp was established more than a year after the disaster started and is still evolving nine years later and for an unknown period of time going forward, with no apparent end in sight. It is possible that the quick evacuation of people in Japan over a period of hours and days meant that less consideration was given to the provision of constructed spaces in sites of temporary housing areas than in the refugee camp which developed over a period of years.

Third, the *governance and organisations* involved may influence the provision of constructed spaces for play. When a refugee camp, such as Za'atari, is under the governance of one agency, the UNHCR, they co-ordinate a wide range of activities and, in the case studied, UNICEF played a major role together with other governments and charities in the provision of constructed spaces for play. From the information gathered in Japan it did not appear that there was any co-ordination across the disaster area with respect to provision of constructed spaces for children's outdoor play. Indeed provision seemed to be dependent upon individuals or communities in specific towns.

Fourth, the two cases had very different *geographic distributions* with the refugee camp in Jordan being a spatially contained, fenced area and the temporary housing areas in Japan being geographically dispersed in different locations across the large extent of the natural disaster area. It may be that it is easier to respond to the need to provide constructed spaces in the contained, if large, area of a refugee camp rather than the extensive geographic area of Tohuku. From the two cases studies it is clear that the context of the human-induced disaster situation has resulted in more constructed spaces for children's play, although some of these are initiated by a desire for children's safety, not primarily for play and are very formulaic in their layout.

Future research could explore these four issues of demographic make-up; timescale of and response to a disaster; organisational issues; and spatial distribution of displaced children in the context of other natural and human-induced disasters to better understand each individually and any relationships between these four issues.

6. Conclusion and policy implications

Opportunities for children to play in such post disaster contexts, some of which continue for many years, are important to help children deal with the traumas they experience, helping them to understand and deal with their own experiences (Levin, 2003). This therapeutic role of outdoor play following a disaster can aid children's health and well-being (SDG3) helping them to be ready for (quality) education (SDG4). Whether the opportunities for outdoor play are in constructed spaces or found spaces they will support free play initiated by children, though such free play is likely to be more evident in found spaces. Some of this free play may indeed result in children's Post Traumatic Play, specifically helping the children to deal with details of their experiences (Gil, 1998; Nader and Pynoos, 1991; Terr, 1983; Varkas, 1998). In this way both found and constructed spaces are important.

Found spaces are obviously very important because of the perceived and actualised affordances children identify, but these alone are not enough for children following such disasters. I consider there are two reasons for this. First, there is a need to provide safe places for children to play: in the refugee camp this was predominantly about safety from harm, including sexual abuse (Women's Refugee Council, 2012); and in the more dispersed settings in Japan this was about safety from cars dominating the external spaces of the temporary housing areas (also see Lauten and Lietz, 2008). Second, there is a need to acknowledge the importance of children and indeed their *right* to play by expressing this in constructed spaces: such spaces express that the community or providers of temporary housing areas have considered children's right to play alongside other humanitarian rights, such as housing, food and education.

I suggest that the differences in the provision of constructed spaces for children's play between the two cases explored may partly be because of the four suggested reasons of demographics of the displaced people, the timeframe of the disaster and temporary housing areas, governance and organisation of the post disaster situation, and the geographic distribution of the temporary housing areas. But I also argue that this difference for

opportunities for children's play in constructed spaces is because play is not a pillar of humanitarian aid. Children will always play, because it is the nature of childhood, and so we can assume that children will always seek out found spaces, whether proximal or distal from their temporary housing areas, and actualise the affordances they perceive in those found spaces. This is despite the existence of potential and actual risks, in both the physical and social environments. However constructed spaces, whether new, replaced or reclaimed are also important in these disaster contexts. I have, previously, been very critical of constructed spaces of the Kit, Fence, Carpet approach because of the limited play opportunities that they support (Woolley and Lowe, 2013) and the fact that in many countries they have separated children from natural elements such as landform and vegetation. But in these post disaster contexts constructed spaces take on a different importance because of the risks that children can be exposed to within temporary housing areas.

As we look to the future there is no doubt that human-induced disasters resulting from wars and conflicts will continue and the number and frequency of natural disasters will increase as a result of climate change. How often and how many disasters will happen is unpredictable. What is certain, is that such disasters will result in ongoing and increased numbers of displaced people both internally and internationally with an estimated 175 million children *each year* affected by natural disasters alone (Codreanu, Celenza & Jacobs, 2014).

So I propose that children's play should become a pillar of humanitarian aid and should be part of Disaster Risk Reduction Planning. The risk is not only the lived experiences of the children but also in the international journey of the UN Sustainable Development Goals of the Health and Well-being (SDG 3) and (quality) Education (SDG 4) of children which if not achieved adds to the notion and reality of children's lost childhoods (Netland, 2012). This needs to be expressed in practice alongside food and water, shelter, health and education immediately in all post-disaster situations. Conviction about this in policy, guidance and its implementation in practice is needed at all levels: international, national, regional, local and community and across all sectors: intergovernmental, charity, civic society and voluntary as suggested in the Sendai Framework for Disaster Risk Reduction for other rights and services (UNISDR, 2015). In practice this could mean that a Disaster Risk Reduction Plan must include for the assessment of existing constructed spaces for play and when a disaster happens the DRR should be accompanied by an action plan to assess whether there are such spaces which can be replaced or reclaimed and where new constructed spaces are required associated with temporary housing areas of whatever form they take. This needs to be undertaken in a co-ordinated way to the benefit of children, traumatised by both natural and human-induced disasters.

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References

Ager, A, Boothby, N, and Bremer, M. (2009) Using the 'protective environment' framework to analyse children's protection needs in Darfur, *Disasters.* 33(4), pp. 548-573.

Ager, A, Metzler, J, Vojta, M. and Savage, K. (2013) Child friendly spaces: a systematic review of the current evidence base on outcomes and impact. *Intervention*, 11(2), pp.133-147.

Allen. C., Camina, M., Casey, R., Coward, S., and Wood, M. (2005) *Mixed tenure twenty years on: Nothing out of the ordinary*. Chartered Institute of Housing/Joseph Rowntree Foundation.

Asahi Shimbunsha, (ed.). (2011) Higashi Nihon daishinsai: Hodo shashin zenkiroku 2011.3.11–4.11 (The Great East Japan Earthquake: a complete record of the photographic coverage 11 March to 11 April 2011). Asahi Shimbun Shuppan: Tokyo.

BBC News (2019) https://www.bbc.co.uk/news/world-middle-east-35806229 [Accessed 25.2.20]

Björn, G J, Bodén, C, Sydsjö, G, and Gustafsson, P A. (2011) Psychological evaluation of refugee children: Contrasting results from play diagnosis and parental interviews. *Clinical Child Psychology and Psychiatry*, 16(4), pp. 517-534.

Brinton Lykes, M. (1994) Terror, silencing and Children; International, multidisciplinary Collaboration with Guatemalan Communities. *Social Science and Medicine.* 38(4): 543-552.

Bryman, A. (2012) (4th ed.) *Social Research Methods*. Oxford: Oxford University Press.

Bris, P., and Bendito, F. (2019) Impact of Japanese Post-Disaster Temporary Housing Areas (THAs) Design on Mental and Social Health. *International Journal of Environmental Research and Public Health*. 16(23): 4757 doi: 10.3390/ijerph16234757 [Accessed 9.3.20]

Chawla, L. (2002) *Growing Up in and Urbanising World*. London: Earthscan/UNESCO Publishing.

Codreanu TA , Celenza A , Jacobs I. (2014) Does Disaster Education of Teenagers Translate into Better Survival Knowledge, Knowledge of Skills, and Adaptive Behavioral Change? A Systematic Literature Review. Prehospital and Disaster Medicine. 29(6): 1-14.

Coffman, S. (1998) Children's Reaction to Disaster *Journal of Pediatric Nursing*. 13(6)

Cohen, E, Chazan, S, Lerner, M, and Maimon, E. (2010) Post Traumatic Play in Children exposed to Terrorism: An Empirical Study. *Infant Mental Health Journal*, 31(2), pp.159-181

Cohen, E, Pat-Horenczyk, R, and Haar-Shamir, D. (2014) Making Room for Play: An innovative Intervention for Toddlers and Families Under Rocket Fire. *Clinical Social Work Journal,* 42, pp. 336-345

Department of Environment. (1973) Children at Play. London: Her Majesty's Stationery Office, London.

Dugan, E M, Snow, MS, and Crowe, S R. (2010) Working with Children Affected by Hurricane Katrina: Two Case Studies in Play Therapy. *Child and Adolescent Mental Health,* 15(1), pp. 52-55.

Emmison, M. and Smith, P. (2000) *Researching the Visual*. London: Sage.

Executive Office of the President of the United States National Science and Technology Council. (2003) *Reducing Disaster Vulnerability through Science and Technology, Committee on the Environment and Natural Resources, Subcommittee on Disaster Reduction*. Available at https://www.preventionweb.net/publications/view/8239 [Accessed 14.5.20].

Farley, L. and Tarc, A, R. (2014) Drawing Trauma: The Therapeutic Potential of Witnessing the Child's Visual Testimony of War. Journal of American Psychoanalytic Association.

Farver, J. A. M. and Frosch, D. L. L. A. (1996) L.A Stories: Aggression in Preschoolers' Spontaneous Narratives after the Riots of 1992. *Child Development.* 67(1), pp. 19-32

Gangi, J, and Barowsky, E. (2009) Listening to Children's Voices. *Childhood Education*. 85(6): 357

Gibson, J.J. (1979) The Ecological Approach to Visual Perception. Boston, Houghton Mifflin.

Gil, E. (1998). *Play therapy for severe psychological trauma*. New York: Guilford Press.

Greeno, J.G., (1994) Gibson's Affordances. Psychological Review , 101, pp. 336-342.

Global Giving (no date) https://www.globalgiving.org/projects/save-the-children-japan-earthquake-tsunami-relief/

Harding, G. (1965) *Leken som avslojar*. Stockholm: Natur and Kultur.

Heft, H. (1988) Affordances of Children's Environments: A Functional Approach to Environmental Description. Children's Environments Quarterly, 5, 29-37.

Hole V. (1966) National Building Studies Research Paper 39: Children's Play on Housing Estates. London: Her Majesty's Stationery Office.

Ispanovic-Radojkovic, V. (2003) Youth clubs: Psychosocial intervention with young refugees. *Intervention* 1(3): 38-44.

James A, Jenks C, Prout A. (1998) *Theorizing Childhood.* Polity Press: Cambridge.

JMA (Japan Meteorological Agency). 2011. The 2011 off the Pacific Coast of Tohoku Earthquake, first report. Available at http://www.jma.go.jp/jma/en/News/2011_Earthquake_01.html

Joshi, P. and O'Donnell, D.(2003) Consequences of Child Exposure to War and Terrorism. *Clinical Child and Family Psychology Review*, 6(4)

Kar, N, (2009) Psychological impact of disasters on children: review of assessment and interventions, *World Journal of Paediatrics*. 5(1), pp.5-11

Kytta, M. 2004. The extent of children's independent mobility and the number of actualized affordances as criteria for child-friendly environments. Journal of Environmental Psychology 24, 179-198.

Koyama, M., Yoshimura, A., Kiyono, J., Ishii, N., Mitania, S., and Koh, S. (2012) An analysis of the circumstances of deathin the 2011 Great East Japan Earthquake. 15 WCEE, Lisboa https://www.iitk.ac.in/nicee/wcee/article/WCEE2012_0969.pdf [Accessed 25.2.20]

Lacroix, L, Rousseau, C, Gauthier, MF, Singh, A, Gigu`ere, A, Lemzoudi, Y. (2007) Immigrant and refugee preschoolers' sandplay representations of the tsunami. *The Arts in Psychotherapy* 34, pp. 99-113

Lauten AW, Lietz K. 2008. A look at the standards gap: comparing child protection responses in the aftermath of Hurricane Katrina and the Indian Ocean Tsunami. *Children, Youth and Environments* 18: 158–199. https://www.jstor.org/stable/10.7721/chilyoutenvi.18.1.0158#metadata_info_tab_contents [Accessed 11.6.20]

Lester, S. and Russell, W. (2008) *Play for a change: Play, Policy and Practice – a review of contemporary perspectives*. London: National Children's Bureau for Play England.

Levin, D, E, (2003) Beyond Banning War and Superhero Play: Meeting Children's Needs in Violent Times. *Young Children* 58 (3): 60-64

Levy, F, Ranjbar, A. and Hearn Dean. (2006) Dance Movement as a Way to Help Children Affected by War. *Journal of Physical Education, Recreation & Dance*, 77(5). pp6

Loughry, M, Ager, A, Flouri, E, Khamis, V, Hamid, A, and Qouta, S. (2006) The impact of structured activities among Palestinian children in a time of conflict. *Journal of Child Psychology and Psychiatry* 47(12), pp. 1211-1218

Machel, G. (2001) *The Impact of War on Children*. London: Hurst & Company.

Mason, J. (2002) (2nd ed.) *Qualitative Researching*. London: Sage.

Moore, R.C. (1986) *Childhood Domain: Play and place in child development*. London: Crrom Helm.

Nader, K., & Pynoos, R.S. (1991). Play and drawing techniques as tools for interviewing traumatized children. In C.E. Schaffer, K. Gitlin, & A. Sandgrund (Eds.), *Play diagnosis and assessment* (pp. 375–389). New York: Wiley.

Netland, M. (2012) Exploring 'lost childhood': A study of the narratives of Palestinians who grew up during the First Intifada. *Childhood,* 20 (1), pp.82-97

Ogawa, Y. (2004) Childhood Trauma and Play Therapy Intervention for Traumatized Children. *Journal of Professional Counselling, Practice, Theory, & Research.* 32(1): 19.

Opie I, Opie P. 1969. *Children's Games in Street and Playground: Chasing, Catching, Seeking, Hunting, Racing, Duelling, Exerting, Daring, Guessing, Acting, Pretending*. Oxford: Clarenden Press.

Pink, S. (2001) *Doing Visual Ethnography*. London: Sage.

Polack, E. (2010) 'Child rights and climate change adaptation: voices from Kenya and Cambodia', Children in a Changing Climate Research Report, IDS, Brighton. https://www.preventionweb.net/files/13119_CCCReportFinal1.pdf [Accessed 10.3.20]

Procter, L. and Hackett, A. (2017) Paying with place in early childhood: An analysis of dark emotion and materiality in children's play. *Contemporary issues in early childhood.* 18(2):213-226. DOI: 10.1177/1463949117714082

Rithchie, J., Lewis, J., McNaughton Nicolls, C. and Ormston, R. (2003) *Qualitative Research Practice*. London: Sage.

Rueff, H. and Viaro, A. (2010) Palestinian Refugee Camps: from shelter to habitat. *Refugee Survey Quarterly*. 28(2-3): 339-359. DOI:10.1093/rsq/hdp041

Sugar, M. (1989) Children in a Disaster: An Overview. *Child Psychiatry and Human Development*. 19(3): 163-179.

Syrian Observatory for Human Rights (2020) http://www.syriahr.com/en/?cat=243 [Accessed 25.2.20]

Terr, L. (1983). Play therapy and psychic trauma: A preliminary report. In C.E. Schaefer & K.J. O'Connor (Eds.), *Handbook of play therapy* (pp. 308–319). New York: Wiley.

Todres, J. (2011). Mainstreaming Children's Rights in Post-Disaster Settings, in Bederman, D, J. (ed) *25 Years of Student Scholarship and Editorship for the Emory International Law Review.* p: 1233 - 1262. Bluebook 20th edition. https://heinonline.org/HOL/Page?handle=hein.journals/emint25&id=1239&collection=journals&index= [Accessed 9.3.20]

UN (2020) https://www.unhcr.org/lb/shelter [Accessed 25.2.20]

UN (2020a) https://www.unhcr.org/uk/syria-emergency.html [Accessed 25.2.20]

UN (2019) UNHCR Global Trends, 2018: Forced Displacement 2018 https://www.unhcr.org/globaltrends2018/ [Accessed 20.2.20]

UN (2019a) UN Department of Economic and Social Affairs: World Population Prospectus 2019 https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf [Accessed 20.2.20]

UNHCHR (1989) Convention on the Rights of the Child, Geneva: UNCHR. [Accessed 20.2.20]

UNHCRC (2013) Convention on the Rights of the Child Article 31 Available at: http://ipaworld.org/wp-content/uploads/2013/11/IPA-Summary-of-UN-GC-article-31_FINAL1.pdf [Accessed 14.5.20]

UNHCR (2020) Refugees https://www.unrefugees.org/refugee-facts/camps/ [Accessed 25.2.20]

UNHCR (2019) https://data2.unhcr.org/en/documents/download/70183 [Accessed 24.2.20]

UNICEF (2011) https://data.unicef.org/children-sustainable-development-goals/ [Accessed 20.2.20]

UNICEF (2018) Child displacement https://data.unicef.org/topic/child-migration-and-displacement/displacement/ [Accessed 20.2.20]

UNICEF (2019a) https://www.unicef.org/press-releases/nearly-1-million-children-affected-massive-floods-iran [Accessed 20.2.20]

UNICEF, (2019 b) https://www.unicef.org/stories/massive-flooding-malawi-mozambique-and-zimbabwe [Accessed 20.2.20]

UNICEF (2019c) https://www.unicef.org/stories/education-and-educators-uprooted-barbuda [Accessed 20.2.20]

UNICEF (2019d) Makani Standard Operating Procedures, Amman, Jordan: UNICEF, Jordan. https://www.unicef.org/jordan/reports/makani-standards-operating-procedures-sops-2019 [Accessed 4.3.20]

UNICEF (2020) https://www.unicefusa.org/mission/emergencies/child-refugees-and-migrants/syria-crisis [Accessed 25.2.20]

UNISDR (2015) Sendai Framework for Disaster Risk Reduction 2015–2030. https://www.undrr.org/implementing-sendai-framework/what-sf [Accessed 10.3.20]

Varkas, T. (1998). Childhood trauma and posttraumatic play: A literature review and case study. *Journal of Analytic Social Work*, 5, 29–49.

Veronese, G, Castiglioni, M, Barola, G, Said, M. (2012). Living in the shadow of occupation: Life satisfaction and positive emotion as protective factors in a group of Palestinian school children *Children and Youth Services Review* 34: 225-233 .

Wang, F., Ruan, H., Wang, H, C, Zong, Y. and Zhen, F. (2017) Create, control and have territories or secret places: A comparative study of children's play territoriality in their daily outdoor environments between Beijing's urban villages and modern residential areas. *Habitat International*. 66: 125-134. Doi.org.10.1016/j.habitatint.2017.05.012

Weissbecker, I , Sephton, S E, Martin, M B, and Simpson, D. (2008) Psychological and Physiological Correlates of Stress in Children Exposed to Disaster: Current Research and Recommendations for Intervention. *Children, Youth and Environments,* 18 (1), Children and Disasters pp. 30-70.

Wessells, M. and Kostelny, K.(2013) Child Friendly Spaces: Toward a Grounded, Community-Based Approach for Strengthening Child Protection Practice in Humanitarian Crises. *Child Abuse & Neglect,* 37S, pp. 29-40

Westbrook Lauten, A. and Lietz , K. (2008) A Look at the Standards Gap: Comparing Child Protection Responses in the Aftermath of Hurricane Katrina and the Indian Ocean Source Tsunami. *Children Youth and Environments.* 18(1):158 -201.

Women's Refugee Council (2012) The Path to Hope: Congolese Refugee Adolescent Girls in Nyarugusu Refugee Camp, Tanzania https://www.womensrefugeecommission.org/resources/document//868-the-path-to-hope-congolese-refugee-adolescent-girls-nyarugusu-refugee-camp-tanzania [Accessed 25.2.20]

Woolley, H. (2003) *Urban Open Spaces*. London: Routledge (Spon Press).

Woolley, H. (2007) Where do the children play? How policy can influence practice, *Municipal Engineer*, 160 : 89-95.

Woolley, H. (2015) Children and Young People's Agency, in Hackett, A., Proctor, L. and Seymour J. (eds) *Children's Spatialities: Embodiment, Emotion and Agency.* Studies in Childhood and Youth Series. Pp163-177

Woolley, H. and Lowe, A. (2013) Exploring the relationship between play value and design approach of outdoor play spaces, *Landscape Research*, 38(1) 53-74. 10.1080/01426397.2011.640432

Woolley, H. and Kinoshita, I. (2014) Space, People, Interventions and Time (SPIT): A Model for Understanding Children's Outdoor Play in Post-Disaster Contexts Based on a Case Study from the Triple Disaster Area of Tohoku in North-East Japan. *Children and Society,* 29: 434-450. DOI:10.1111/chso.12072

World Food Programme USA (2019) https://www.wfpusa.org/stories/10-facts-about-the-syrian-refugee-crisis-in-jordan/ [Accessed 24.2.20]

Yonekura, T., Ueno, S. & Iwanaka, T. (2013). Care of children in a natural disaster: lessons learned from the Great East Japan earthquake and tsunami. *Pediatr Surg Int* **29,** 1047–1051. https://doi.org/10.1007/s00383-013-3405-6