This assignment will critically discuss the use of disposable nappies, with brief reference to Pampers branded nappies, in relation to the statement 'it is impossible to effectively balance the needs of the economy, society and environment in the contemporary world' (Dicks, 2020). The terms economy, society, and environment within the statement, are underpinning terminology within sustainability theory (Kuhlman and Farrington, 2010; Smythe, 2014), and as such there will be the requirement to define the concept of sustainability and sustainable development (SD), as sustainable development has become a prominent concern in global social policy to alleviate the burden instilled on the environment (Happaerts and Bruyninckx, 2014).

When considering sustainability and SD there are many aspects that must be considered, and as such the focus will narrow to explore the context of disposable nappies. In contrast they will be an exploration to the possible usage of alternative nappies, and whether they are more sustainable and could reduce the environmental impact, there will be reference to a report that looks at whether the disposable nappy or an alternative is better for the environment (Environment Agency, 2008). Therefore, it could be argued that the focus must return to Procter and Gamble and the requirement for corporate social responsibility, where they must consider minimising the environmental impact their product creates from production to the products end of life.

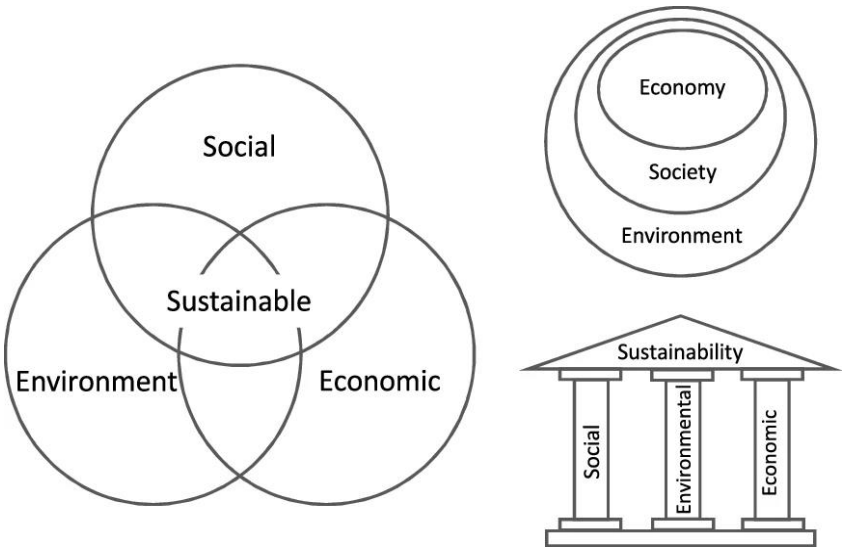
The concept of sustainability and SD is often referred to as having been derived from the Brundtland Report 1987 (Pearce and Atkinson, 1998; Diesendorf, 1999; Mensah, 2019), which was commissioned to examining the escalating concerns towards the degradation to the environment and uncovering appropriate responses to mange these concerns (Jacobs, 1999). However, the ideology behind sustainability can be traced back to 1713 where deforestation became a concern as harvesting exceeded the yield in forest regrowth, thus seen as a way of depleting resources of the environment (Kuhlman and Farrington, 2010). Nevertheless, the ideology of sustainability and SD since the Brundtland Report has allowed for the concept to become a fundamental principle within global social policy (Happaerts and Bruyninckx, 2014).

Therefore, the term sustainability is concerned with the ability to endure, often in relation to the carrying capacity of the Earth (Brown *et al.*, 1987; Maude, 2014) and the ideology of SD is concerned with the practice that will allow for sustainability to occur (Maude, 2014). From an academic and policy making perspective, Jacques (2015) argues that many have attempted

to define SD, however a definition of SD which is taken from the Brundtland Report is agreed upon (Diesendorf, 1999; Thatcher, 2014), where SD is regarded as being the process of meeting 'the needs of the present without compromising the ability of future generations to meet their own needs' (Brundtland Report (1987, p.16).

For SD to be achieved, it is considered that the three dimensions, thus being the economy, environment, and society, which are considered as underpinning terminology of sustainability theory (Thatcher, 2014) and must be balanced (Smythe, 2014; Mensah, 2019). When utilising this terminology, it is referred to as the three pillars of sustainability model (Purvis, Mao and Robinson, 2019). These sustainability models are often portrayed in images, where Image 1, presents three models based on the same ideology, these being the Venn Diagram, the nested circle and the three pillars of sustainability (Purvis, Mao and Robinson, 2019).

Image 1: Models of Sustainability



(Purvis, Mao and Robinson, 2019).

However, Jacques (2015) argues that sustainability is a complicated and contested concept. It is considered complicated due the diverse number of models of sustainability that are presented (Thatcher, 2104). Hawkes, 2001; Astara, 2014 would argue that a fourth pillar of sustainability is required, thus begun the dimension of culture, and believes that without this dimension, sustainability could not be fulfilled. Yet again Purvis, Mao and Robinson, 2019; Yolles, 2018 argue that a nested model of sustainability, where the societal and economical dimensions lie withing the environmental dimension, is the only model that should be considered, as without

environmental dimension there would not be the possibility for societal existence in which relies on economic growth (Gruijt *et al*., 2001; Thatcher, 2014).

Sustainability and SD are both contested concepts (Williams and Millington, 2004; Jacques, 2015), there are several reasons for this. According to Brown *et al.* (1987) sustainability is a social construction, this a theoretical perspective that doubts the true realisation of a concept (Burr, 2015), and as such Brown *et al*. (2015, p.718) stresses that sustainability could be 'merely a utopian ideal' and argues whether the ideology is achievable.

Another concern that arises within sustainable theory, if sustainability and SD is accepted, then the models do not account for a time element (Thatcher, 2014). Woods (2002) also argues that the meanings underpinning the sustainability dimensions can be diverse and as such leaves the ideology as ambiguous and contested.

Having noted that sustainability is concerned with the carrying capacity of Earth (Brown et al, 1987, Maude, 2014), one aspect of sustainability concerns can be traced back to the work of Thomas Malthus in the book *An Essay on the Principle of Population* in 1798 (Burger, 2020). In Malthus's literature, the concern was with population growth and its correlation to scarcity of food, where it was likely that, in time, food production would exceed the available resources to sustain the population growth (Malthus, 1798) and that the human existence would face the fate of poverty and famine (Paddock, 1998).

However, Malthus's hypothesis has been contested, most notably by Karl Marx (Smith, 2015). Wiltgen (1998) describes how Marx negatively labels the work of Malthus, and that population growth could be managed and structured to create wealth and evade poverty and famine. In contrast, Marx viewed the issue as having been arisen from a capitalist society, where necessities and food were able to be produced, however when social and economic wealth were unequally distributed, it impedes on equal supply and production, and thus results in poverty (Wiltgen, 1998).

With further critique, Cooper and Block (2019, p.36) quote that 'population growth has not only continued to increase but has in fact continued to outpace the prediction made even in recent decades', and that the downfall in Malthus's hypothesis was not solely down to being mistaken, it was that Malthus did not consider that every individual has a source of capital, in

this instance human capital, a brain, , and if utilised to full potential, this can allow for solutions to be found to overcome challenges (Copper and Black, 2019).

However, in today's era, the technocentric approach has become a very integral approach to assist with sustainable development (Mason, 1999), and with this in mind, Cooper and Block (2019) assert that technological evolution will surpass the rate of population growth and this is an ideology that Malthus did not foresee, and that is a reason that his hypothesis did not materialise.

Then again, Gilding (2012), in his talk, believes that "the earth is full" and proposed that this is due to the number of individuals that exist, alongside all the stuff, waste and demands that humans generate with existence, thus results in humans living beyond their means. Gilding (2012) asserts that to continue functioning at the current level, would require one and a half earths, meaning there is the need for 50 percent more capacity than at present, and this is based on scientific reasoning.

With the global population estimated to be around 7 billion (Organisation for Economic and Co-operation Development, 2020) it is possible that an aspect of Malthus's hypothesis can be considered as being valid, thus being population growth (Malthus, 1798), alongside the ideology of Gilding (2012) that humans have filled earth with waste, resulting in the need of consideration to how human practices have diminished and impacted on the environment and earth (Catton, 1998). Consequently, one aspect that has been researched and considered as an area of concern that is detrimental to the environment, is the disposal of disposable nappies at landfill (Ng *et al*., 2013).

Disposable nappies are 'defined as a type of underwear that has the ability to absorb urine and/or excreta' (Tsigkou *et al.*, 2020, p. 20), however for depending on one's culture and traditions, various methods have been utilised comprising of various materials to capture infant waste (Krafchik, 2016),

Historically through Europe, practices of swaddling were utilised as a nappy, this is where strips of material, either linen or cotton, were layered and wrapped and left on an infant for several days, however this led to concerns of skin irritation from paediatric associations (Buekens and Humblet, 2011). It is only during the period of industrial revolution in the United

Kingdom that nappy practices began changing (Levin, 1970). Attitudinal behaviours altered due to class status, where the working class were able to attain furniture, and did not want these new furnishings to be soiled, and therefore the requirement for a suitable protective commodity was necessary (Hansen *et al*., 1998). Cloth material was utilised and following the inventio of the safety pin in the 1880s, it allowed for the cloth material to be fastened tightly for greater protection and to avoid leakages (Levin, 1970), although criticisms of the usage of safety pins were often acclaimed (Krafchik, 2016).

However, the status and role of the woman changed drastically during the 20th century, from being the housewife and primary carer of children to having rights to vote (Walters, 2005) and because of World War II women merged with the labour force, thus resulted in lack of time to upkeep with the washing demand of the cloth nappies (Krafchik, 2016). Thus, resulted in recognition of the need for a laundry services specifically to wash the cloth nappies (Krafchik, 2016). However, innovative ideology of the disposable nappy began in the 1940s, although it is not known who initially designed the first disposable nappy, there is reference that Paulistróm from Sweden and Marion Donovan from America have been credited with the initial ideology and aspects of initial design (Dyer, 2005).

Although, in the 1950s, it became apparent to Victor Mills, an employee of Procter & Gamble and a chemical engineer, that there was a requirement for a disposable nappy, and therefore he began researching, producing, and testing these nappies on his grandchildren, which upon completion the brand Pampers materialised in the 1960s (Pampers, No Date). Pampers disposable nappies initial design comprised of 'cellulose pulp core, instead of paper' (Krafchik, 2016, p. 5) and utilised Velcro fastening and then modifies to a plastic based fastening that can be opened and closed several times. Dyer (2005) asserts that there have been many design changes to disposable nappies to ensure comfort and productiveness since its launch. A current manufacturing method consists of an outer layer made of plastic, with the core that is composed of an absorbent material, such as a cellulose pulp, with an overlay protective layer (Environment Agency, 2008; Srinivas and Dhar, 2016)

It is estimated that approximately 134 million babies are born yearly globally (Thaman and Eichenfield, 2014) with Torrijos (2014) stating that on average each infant will utilise around 3800 nappies before being fully toilet trained, although Srinivas and Dhar (2016) argue that disposable nappy use is a westernised practice and that not every infant will utilise a disposable

nappy, as in India the use of cloth nappies is culturally accepted. Nevertheless, WRAP (No Date) argue that approximately 3 billion disposable nappies are discarded at landfill every year in the United Kingdom.

It is most often argued that it is the discarding element of the disposable nappy that is detrimental to the environment (Swift, 2015). However, Mendoza et al. (2019) argues that from manufacture to disposable, the disposable nappy is detrimental to the environment. A substantial amount of raw material is initially required, to then the manufacturing process, which utilises a considerable amount of water and energy, also distribution causes an impact and finally to the disposal (Meseldzija, Poznanovic and Frank, 2013). Therefore, perhaps an alternative nappy may be more environmentally friendly, Pendry, Mewse and Burgoyne (2011, p. 6) argues that reusable cloth nappies would be 'serious contender' to alleviate the environmental burden, yet the Environment Agency (2008) refute this ideology, through arguing that for reusable nappies to be sustainable a strict and appropriate laundering process must be carried out, and this can only be achieve if the consumer's behaviours allow, yet Pendry, Mewse and Burgoyne (2011) then debate whether parents have the time to maintain reusable nappies, and as such disposable nappies are seen to be utilised as a means of convenience.

However recently in Wales a pilot scheme to provide 200 sustainable baby bundles to expecting mothers begun (Welsh Government, 2020a) and is coined as being 'a welcome to the world' gift (Welsh Government, 2019). This scheme was to be trialled and offered via the Swansea Bay University Health Board (Welsh Government, 2019) on behalf of the Welsh Government who have subsidized to supply these baby bundles (NHS Wales, No Date).

This concept was initially presented in Wales in 2018 by Mark Drakeford (Drakeford, 2018), the current First Minister for Wales (Welsh Government, No Date), in his Manifesto for Welsh Labour leadership (Drakeford, 2018). This ideology of providing baby bundles was introduced under the titled concern of child poverty, and as such this scheme aims to provide the initial essential baby products and guidance to allows for the parents to provide the necessary care for their baby in the initial weeks and months post-birth (Welsh Government, 2019).

This concept originated from Finland (Koivu *et al.* 2020) and is termed as a maternity package and was provided from 1938 to mothers from disadvantaged backgrounds, and a decade later

the programme was rolled out as a societal benefit to all expecting mothers (Bäckman, 2014), subject to them attending antenatal care and it is provided irrespective of income (Koivu *et al.* 2020).

According to the Thinking Outside the Box study undertaken in Finland, this concept has been welcomed within Finland and as such has been adopted and adapted in 63 other countries (Koivu *et al.* 2020). Researchers considered that a desire to provide a baby box would reflect a countries economic status, where schemes were provided to countries with low- and middle-income, however countries of high-income within Europe have formulated similar schemes, especially because of media coverage that has increased awareness and resulted in a baby bundle scheme to be facilitated through the Scottish Government (BBC, 2013; Koivu *et al.* 2020).

It has been reported in news articles that trials have been undertaken during 2017 in England since the Scottish roll-out (Mirror, 2020), however Ball and Taylor (2020) argue that the scheme ran from 2016 until its demise in 2019. However, the scheme remains operational in Scotland, where 40,000 boxes were provided in 2020 (Scottish Government, 2020).

However, one clear difference between the Scottish and Welsh bundles, is the content (Parent Club, No Date; Welsh Government, 2020b). The Scottish baby bundles provide the same content in each box, including a voucher for obtaining a reusable nappy kit (Parent Club, No Date) however it has been noted that each box in Wales will vary, with the Welsh Government (2020b, online) quoting 'some bundles contain a baby wrap/sling while others contain a re-useable nappy starter pack'.

An impact assessment on how the baby bundle schemes supports the rights of children highlights how the scheme reflects upon the Welsh Government's effort and desires within the national strategy Prosperity for All, this scheme can also contribute to meeting the seven well-being goals of the Well-being of Future Generations (Wales) Act 2015 (Welsh Government, 2020c), theses can be referred to in the image 2 below.

Image 2: How the Baby Bundle Scheme Contributes to Meeting the Seven Well-being Goals of the Well-being of Future Generations (Wales) Act 2015.

The Well-being of Future Generations Act (WFG Act) gives Wales the ambition, permission and legal obligation to improve our social, cultural, environmental and economic well-being.

At the heart of the WFG Act are the seven Well-being Goals. The Act makes it clear the listed public bodies must work to achieve all of the Goals, not just one or two. Officials have produced a high level analysis of the ways in which the baby bundle could contribute to the Goals, whilst supporting our objectives in terms of both social welfare and health improvement outcomes; the list is as follows:

A Prosperous Wales – reducing inequalities in access to newborn essentials; developing parenting support and skills.

A Resilient Wales – promoting access to wider support services for parents; supporting infant attachment and mental development.

A more Equal Wales – reducing inequalities in access to newborn essentials.

A Healthier Wales – supporting immunisation and baby checks/ Healthy Child Wales Programme; promotion of breastfeeding and safe-sleeping messaging.

A Wales of Cohesive Communities – encouraging community and home safety; promoting knowledge and access to wider support services for parents.

A Wales of Vibrant Culture and Welsh Language – provision of and support for twf, baby books, meithrin, nursery rhymes; information for prospective parents on Welsh medium education.

A Globally Responsible Wales – provision of re-useable nappies (or a voucher for the same) or nursing pads rather than disposable ones, which can frequently end up in landfill.

(Welsh Government, 2020c).

The argument to be drawn from this Welsh baby bundle scheme, is that perhaps with going to the expense of providing the, perhaps Welsh Government should ensure that reusable nappy kit or a voucher to acquire one should undeniably be included to encourage sustainable practice.

Although there are attempts to promote reusable nappies, Pendry, Mewse and Burgoyne (2011 believe that disposable nappies are more convenient, and as such Jacques (2015) argues that the production company must take responsibility in creating sustainable products, and such this is known as the ideology of corporate social responsibility (Moon, 2007) which must be executed in order to produce more environmentally friendly disposable nappies (Cordella et al., 2015). In practice Pampers (2020) assert how they have modified their manufacturing process to become more sustainable, through sourcing sustainable materials, usage of renewable electricity in their manufacturing factories across Europe. Pampers (2020) have also created a nappy recycling plant in Italy, this will begin to reduce the number of disposable nappies that would go to landfill, with further plans for five recycling plans to be created across

Europe by 2030. However, there is no research currently available to indicate whether this method of disposal will assist in alleviating the environmental impacts.

Therefore, to conclude to balance the needs of the economy, society and environment that underpins sustainable development ambition, when related to the use of nappies is a complex and multidimensional concept. Arguments have been made to the convenience of use of disposable nappies (Pendry, Mewse and Burgoyne, 2011) and in comparison, that reusable nappies are not necessarily better for the environment (Environment Agency, 2008), there remains ambition in Wales to provide some reusable nappies in the new baby bundle schemes (Welsh government, 2020b) with correlation to the impact of poverty that families encounter (Drakeford, 2018). Meanwhile Pampers (2020) continue to improve manufacturing sustainable disposable nappies, that must be consider as within the context of social corporate responsibility (Moon, 2007). It will be valuable to return to this assignment's philosophies at a later time, to evaluate and analyse whether sustainable manufacturing process and disposal practices will assist with improving the current environmental concerns.

References.

Astara, O.A. (2014) ‘Culture as the Fourth Pillar of Sustainable Development’, *Sustainable Development, Culture, Traditions Journal*, 2a, pp. 93-102.

Bäckman, G. (2014) ‘The Finnish Welfare State, Social Policy and Social Capital’, in Laurinkari, J. and Tarvainer, M. (eds) *The Policies of Inclusion: Perspectives to Disability in Connection with Changing Welfare Policy*. Germany: EHV Academicpress GmbH.

Ball, H.L. and Taylor, C.E. (2020) ‘Baby-box schemes in England: parent and practitioner experiences, and recommendations’, *BMC Pediatrics*, 20 (Article 154).

Brown, B.J., Hanson, M.E., Liverman, D.M. and Merideth, R. W. (1987) ‘Global Sustainability: Toward Definition’, *Environmental Management*, 11(6), pp. 713-719.

Brundtland Report (1987) *Our Common Future*. Available at: https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf (Accessed: 25 October 2020).

Buekens, P. and Humblet, P. (2011) ‘A 15th Century “Bambino” is the Symbol of Global Maternal and Child Heath’, *Maternal and Child Health Journal*, 15, pp. 1-3.

Burger J.R. (2020) ‘Malthus on Population’, in Shackelford T. and Weekes-Shackelford V. (eds) *Encyclopedia of Evolutionary Psychological* Science. Cham, Switzerland: Springer International Publishing.

Burr, V. (2015) *Social Constructionism*. 3rd edn. Hove, West Sussex; Routledge.

BBC (2013) *Why Finnish Babies Sleep in Cardboard Boxes*. Available at: https://www.bbc.co.uk/news/magazine-22751415 (Accessed: 20 October 2020).

Catton, W.R. (1998) ‘If Malthus Was So Wrong, Why is Our World in Trouble’, *The Social Contract*, 8(3), pp. 231-238.

Cooper, A. and Block, W.E. (2019) 'Why Malthus Will Always Be Wrong', *Romanian Economic Business Review*, 14(4), pp. 32-41.

Cordella, M., Bauer, I., Lehmann, A., Schulz, M. and Wolf, o. (2015) 'Evolution of Disposable baby Diapers in Europe: Life Cycle Assessment of environmental Impacts and Identification of Key Areas of Improvement', *Journals of Cleaner Production*, 95, pp. 322-331.

Dicks, K. (2020) *Assignment 1 (New Date*). Available at: https;//moodle.uwtsd.ac.uk/course/view.php?id=3522 (Accessed: 6 October 2020).

Diesendorf, M. (2000) 'Sustainability and Sustainable Development', in Dunphy, D., Benveniste, J., Griffiths, A. and Sutton, P. (eds) *Sustainability: The Corporate Challenge of the 21st Century*. Sydney: Allen & Unwin.

Drakeford, M. (2018) *Mark Drakeford for Leader: 2018 Labour Leadership Manifesto 21st Century Socialism*. Cardiff: David Davies. Available at: https://skwawkbox.org/wp-content/uploads/2018/11/manifesto-english-print.pdf?fbclid=IwAR3cV_OzB-FHJmp3qrEZiyXTKNPT920rfHrGPN5CSMSe--I1yZKYJFtSiEQ (Accessed: 20 October 2020).

Dyer, D. (2005) *Seven Decades of Diapers: A Record of Continuous Innovation and Expanding Benefit.* Available at: https://www.edana.org/docs/default-source/absorbent-hygiene-products/edana---seven-decades-of-diapers.pdf?sfvrsn=3e24da15_2 (Accessed: 23 October 2020).

Environment Agency (2008) *An Updated Lifecycle Assessment Study for Disposable and Reusable Nappies*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/291130/scho0808boir-e-e.pdf (Accessed: 25 October 2020).

Gilding, P. (2012) *The Earth is Full*. Available at: https://www.ted.com/talks/paul_guilding_the_earth_is_full?language=en (Accessed: 15 October 2020).

Guijt, I. (2001) *Resource Kit for Sustainability Assessment*. IUCN, Gland, Switzerland and Cambridge, UK. Part A x + 83 pp., Part B viii + 172 pp., Part C iv + 92 pp. Available from: https://www.researchgate.net/publication/40141140_IUCN_resource_kit_for_sustainable_assessment_Part_A#fullTextFileContent (Accessed: 5 November 2020).

Hansen, R., Krafchik, B., Lane, A., Odio, M. and Schachner, L.A. (1998) 'Dealing with Diaper Dermatitis', *Contemporary Pediatrics,* Supplement s5-s14.

Happaerts, S. and Bruyninckx, H. (2014) 'Sustainable Developments: The Institionalization of a Contested Policy Concept', in Betsill, M.M., Hochstetler, K. and Stevis, D. (eds) *Advances in International Environmental Politics*. London: Palgrave MacMillan.

Hawkes, J. (2001) *The Fourth Pillar of Sustainability Culture's Essential Role in Public Planning.* Australia: Common Ground Publishing Pty Ltd.

Jacobs, M. (1999) 'Sustainable Development as a Contested Concept', in Dobson, A. (ed) *Fairness and Futurity*. Oxford: Oxford University Press.

Jacques, P. (2015) *Sustainability the Basics*. Oxon: Routledge

Koivu, A., Phan, Y.T.H., Năsi, E., Abuhamed, J., Perry, B.L., Atkins, S., Pwrkiö, M. and Koivusalo, M. (2020) *The Baby Box: Enhancing the Wellbeing of Babies and Mothers Around the World*. Helsinki: Kela.

Krafchik, B. (2016) 'History of diapers and diapering', *International Journal of Dermatology*, 55 (Suppl. 1), pp. 4-6).

Kuhlman, T. and Farrington, J. (2014) 'What is Sustainability?', *Sustainability*, 2, pp. 3436-3448.

Levin, S. (1970) 'Diapers', *South African Medical Journal*, 44(9), pp. 256-263.

Malthus, T.R. (1798). *An essay on the principle of population, as it affects the future improvement of society with remarks on the speculations of Mr. Godwin, M. Condorcet, and other writers*. London. Available at: http://www.esp.org/books/malthus/population/ malthus.pdf (Accessed: 5 October 2020).

Mason, M. (1999) *Environmental Democracy.* London: Routledge.

Maude, A. (2014) 'A Sustainable View of Sustainability', *Geography*, 99(1), pp. 47-50.

Mensah, J. (2019) 'Sustainable Development: Meaning, History, Principles, Pillars and Implications for Human Action: Literature review.', *Cogent Social Sciences*, 5(1) Article: 1653531, pp. 1-21.

Meseldzija, J., Poznanovic, D. and Frank, R. (2013) *Assessment of the Differing Environmental Impacts Between Reusable and Disposable Nappies*. Available at: https://www.dufferinresearch.com/images/sampledata/documents/Environmental%20Impact%20Report%20-%20Cloth%20vs%20Disposible.pdf (Accessed: 16 October 2020).

Mirror (2020) *New Parent to get free 'Baby bundles' on top of £500 one-off support grants.* Available at: https://www.mirror.co.uk/money/baby-bundles-handed-new-parents-22772925 (Accessed: 20 October 2020).

Moon, J. (2007) 'The Contribution of Corporate Social Responsibility to Sustainable Development', *Sustainable Development*, 15, pp. 296-306.

Ng, F.S.F., Muthu, S.S., Li, Y.L. and Hui, P.C.L. (2013) 'A Critical Review on Life Cycle Assessment Studies of Diapers', *Critical Reviews in Environmental Science and Technology*, 43(16), pp. 1795-1822.

NHS WALES (NO DATE) *Baby Bundles Pilot Scheme to Give Little Ones Best Start in Life*. Available at: https://sbuhb.nhs.wales/news/swansea-bay-health-news/baby-bundles-pilot-scheme-to-give-little-ones-best-start-in-life/ (Accessed: 21 October 2020).

Organisation for Economic and Co-operation Development (2020) *Population.* Available at: https://data.oecd.org/pop/population.htm (Accessed: 17 October 2020).

Paddock, W.C. (1998) 'Malthus – Right or Wrong?', *The Social Contract*, 8(3) pp.197-205.

Pampers (No Date) *Pampers History. A Journey of Love Sleep & Play*. Available at: https://www.pampers.co.uk/history (Accessed: 15 October 2020).

Pampers (2020) *Nappies and the Environment: A quick guide + 4 disposal tips*. Available at: https://www.pampers.co.uk/safety-and-commitment/caring-for-the-planet/article/nappies-and-the-environment (Accessed: 20 October 2020).

Pearce, D. and Atkinson, G. (1998) 'The Concept of Sustainable Development: An Evaluation of its Usefulness Ten Years after Brundtland', *Swiss Journal of Economics and Statistics*, 134(3) pp. 25-269.

Parent Club (No Date) *All About the Baby Box*. Available at: https://www.parentclub.scot/baby-box (Accessed: 20 October 2020).

Pendry, L.F., Mewse, A.J. and Burgoyne, C.B. (2012) 'Environmentally Friendly Parenting: Are Cloth Nappies A Step Too Far?', *Young Consumers: Insight and Ideas for Responsible Marketers*, 13(1), pp. 5-19.

Purvis, B., Mao, Y. and Robinson, D. (2019) 'Three Pillars of Sustainability: in Search of Conceptual Origins', *Sustainability Science*, 14(3), pp. 681-695.

Scottish Government (2020) *40000 baby boxes delivered.* Available at: https://www.gov.scot/news/40-000-baby-boxes-delivered/ (Accessed: 14 January 2021).

Smith, P. (2015) 'Malthus is still wrong: we can feed a world of 9-10 billion but only by reducing food demand', *Proceedings of the Nutrition Society*, 74, pp. 187-190.

Smythe, K.R. (2014) 'An Historian's Critique of Sustainability', *Culture Unbound*, 6, pp. 913-929.

Srinivas, S.M. and Dhar, S. (2016) 'Advances in Diaper Technology', *Indian Journal of Paediatric Dermatology*, 17, pp. 83-86.

Swift, G. (2015) 'Degradable Polymers and Plastics in Landfill Sites', in Mark, H.F. (ed) Encyclopaedia of Polymer Science and Technology, 4th edn, London: Wiley-Blackwell.

Thaman, L.A. and Eichenfield, M.D. (2014) 'Diapering Habits: A Global Perspective', *Pediatric Dermatology*, 31 (Supplement 1), pp. 15-18.

Thatcher, A. (2014) 'Theoretical definitions and models of sustainable development that apply to huma factors and ergonomics', *Human Factors in Organizational Design and Management*, 11, pp. 747-752.

Torrijos, M., Sousbie, P., Rouez, M., Lemunier, M., Lessard, Y., Galtier, L. Simao, A. and Steyer, J.P. (2014) 'Treatment of the Biodegradable Fraction of Used Disposable Diapers by Co-digestion with Waste Activated Sludge', *Waste Management*, 34(3) pp. 559-675

Tsigkou, K., Tsafrakidou, P., Zafiri, C., Beobide, A.S. and Kornaros, M. (2020) 'Pretreatment of Used Disposable Nappies: Super Absorbent Polymer Deswelling', *Waste Management*, 112, pp. 20-29.

Walters, M. (2005) *Feminism: A Very Short Introduction*. Oxford: Oxford University Press.

Welsh Government, (No Date) *Rt Hon Mark Drakeford MS First Minister of Wales.* Available at: https://gov.wales/rt-hon-mark-drakeford-ms (Accessed: 20 October 2020).

Welsh Government (2019*) Baby Boxes*. Available at: https://gov.wales/atisn13105 (Accessed: 27 October 2020).

Welsh Government (2020a) *Baby Bundle Pilot begins in Wales.* Available at: https://gov.wales/baby-bundle-pilot-begins-wales (Accessed: 20 October 2020).

Welsh Government (2020b) *Written Statement: Start of Baby Bundles Pilot*. Available at: https://gov.wales/written-statement-start-baby-bundles-pilot (Accessed: 20 October 2020).

Welsh Government (2020c*) Baby Bundles Scheme: Children's Rights Impact Assessment.* Available at: https://gov.wales/baby-bundles-scheme-childrens-rights-impact-assessment (Accessed: 20 October 2020).

Williams, C.C. and Millington, A.C. (2004) 'The Diverse and Contested Meaning of Sustainable Development', *The Geographical Journal,* 70 (2), pp. 99-104.

Wiltgen, R.J. (1998) 'Marx's and Engels's Conception of Malthus: The Heritage of a Critique', *Organization and Environment*, 11(4), pp.451-460.

Woods, D. (2002) *Sustainable Development: A Contested Paradigm*. Available at: http://www.fwr.org/sustdev.pdf Accessed: 22 October 2020).

WRAP (No Date) *Real Nappies – Overview.* Available at: https://www.wrap.org.uk/content/real-nappies-overview (Accessed: 27 October 2020).

Yolles, M. (2018) ‘Sustainability Development: Part 2 – Exploring the Dimensions of Sustainability Development’, *International Journal Markets and Business System*, 3(3), pp. 257-275.