

## **Abuse by Design: The Implications and Prospects of Adopting Child-Character Centred Persuasive Designs and Systems**

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### **Abstract**

*Child abuse, via designs, used to be perceived as a western disease. It has however spread deep into sub-Saharan Africa with the widespread of design knowledge, application and research. Yet, health and design studies seem to be quiet about this trend which has social, behavioural and health consequences, despite its prospects. Abuse via designs poses a threat to two major constructs of UNICEF including child protection and health. This multidisciplinary study, therefore, offers critique of selected persuasive product designs and design contents with emphasis on the emerging trend of child-character centred persuasive drives and designs. Every persuasive designer or a sponsor of a persuasive campaign has an objective: to achieve influence or acceptability which in turn translates into some forms of benefits or profits. Adopting a blend of literature/product review and a fair content analysis method, the study establishes evidences of the adoption of child-characters as key-drivers in major identifiable persuasive campaigns, designs and systems. While this trend might have proven relatively effective for the achievement of the objectives of persuasive design creators and sponsors, it however poses major implications for the healthy development and adjustment of children who are often exposed to unhealthy influences in the running of the persuasive systems. Hence, this study recommends a conscious query, by appropriate authorities, of such persuasive designs and systems with a view to curbing possible abuses and negative influences where it appears to exist.*

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**Keywords:** Abuse, Behavioural-medicine, Children, Key-driver, Health, Healthcare, Persuasive-Designs, Persuasion, Persuasive-systems, Protection, Advertisement

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### **1.0 Introduction**

In recent years, there have been advances in design science and technology which has contributed globally to the ability to overcome challenges related to poverty, the environment and poor health [1-2]. However, according to the World Health Organization [1], there has been a deterioration in health status in many developing countries, sub-Saharan African and Asian countries inclusive, with children being chiefly on the receiving side. In a bid to prevent or control abuses, most child protection, behavioural-medicine and public health professionals, educators and researchers concentrate on outward evidences of abuse or potentials to abuse. Much attention is focussed on what the child is exposed to in the classroom, at home, in the neighbourhood, health facilities and other related environments. Attention has also been given to the actions and inactions of parents, guardians, educationists and other people or

professionals associated with children [3, 4, 5]. However, little or no attention has been given to the professionals and influencers whose drives and influences are hidden within designs intended to persuade. Their faces are not seen, but their persuasions are loud. An emerging trend of child-centred persuasive designs has been adopted in various facets of persuasive contents creation in a bid to promote design successes and businesses with little or no consideration for the health, emotional, social, moral or physical implications for children, a situation which prompted this study. Perhaps, a little more attention directed towards this trend will help relevant professionals further improve in tracing the origins of some behavioural maladjustments in children, that lead to more complex medical disorders, and mitigate further possible occurrences.

Design has been described as an art of thought directed to practical action through the persuasiveness of objects and other persuasive contents, thus suggesting that instead of simply making an object or a thing, a designer is actually creating a persuasive argument that comes to life whenever a user considers or uses a product as a means to some end [6]. They are produced and propagated via appropriate persuasive technologies ranging from games, applications, to mobile phones and other electronic devices like the computer or television for example [7]. These contents or products are known as Persuasive Designs. They may be in the soft forms [e.g. softwares, TV contents], hard forms [e.g. products in health (like a heart-rate monitor with timer used instead of having to monitor trekking distances) or in environmental sustainability (like a shower meter indicating carbon {IV} oxide footprint in real time)] or in a combination of both hard and soft forms. These designs contribute immensely to what children are exposed to on a daily basis.

Many child care and behavioural-medicine professionals consider abuses or possible abuses chiefly from the direct-impact or physical perspective which often involve coercion. However, there are subtle technologies that do not necessarily involve coercion or direct luring skills. They are persuasive technologies and contents. Persuasive technologies have been described as technologies that are intended to change users' behaviours without pressuring them [8]. Persuasive designs therefore are simply designs that are created deliberately to influence, change or reinforce users' behaviour without the exertion of undue pressures. This makes such design contents ignorable often, but their impacts are extensive.

The need for persuasion is rising at an alarming rate with every passing year. Various people, entities, businesses, companies, agencies and authorities are competing at the same time for the attention of the same population. The more persuasive you are, the more attention you, your products or services get. Therefore, with children at the centre of many of such design contents, persuasion is happening constantly and iteratively all around us [9]. Persuasive designs are everywhere around us. Users are deliberately exposed to them through television, websites, online games, persuasive products, magazines and other publications, as well as marketing through schools, religious centres, social responsibility applications and persuasive efforts directed specially towards parents and children [10-11]. The average Internet user, smartphone user and television or radio audience is exposed to various persuasive contents/designs on a daily basis. Irrespective of whether or not we are aware of this, attempts are being made to influence our minds and behaviour in one way or another by these designs. They are not coincidences; they are "designs with intents (DWI)" [12-13]. These designs come with their benefits. However, such designs can amount to abuses if the messages encoded in their contents or structures are offensive or above the age grade of the target audience, adopted key-drivers or end-users therewith amounting to 'abuse by design'. These designs are often laden with key-drivers intended to drive the achievement of the persuasion attempts.

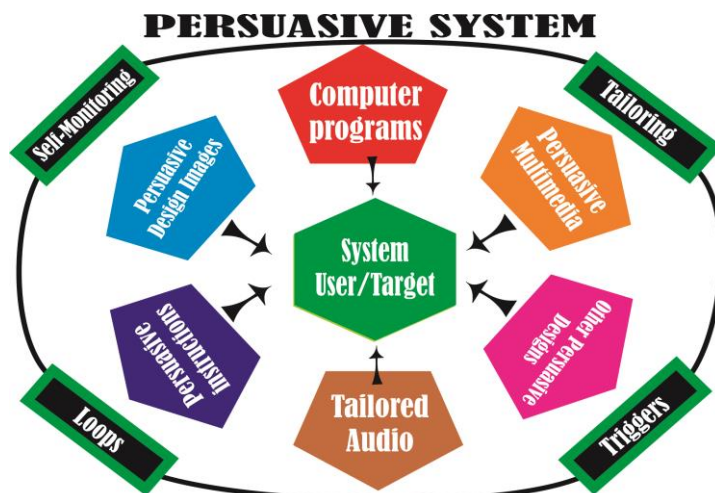
Key-drivers are simply the major object of attention, attraction or focus in persuasion drives and systems intended to be used as a means of reaching the larger populace. More often than not, the creation of effective persuasive designs and systems demand the adoption of dynamic links and major key drivers for the achievement of optimum persuasion. Children not only now constitute a major part of the population targeted by persuasive designers, but are also, in contemporary times, adopted as main key-drivers in persuasion drives as can be obviously observed, for example in the product packaging and advertising industries. This trend (adoption of children as key-drivers in persuasive designs, contents and systems) has its prospects, but it also has major implications especially for children. Therefore, this study reviewed the prospects the adoption of children as key-drivers in persuasive systems and campaigns portends as against its possible social and health implications for children and the society at large with the view to curbing possible or existing abuses.

## **2.0 Method**

This study adopted a fair content analysis method supported with mild survey analysis for validation of claims where necessary. Selected local and international persuasive designs, including television advertisements, posters and product designs, were adopted for the purpose of fairly examining their contents with emphasis on child-character adoption as well as the possible positive and negative prospects and implications of the trend. Direct quotes, images or snapshots from existing persuasive videos were adopted strictly for the purpose of clarity. Results are as discussed in the remaining sections of this work. Based on the results, the study proposed few germane recommendations with particularly the attention of the Child protection practitioners, health care and behavioural-medicine professionals, advertising or instructional contents control agencies or institutions in developing countries, drawn to this subtle area of abuse. The study is meant to serve as basis for further more comprehensive enquiries.

## **3.0 Persuasive Designs and Systems**

Persuasion is an attempt to change attitudes or behaviour or both [14]. Persuasive arguments are deliberately created through persuasive designs. Persuasive designs come in the forms of simple and complex machines, products, visual contents, instructional or informative materials, consumables and video games and so on. Developed from Behaviour Change theory, persuasive designs engage a number of socio-psychological and design theories to influence people towards desired target behaviours [15]. These designs can be used in various forms to influence various aspects of human life ranging from health related behaviour to consumption behaviour, education, religion, politics and environmental sustainability. A persuasive system is a set of persuasive designs intended to work together to achieve the purpose of persuasion (figure 1). It is a collection of persuasive entities designed and intended to achieve a particular persuasion drive, behavioural target or campaign. They are often flanked by deliberate tailoring, timely triggers, essential loops and self-monitoring. These are often intended to keep the target user/audience within the influence range of the system.



**Figure 1:** Sample Persuasive System

Persuasive systems, depending on the designer or design team, may consist of various entities such as:

1. Persuasive game designs
2. Persuasive instructional contents
3. Persuasive advertisements
4. Persuasive computer softwares or phone applications
5. Persuasive websites or web-contents
6. Persuasive product designs or
7. Persuasive product packages
8. Persuasive texts and so on

A designer may, for instance, decide to adopt persuasive product packages, persuasive TV-advertisement, persuasive posters/fliers, persuasive transit-Ads, all meant to work together to persuade potential users to use a particular product, brand or exhibit a target behaviour. This paper appraised two of the above listed persuasive design categories that are commonly adopted in persuasive systems:

1. Persuasive advertisements and
2. Persuasive product/package designs

These persuasive designs bear information or messages that are aimed at influencing the consumer or user. In a bid to sell out a product/service, win the support of the voters, encourage healthier and more environmentally friendly behaviours and so on, persuasive system designers may selectively or collectively adopt these designs to influence users and audiences. Persuasive systems have been described as having the advantage of being “interactive, persistent, anonymous, and multimodal, and they can make sense of large amounts of information” [16, 8]). These information or messages are passed through adopted key-drivers (adopting media the designers consider most effective for reaching the targeted key-driver) with a view to reaching out and persuading the general populace.

### **3.1 Persuasive Advertisements**

Advertisement can be viewed in various perspectives such as a communication process, a marketing process, an economic and social process, a public relations process or information process. It can also be viewed from its functional perspective with persuasion as a major

example. This function of advertisement may be achieved in both the print and the multimedia through various media including radio, television, the internet, video games, magazines, newspapers and product design or packaging.

One of the most widely used means of persuasion is advertising. Television advertisement may not necessarily be persuasive. This depends on its function or aim of creation. For instance, it may be merely aimed at passing across information. Such an advertisement is not necessarily persuasive. It is merely informative. Television advertisement may be both informative and persuasive. This occurs when the advertisement is not only meant to pass across information, but also aimed at persuading the audience to carry out a targeted action or behave in a specific way.

Many television advertisements are intended to be persuasive though [17]. Also, many of them are targeted at children, or so it seems at first glance. A content analysis of selected beverage TV-advertisement in western Africa, conducted by the researcher (unpublished), reveal that many of such adverts adopted children as key-drivers. However, to the unsuspecting eyes, children were merely targets of these advertisements.

Some children associated television adverts adopted for this study include:

1. Cowbell TV-Advertisement (Figure 2) [18]
2. Yumvita TV-Advertisement (Figures 3, 5, 6 and 7) [19]
3. Indomie TV-Advertisement (Figures 4 and 13) [20]
4. Miksi TV-Advertisement (Figures 8, 9, 10, 11 and 12) [21]
5. Vauxhall clever family cars TV-Advertisement (Figures 14a and 14b) [22]
6. Volkswagen Kids dreams advert - The new Golf TV-Advertisement (Figures 15a and 15b) [23]



**Figure 2:** Cowbell Advertisement.



**Figure 3:** Adult female character in Yumvita-Advertisement.



**Figure 4:** Child character in Indomie TV-Ad



**Figure 5:** Child character in Yumvita TV-Ad





**Figure 6:** Youth character in Yumvita TV-Ad.



**Figure 7:** Adult male character in Yumvita TV-Ad.

Not all children associated advertisements are targeted solely at children. An example is the Yumvita television advertisement. With a baby as its most prominent cast, it will readily seem to the ignorant audience or analyst as though children are the major or sole targets. Contrary to this, the Yumvita advertisement also casted other major characters including adults (one male and one female) and a teenager, all playing catchy, empathic and or humourous roles. These roles were deliberate, as they are very effective elements in the TV-advertisement. For instance, they played humourous roles which proved that the group they represent on the advertisement was as important as that represented by the child since, according to Oladumiye et al. [17], humour makes advertisements more effective especially in terms of attention, interest/desire and action for recall-induction and effective product communication with exception to message-clarity. Hence, it is obvious that the Yumvita, 2017 television advertisement was not only targeted at children (figure 5), but also at youths (figure 6), male adults (figure 7), female adults (figure 3) and the family as a whole which constitutes the society at large. The child in this particular persuasive advertisement was just meant to be a key-driver to reaching the rest of the public.

The Miksi TV-advertisement was also the same, featuring two prominent mid-childhood characters one male and one female (figures 11 and 12) supported by a seemingly late childhood female character (figure 8). With so much emphasis on children, one may be tempted to assume they are the sole targets of the persuasion drive, but that would be wrong. Noticeably, the same TV-advert featured prominently two adult characters namely one female (figure 9) and one male (figure 10).



**Figure 8:** Late-childhood character from the Miksi TV-Advertisement.



**Figure9:** Female-adult character from the Miksi TV-Ad.



**Figure10:** Male-adult character from the Miksi TV-Ad.



**Figure11:** Mid-childhood character, from the Miksi TV-Ad.



**Figure12:** Mid-childhood character from the Miksi TV-Ad.

Most noodles advertisements, as another obvious example, are not actually targeted solely at children, although they may seem so at first glance since the majority of the noodles adverts considered in the content analysis conducted prominently featured children as lead characters. The Indomie TV-advertisements (Figure 4), propagated around western Africa, proved right this assertion. Starting with children characters (three of them, in an outdoor scene) supported by an adult character, the advert culminated in a prominent family setting (Figure 13) led by a prominent family movie adult character. Adverts like this are targeted at the family and the general public as a whole, but with children as the propagating drivers. Noodles are not meant for children alone. The advertisement simply built up its reach up the ladder from children to adults; from outside into our home settings and it worked well.



**Figure 13:** Characters from the Indomie advertisement.

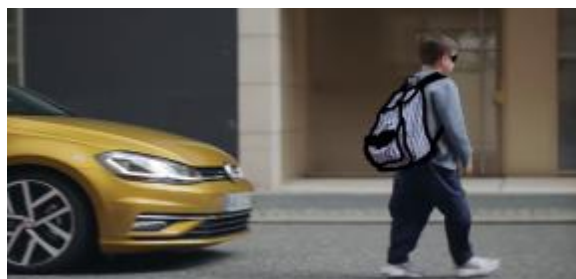
Summarily, companies like the producers of Noodles are not unaware of the benefits of channelling their persuasive drives through children so as to win the loyalty of the larger public.

The general public is the main target of persuasion. Children were simply adopted or used as key-drivers in the system, and not the sole targets. Even cars are advertised using children as key drivers (Figures 14a, 14b, 15a and 15b). Can a child drive? It is even against the law worldwide for a child to drive. Yet they are used as key-drivers with a view to persuading parents to buy specific brands of automobile or other forms of products. The Vauxhall clever family cars TV-Advertisement for example featured children playing “Little Dads”. That would readily catch the attention of any child. The child, in turn, has major roles to play in his/her parents’ buying decisions.

The Volkswagen Golf 7 car advert was not so different (Figures 15a and 15b). The question is: Do children really dream of specific car brands or the persuasive designers are trying to get them, through the Ads, to now do so? These are all persuasive strategies using children as key-drivers and they seem to have been proving effective.



**Figure 14a and 14b:** Child Characters from the Vauxhall clever family cars TV-Advertisement role-playing adults.



**Figure 15a and 15b:** Child-Characters from the Volkswagen Golf 7 TV-Advertisement

### 3.2 Persuasive Product/Package Designs

Persuasive products and packages are designed with the intention to motivate and trigger targeted behaviours in users. They range from functional products like umbrellas, toys and simple machines to consumables such as snacks and so on. Consumables, for example, may bear real/human or computer generated child or children related characters (Figure 16 and 17) especially when children are the major targets of persuasion or have been adopted as major key-drivers in the persuasion drive.





**Figure 16:** Milk product/package with CGI-characters



**Figure 17:** Local consumable product package bearing real/live-action child character.

Persuasive designs and packages are aimed at achieving specific objectives/goals. For example, speed automobiles are meant to encourage speed driving, not to say over speeding. Cigarettes are meant to encourage smoking. Pornographic magazines, websites and channels are meant to promote pornographic addictions and other possible sexual misconducts. The addiction of the user is what the manufacturers, producers and or advertisers of such products capitalize on to fuel their product acceptability and sales. Marcuse [24] establishes this persuasive link between persuasive designers, producer or advertisers and the users/consumers which many childcare and behavioural-medicine practitioners might have ignored so far:

“The means of mass transportation and communication, the commodities of lodging, food, and clothing, the irresistible output of the entertainment and information industry carry with them prescribed attitudes and habits, certain intellectual and emotional reactions which bind the consumers more or less pleasantly to the producers and, through the latter, to the whole. The products indoctrinate and manipulate.” [24].

Although, the designers of these products probably might not have thought about their designs as persuasive entities. Yet, the behavioural changes resulting from them may be considered as deliberately targeted. Redström [25], citing the designing of the umbrella as a product, puts it in clearer terms:

“though the inventors of the umbrella perhaps did not think about their design in terms of ‘persuasion’, the resulting change in user behaviour, and possibly also attitude towards being outdoors when it is raining, is certainly intentional” [25].

According to Redström [25], designs are generally intended to be persuasive even when the designers might not have thought of persuasion originally. Figure 18 is an example of such persuasive product designs. Cigarette package designs, as another example, were discovered to be encouraging children to get involved in smoking (Figure 18). A survey of children between ages 11 and 16 established that the thin Sleek packaging of cigarettes were particularly attractive and prompted youngsters to decide to take up smoking [26]. The packaging of most

of these products is so persuasive that organizations campaigning against smoking for example make proposals for plain packs [27, 28].

Summarily, persuasive designs and packages are products or designs that ‘speak for themselves’, encouraging the user to behave in specific/targeted ways. They have their prospects

#### **4.0 The Prospects**

Children constitute a major target of persuasive designs. One major reason for this trend is that they constitute a very important group of consumers that influence the purchase of products [29, 30]. They are recognized as a primary market, an influencing participant and a future market [30]. They play great role in the consumption behaviour of adult consumers. This has been confirmed in various researches [31, 32, 33, 29- 30]. Therefore, successfully persuading children to accept a product, whether consumable or functional, one could surmise, may mark the beginning of the success of such a product. Hence, reaching children may readily mean reaching the greater public. This could be of immense advantage in the reduction of product failure for example, which is good for business development and profit maximization. Hence, children are specifically targeted, as key-drivers, by persuasive designers, specialized-product designers and marketers irrespective of how physically, socially or morally healthy products being created and introduced to end-users are.

Some of the possible benefits of adopting children as key drivers in persuasive systems and designs include:

1) *Alleviation of product failure*

This would perhaps be the most important of the possible prospects of adopting children as key-drivers in persuasive campaigns. Less product and brand failures means greater acceptability is being achieved. This most often translates into greater product or brand and economic sustainability.

2) *Benefits for advertising sponsors*

This class of beneficiaries of the profits of adopting children as key-drivers in persuasive drives get their rewards in the forms of increased sales, products and brand acceptability and consumer loyalty leading to profit maximization and brand sustainability, more votes and empathy (in religion and politics) and so on.

3) *Benefits for advertising professionals*

The chief benefit the advertising professional makes is economic. The global market today is progressively competitive giving rise to greater need for effective advertising campaigns. The market has become increasingly flooded with varieties of similar products and services with the users and consumer left with many attractive alternatives to choose from [34]. The less product fiasco occur, the more products will be in the market leading to greater competition and need for effective advertising. This will accrue to increased utilisation of advertising professionals. Effective persuasive contents readily serve for improved advertising effectiveness. More appealing advertisements possess greater effectiveness and wider reach leading up to optimisation of product competitiveness. Summarily, successful products flooding the market will mean greater competition. Greater competition will yield the need for more persuasive

contents. The need for more persuasive contents means more jobs for the designer and more jobs will yield greater economic returns.

4) *Benefits for the Government*

Perhaps, one of the most prominent benefits will be economic gain. There is an increasing drive for the diversification of petroleum dependent economies like Nigeria to Agriculture and manufacturing [35]. Without doubt, the more successful manufactured, inventive or innovative products and brands become, the more feasible it will be for that vision for diversification to come to fruition.

5) *Benefits for product users*

Users of products propagated through this trend may also enjoy certain benefits. For example, promoted blood pressure monitoring devices are of immense benefits to the user, who probably might not have bought the product if the promotion was not persuasive enough, provided the product is functional.

These feasible benefits and more will translate into more economic sustainability of the economy and possibly a healthier nation, if propagated products are functional and safe. However, the positive prospects of adopting children as key-drivers in persuasive designs and systems are not without a downside. Should the health and wellbeing of children be sacrificed for example on the altar of economic gain and product failure alleviation?

## **5.0 The Possible Implications**

In the health sector, ideally, persuasive systems are often used to encourage individuals to make healthier decisions and to considerably reduce overall health risks, losses and health care costs. In the green sector (i.e. environmental sustainability), they are used to encourage or reinforce environmentally friendly behaviours. In product design, manufacturing, sale and advertisement or marketing, persuasive systems are used primarily to yield sales or achieve other similar goals often with little or no regards for i.e. the environment or the health of users/consumers. Some of the designs are embedded with morally questionable contents, contexts, messages and structures that are not readily noticeable by some of the audience or given much attention when noticed, but are unhealthy for vulnerable groups like children. For example:

“More than 60 apps, which included children's characters such as Lightning McQueen from Disney's Cars, were infected with malware that sent malicious, adult-themed adverts to smartphones upon which the games were installed” [36].

Although, Google purportedly removed the infected apps and blocked the publishers, the fact remains that children had already been exposed to unhealthy contents that could inhibit their normal development.

The innocence of children leaves them widely vulnerable to questionable designs and contents. While the designers or manufacturers of these questionable product designs might not have intended their designs to be abusive or offensive, some designs however turn out to be questionable (not necessarily abominable though) depending on the perception of the user. An obvious example is the children's ride in figures 18 and 19. This coin operated children ride

looks completely ok from the researcher’s perspective (figure 18). However, when mounted by a girl-child, a completely different picture might be painted (figure 19). While some users or observers may find nothing wrong with this scene (Figure 19), some surveyed respondents considered it abusive (Table 1). This might have been completely unintended by the product designers. However, persuasion to use the product was definitely a deliberate one. The reason for being in business is to make profit. The opinions of 100 adults respondents of Nigerian origin were surveyed by showing them the pictures (figures 18 and 19 respectively) without any prior comments or expression of personal opinions from the researcher. Their responses were as summarised in table 1.



**Figure 18:** A coin operated Children ride product design (Sample A) [37].



**Figure 19:** Children ride product design with a girl-child mounted (Sample B) [38].

**Table 1:** Showing the rating of the picture painted by the scene described in figure 19

S/N	SAMPLES	OFFENSIVE	NOT OFFENSIVE (HARMLESS)	REMARK
1.	Sample A	19 (19%)	81 (81%)	Rated Harmless
2.	Sample B	93 (93%)	7 (07%)	Rated Offensive

The majority of the respondents perceived nothing wrong with the product design when not in use (figure 18), but a greater percentage of the respondents considered the same product offensive when in use (figure 19). The children centred product design shown in figure 18 for example, like many others, is designed to be used by children. However, children won’t be the ones paying for it. Therefore, children were merely adopted as key-drivers for the sales/user drive. These persuasion drives with children as key drivers, though may prove very effective for economic optimisation and sustainability. They may prove effective for the alleviation of product economic failures. However, they are not without some possible implications. Such implications may be: (i.) ethical or moral (ii.) social and or (iii.) behavioural in nature. Some of these implications may include but not limited to the following:



1. Exposure of children to persuasive products above their age grades.
2. Exposure of children to web/internet, mobile and television or advertising contents above their age grades.
3. Tendencies for children to put into action the behaviours that such persuasive designs are intended to encourage, enforce or reinforce or discourage. Children have the tendencies to 'experiment' what they learn from these designs and contents. It is not uncommon for a child to start experimenting smoking with rolled-up papers and actually start smoking (Figure 20) after been exposed to a child-character driven design. An example of such child-character driven designs is as shown in figure 21 which was innocently originally intended to discourage smoking in the presence of children in cars, but looks more like a parent aiding his/her child to smoke. The child in figure 20 was reported to smoke as much as two packs of cigarettes but had managed to cut it down to four cigarette sticks per day [39].



**Figure 20:** A child smoking [39].

4. Encouragement, enforcement or reinforcement of unhealthy eating/consumption, driving or other extreme, violent or sexual behaviour in children due to exposure to unhealthy contents and products. Unhealthy exposures are like seeds 'planted' in the memories of the children and overtime, they 'germinate' and grow into unhealthy habits. The negative habits, such as bad eating habits, drug abuse, sexual maladjustments and such like, are what manufacturers of questionable products and contents leverage on to promote their businesses and maximize profits.



**Figure 21:** A child-character driven Advertisement intended to discourage smoking in the car in the presence of children [40].

Ofcourse, the eventual decision lies chiefly with the users. Persuasion is not only a communication of designers' intentions. It also involves the desires, abilities and the

willingness of potential users. Therefore, a persuasive drive will successfully influence the user to behave in the targeted way only if the user is willing and able to perform the targeted behaviour. This is subject to further research though. Persuasion depends partly on the user's eventual decisions/choices. Just as the persuasive designer makes certain decisions during the creation and encoding of messages in persuasive designs, the user also has choices to make between accepting to behave as the persuasive design suggests or to reject the suggestions. Persuasive designs merely suggest through the affordances they offer the users or potential users. They do not exert pressure nor forcefully impose habits, behaviour or addictions; otherwise, it will amount to coercion and coercion is not persuasion. Becoming addicted, for example, is the choice of the user. The addiction then becomes an advantage for the producer, manufacturer or advertiser or any other person that stands to benefit from the success of the product.

However, while adult users may be fully aware of their choices and the implications of a particular habit or behaviour, children may not. They are merely vulnerable and become exposed innocently to vices (such as abuses, violent, drugs and sexual contents) that might have been unintended. Therefore, though have great positive prospects, persuasive systems and designs, with emphasis on persuasive advertisements, computer games and products, may pose grave negative implications for the normal development of children who are often adopted as key-drivers in persuasive drives.

## **6.0 Recommendations**

Based on the results of the mild content analysis of selected persuasive designs/contents discussed in earlier sections, this study proposes the following recommendations:

- (a.) Child protection practitioners, health care and behavioural-medicine professionals, advertising or instructional contents control agencies or institutions in all countries should strictly monitor contents before the public is exposed to it.
- (b.) Only contents cleared by such agencies as stated in item (a) above should be allowed to air on any media platform or be printed.
- (c.) Government should purposefully enact policies that will impose strict and quick sanctions and penalties on defaulting designers, programmers, design sponsors or any other associated party.
- (d.) Product designs must be vetted by the appropriate agencies before patency rights and production rights are granted. Designers should be asked to explain the rationale behind their designs. Questionable designs should be queried irrespective of Designer's perspective.
- (e.) Parents and guardians should vet products and persuasive contents for obvious and unobvious harmful contents and structures so as to help protect their children against deliberate or unintended exposures and or abuses.
- (f.) More detailed researches should be conducted on exactly how persuasive designs adopting children as key-drivers can influence children's minds, memories and behaviours with a view to further promoting the UNICEF Strategic Plan including child protection and health [41].

## **Conclusion**

Every persuasive designer or a sponsor of a persuasive campaign has at least one or more objectives. Politicians want votes, religious leaders want to achieve influence, the manufacturer or producer of a product wants maximised brand acceptability and sales which in turn translates into optimised profit, a magazine wants heightened readership, a television agency desires increased viewership and so on. Irrespective of the want or need, the major objective remains acceptability of the messages encoded in the persuasive designs or system adopted which is expected to translate into some forms of benefits or profits which are usually in favour of the persuasive designer or sponsor. Adopting children as key drivers or dynamic links in these persuasion drives seem to be proving effective. However, while such persuasion drives may prove really effective for achieving the designer's or the sponsor's objectives, it may however pose major retrogressive implications for the healthy development and adjustment of children who are often vulnerable to abuses and negative influences and are not fully aware of the consequences of their choices, permitted exposures to influences or designs and experimentations. Hence, conscious efforts should be made to protect children against persuasive designs and systems that may pose minor or major implications for their wellbeing both in the long and in the short run.

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### **Declaration**

The author declares that no competing interests exist. This study was by no means intended to promote, defame or affect, by any means possible (positive or negative), any of the persuasive designs (Advertisements, products and softwares etc.) adopted for this study. They were adopted strictly for academic research purpose only and are not intended for any profit making or similar purpose. They were analysed based strictly on their design contents and structures. Analysed clips were available from cited sources as at the time of manuscript preparation.

### **References**

- [1] World Health Organization. (2006, April). *Public Health Innovation and Intellectual Property Rights*. [Internet]. (R. D. Commission), Ed.) 2006, April [Cited 2019 September 12]. Available from: <https://www.who.int/intellectualproperty/documents/thereport/CIPRH23032006.pdf>
- [2] Odji, E. Graphic Design Principles and Theories Application in Rendering Aesthetic and Functional Installations for Improved Environmental Sustainability and Development. *International Journal of Engineering and Manufacturing(IJEM)*. 2019; 9(1): 21-37. doi:DOI: 10.5815/ijem.2019.01.03
- [3] Pinheiro, P. S. *World Report on Violence Against Children*. [Internet]. 2001 [Cited 2019 September 12]. Available from: <http://nutritioncluster.net/wp>

- content/uploads/sites/2/2013/08/Pinheiro-2006-World-Report-on-Violence-Against-Children.pdf
- [4] Bailey, K. A. *School Policies and Legal Issues Supporting Safe Schools*. [Internet]. 2002, September [Cited 2019 September 12]. Available from: <https://www.ncjrs.gov/pdffiles1/ojdp/book2.pdf>
- [5] Authorities of the Republic of Cyprus. *National Strategy and Action Plan to Combat Sexual Abuse and Exploitation of Children and Child Pornography*. [Internet]. 2016 [Cited 2019 September 12] Available from: <http://www.mlsi.gov.cy/mlsi/sws/sws.nsf/All/070F867D2763F568C2257FC70024C4F>
- [6] Backlund, S., Gyllenswärd, M., Gustafsson, A., Ilstedt, S., Mazé, R., & Redström, J. (2006). Static! The aesthetics of energy in everyday things. In: Design Research Society; 2006; *International Conference in Lisbon. 2006*; Lisbon; IADE.
- [7] Gabrielsen, K. *Designing Human Behaviour. How persuasive design methodology translate into the designer work process, and can be used in guiding user behaviour for planning sustainable habits*. [Internet]. 2014 [Cited 2017 November 16]. Available from: <https://www.ntnu.edu/documents/139799/1270604448/TPD4505.KristinRovik.Gabrielsen.pdf/bea9a1d4-961e-4d6e-8f16-38f42ea6ccf8>
- [8] Sethumadhavan, A. Principles of Persuasive Design. (Research Digest) Ergonomics in design. 2018; p. 32. doi: DOI: 10.1177/1064804618776963
- [9] Kotthaus, C., Ludwig, T., & Pipek, V. (2016). Persuasive System Design Analysis of Mobile Warning Apps for Citizens. *Adjunct Proceedings of the 11th International Conference on Persuasive Technology*; 2011; Salzburg, Austria: Springer-Verlag Heidelberg. [https://static1.squarespace.com/static/537a1f91e4b0ccfe943c6bc6/t/56fbb7b940261dc6fac3fb91/1459337146812/7\\_Kotthaus\\_Ludwig\\_Pipek.pdf](https://static1.squarespace.com/static/537a1f91e4b0ccfe943c6bc6/t/56fbb7b940261dc6fac3fb91/1459337146812/7_Kotthaus_Ludwig_Pipek.pdf)
- [10] Calvert, S. L. Children as Consumers: Advertising and Marketing. *The Future of Children*. 2008; 18(1): 205-234.
- [11] Marencheva, D., Petrovska, I., Bundaleska, E., & Tomovska, A. Advertising to Children and Parental Buying Behaviour in the Municipality of Gevgelija. *Economic Development*. 2016; 2016(1-2): 225-244.
- [12] Lockton, D., Harrison, D., & Stanton, N. A. (2008). Design with intent: Persuasive technology in a wider context. *PERSUASIVE. Persuasive Technology - Third International Conference; 2008*; p. 274-278.
- [13] Lockton, D., Harrison, D., & Stanton, N. A. The design with intent method: A design tool for influencing user behaviour. *Applied Ergonomics*. 2010; 41(3): 382–392.
- [14] Fogg, B. J. *Persuasive technology: Using computers to change what we think and do*. Boston, MA, USA: Morgan Kaufmann Publishers; 2003.
- [15] Ainsworth, T. (2012). Improving Therapeutic Exercise Devices for People with Rheumatoid Arthritis: A Research Method Combining Cultural Probes and Persuasive Design Theory. In: *PERSUASIVE. The 7th International Conference on Persuasive Technology; 2012 (June 6-8); Linköping, Sweden*. <http://www.ep.liu.se/ecp/068/ecp12068.pdf>
- [16] Rezai, L. S., & Burns, C. Using cognitive work analysis and a persuasive design approach to create effective blood pressure management systems. In: Human Factors and Ergonomics Society. *The International Symposium on Human Factors and Ergonomics in*



- Health Care*; 2014; Santa Monica, CA. p. 36-43  
<http://journals.sagepub.com/doi/10.1177/2327857914031005>
- [17] Oladumiye, E. B., & Odji, E. A Comparative Assessment of the Effectiveness of Humorous Contents in Television Advertisements: The Nigerian Context. *International Journal of Latest Trends in Engineering and Technology*. 2017; 8(4-1): 168-174. doi:DOI: <http://dx.doi.org/10.21172/1.841.29>
- [18] PromasidorGroup. *Introducing New Cowbell Chocolate*. [Internet]. 2015, November [Cited 2018 June 20] Available from: <https://www.youtube.com/watch?v=BLZOCh39IEg>
- [19] EmergeGhanaLtd. *Yumvita Commercial*. (Promasidor Ghana). [Internet]. 2018, April 9 [Cited 2018 June 20] Available from: <https://www.youtube.com/watch?v=SfZhaQNTqyA>
- [20] IndomieNigeria. *Indomie Cash For Scholarship TVC*. (Indomie Nigeria). [Internet]. 2017, March 22 [Cited 2018 June 20]. Available from: [https://www.youtube.com/watch?v=m\\_OIxuKr2D4](https://www.youtube.com/watch?v=m_OIxuKr2D4)
- [21] StatusPromoTV. *Miksi Milk*. (P. N. Limited, Producer). [Internet]. 2017 December 25 [Cited 2018 June 20]. Available from: <https://www.youtube.com/watch?v=XGtfrui637U>
- [22] TheHudsonStore. (2009, October 29). *VAUXHALL 'Little Dads'*. Retrieved June 12, 2017, from [www.youtube.com: https://www.youtube.com/watch?v=kn4gPkrCl2o](http://www.youtube.com/watch?v=kn4gPkrCl2o)
- [23] VolkswagenUK. *Volkswagen Kids dreams advert - The new Golf*. [Internet]. 2018, January 15 [Cited 2018 January 16]. Available from: <https://www.youtube.com/watch?v=6DfHOoTTvJI>
- [24] Marcuse, H. *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society*. Routledge; 1991.
- [25] Redström, J. Persuasive Design: Fringes and Foundations. *Persuasive Technology*. 2006; 3962: 112-122. doi: DOI: 10.1007/11755494\_17.
- [26] Lavigneur, N. *Glitzy packaging 'encouraging kids to smoke', cancer charity claims*. [Internet]. 2013, September 27. [Cited 2017 December 14]. Available from: <https://www.mirror.co.uk/lifestyle/health/smoking-cigarette-packaging-encourages-children-2309027>
- [27] World Health Organization. *Plain Packaging of Tobacco Products; Evidence, Design and Implimentation*. [Internet]. 2016 [Cited 2019 December 2]. Available from: [https://apps.who.int/iris/bitstream/handle/10665/207478/9789241565226\\_eng.pdf;jsessionid=36C03924D2743B78E40D6E9C83BD9745?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/207478/9789241565226_eng.pdf;jsessionid=36C03924D2743B78E40D6E9C83BD9745?sequence=1)
- [28] Nicola, R. Plain Packaging Special Issue-Editorial. *QUT Law Review*. 2017; 17(2): 1-3. doi:DOI: 10.5204/qutlr.v17i2.697
- [29] Neeraj, A. Ethics in Advertisement and impact on Women and Children. *International Journal of Research in Business Management*. 2014; 19-26.
- [30] Arul, M., & Vasudevan, V. (2016). *Influence of Children on Parent's Buying Behaviour; The Cost And Management*. [Internet]. 2016 [Cited 2017 July 5]. Available from: <http://www.icmab.org.bd/images/stories/journal/2016/3.Influence%20of%20Children.pdf>
- [31] Kaur, P., & Raghbir, S. Children in family purchase decision making in India and the West: a review. *Academy of Marketing Science Review*. 2006; 8(2): 1-30.
- [32] Ebster, C., Wagner, U., & Neumueller, D. Children's influences on in-store purchases. *Journal of Retailing and Consumer Services*. 2009; 16(2): 145-154.

- [33] Ishaque, A., & T., M. Influence of Children on Family Purchase Decision: Empirical Evidence from Pakistan. *International Review of Management and Business Research*. 2014; 3(1): 162-173.
- [34] Odji, E., Oladumiye, E. B., & Adelabu, O. S. The Recall and Communicative Effectiveness of Computer Generated Imagery in Television Advertisements; A Case Study of Lagos, Nigeria. In: Kansei Society. *KEER 2016 International Conference on Kansei Engineering and Emotion Research; August 31-September, 2016*; Leeds, University of Leeds, UK. [https://www.researchgate.net/publication/326208269\\_KEER2016\\_INTERNATIONAL\\_CONFERENCE\\_ON\\_KANSEI\\_ENGINEERING\\_AND\\_EMOTION\\_RESEARCH\\_The\\_Recall\\_and\\_Communicative\\_Effectiveness\\_of\\_Computer\\_Generated\\_Imagery\\_in\\_Television\\_Advertisements\\_A\\_Case\\_Study\\_of\\_Lagos](https://www.researchgate.net/publication/326208269_KEER2016_INTERNATIONAL_CONFERENCE_ON_KANSEI_ENGINEERING_AND_EMOTION_RESEARCH_The_Recall_and_Communicative_Effectiveness_of_Computer_Generated_Imagery_in_Television_Advertisements_A_Case_Study_of_Lagos)
- [35] Odji, E., Oladumiye, E., & Odewole, P. Application of Design Theories and Principles for Improving Local Agricultural Products and Packaging Design Aesthetics for Optimized Economic Value. *International Journal of Agriculture and Earth Science*. 2019; 5(2): 1-11. <http://doi.org/10.5281/zenodo.3402033>
- [36] Field, M. Pornographic adverts found 'hiding' in children's smartphone games on Google Play. *The Telegraph; Technology Intelligence*. [Internet]. 2018, January 12 [Cited 2019 March 8]. Available from: <https://www.telegraph.co.uk/technology/2018/01/12/pornographic-adverts-foundhiding-childrens-smartphone-games/>
- [37] WorthPoint. *Coin operated Donald Duck Childrens Ride Kiddie Ride*. [Internet]. [Cited 2019, March 8]. Available from: <https://www.worthpoint.com/worthopedia/coin-operated-donald-duck-childrens-ride-kiddie>
- [38] Raveneitor.ze. (2013, February 23). *Fail level Donald Duck*. [Internet]. [Cited 2019, March 8]. Available from: <https://www.memedriod.com/memes/detail/317278>
- [39] Dhumieres, M. *The number of children smoking in Indonesia is getting out of control*. (Public Radio International) [Internet]. Unavailable [Cited 2019 March 29]. Available from: <https://www.pri.org/stories/number-children-smoking-indonesia-getting-out-control>
- [40] Walesonline. *Wales could become the first part of Europe to ban smoking in cars carrying children*. [Internet]. 2011 [Updated 2013 July 14; Cited 2019 March 14]. Available from: <https://www.walesonline.co.uk/news/wales-news/wales-could-firsteurope-ban-1821444>
- [41] UNICEF. Unicef Annual Results 2017; Child Protection. [Internet]. 2017. [Cited 2019 December 18]. Available from: [https://www.unicef.org/media/47761/file/Child\\_Protection\\_2017\\_Annual\\_Results\\_Report.pdf](https://www.unicef.org/media/47761/file/Child_Protection_2017_Annual_Results_Report.pdf)