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Discourses, Methods and Practices of Diversity, Equity,  
Inclusion and Belonging: Towards a Global Shared Framework

Discorsi, metodi e pratiche di diversità, equità, inclusione  
e senso di appartenenza: verso un quadro condiviso globale

*Edited by  
Fadia Nordtveit and Paola Catenaccio*

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# Addressing Young Girls in STEM: Building Inclusion through Dialogicity

## The Case of GoldieBlox

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### ABSTRACT

The number of women in Science, Technology, Engineering and Mathematics (STEM) is still limited compared to men, and one of the reasons for this is the lack of women's sense of inclusion and belonging within engineering contexts. It has been argued that such a sense of inclusion and belonging might be developed by exposing girls to STEM with specific activities, games, and toys from a young age. This case study explores how the US toy manufacturer GoldieBlox Inc. addresses and includes young children, specifically girls, in the promotion of their products. GoldieBlox is a company that specifically targets girls to encourage their interest in STEM subjects, namely science, technology, and mathematics. Through a close reading and a qualitative analysis of the company's webpages, this paper explores the links between consumerism, gender, belonging, and promotional language. Under the linguistic lens of dialogicity, I analyse how girls are addressed and included in STEM through the promotion of specific products.

*Keywords:* advertising; belonging; dialogicity; inclusion; STEM.

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### 1. INTRODUCTION

Within engineering contexts, the number of men is still higher than that of women (Wilson and VanAntwerp 2021). Women are less keen to pursue a degree in STEM (Science, Technology, Engineering and Mathematics) while men show less interest in HEED (Health care,

Elementary Education, and the Domestic spheres) subjects (Tellhed, Bäckström, and Björklund 2017). One of the reasons for this is the lack of sense of belonging of both women and men when respectively approaching a predominantly male-dominated context, such as a STEM one, or a female-dominated one as a HEED environment (*ibid.*). Set against this background, the aim of this paper is to explore how current initiatives aimed at encouraging girls to pursue a career in science seek to address them and make them feel included in STEM. The analysis is qualitative in focus and takes a case study approach, looking in particular at the way in which promotional language in toy marketing is functionally designed to achieve its purported inclusive aim. The case study will therefore examine the recent trend of promoting toys for young girls through advertising campaigns that suggest that these toys will in some way empower them to break away from more traditional ones that, according to the toys' designers, limit girls both in terms of play and in their future career choices.

Specifically, the official website of the American toy company GoldieBlox – which is addressed to young girls who are/might be interested in STEM, will be taken into account, and a close reading of their products will be carried out. In particular, I will explore how the company engages with potential customers and young girls, highlighting the tension between promotional and inclusive language and how the latter contributes to shaping a sense of belonging in girls who might be interested in STEM. Following a brief overview of consumerism and gender (1.1), I will explore the links between communities of consumption and sense of belonging (1.2), followed by an introduction to GoldieBlox (2) and its mediatic case (2.1). Section 3 presents materials and methods, while section 4 provides an overview of the results. The paper will then close with discussion and conclusions (5).

### 1.1. *Consumerism and gender*

Consumerism is a term used to study a phenomenon that emerged after World War 2 when countries such as the USA, the UK and other European states saw the rise of consumer societies. According to Benson (1994, 5), consumer societies are societies “in which choice and credit are readily available, in which social value is defined in terms of purchasing power and material possessions, and where there is a desire for that which is new, modern, exciting and fashionable”. Consumer societies

and modern markets were fashioned by several changes occurring at the same time, such as the development of mass production, consumption expansion, enlargement of the middle classes, industry concentration groups and the rise of mass advertising campaigns of nationally branded products (Ramsay 2012). In consumer societies, the consumer is at the center of the universe. A consumer, according to Bauman, is a person who uses a product, buys it, wears it and owns its exclusive property, and a consumerist society is one in which “wanting is taken out of waiting and waiting out of wanting” (Bauman 2005, 25). In fact, the worst possible scenario in such a society would be if consumers were to lose their desire to buy and consume. Walter Benjamin goes as far as claiming that capitalism has become the religion of this new society, with the difference that, in place of dogma, capitalism goes straight to the cult aspect (2005 [1922], 225). However, the importance given to the consumer also calls for higher citizenship rights to empower and protect consumers in modern markets. This is especially true for the most vulnerable categories, such as children or the elderly.

In consumer societies, in order to maximise the chances of customers’ uptake and purchase, marketing and advertising activities target specific customer groups with strategies that they deem to be aligned with their specific needs, desires and preferences. A basic marketing segmentation involves the gender-based differentiation of products. This is why, at a certain point in history, it would appear that the world was no longer ‘black and white’ but blue and pink. In order to sell more, and hence increase profits, many everyday objects began to be available in male and female versions. Products like razor blades, watches, purses – almost any object we can think of – are available in a baseline, neutral, usually dark coloured version aimed at men, and also in a smaller, more rounded, prettier and typically pink version for women. In marketing, this strategy is known as “pinking and shrinking” and makes it possible for companies to sell the same object twice over thereby boosting sales and hence making higher profits (Paoletti 2011).

It would appear that pinking and shrinking begins at birth, not just with the colour of babies’ clothes and their bedroom walls, but also with the toys they play with. So, to a certain extent, gender and children’s culture are “dictated” by toy firms that tend to make and market blue toys for boys and pink toys for girls. Besides colour and size, gender-tailored objects differ on a number of other characteristics. According to Berger, for instance, “boys act, girls appear” (1990, 45) and “a man’s presence depends on the power that he embodies” (47). Thus, conventionally

boys have been expected to play with ‘aggressive’ toys like catapults and guns, while girls play with dolls, tea sets and the like. However, there has been a recent wave of initiatives aimed at pushing little girls in the direction of more ‘masculine’ toys through – amongst other things – girly versions of building blocks, of which GoldieBlox and Lego for girls are well known examples<sup>1</sup>. A focus on ‘action’ in girls’ toys has extended beyond the design of the above-mentioned gender-tailored version, and is starting to affect more conventional ‘girl’s’ toys. A case in point is the famous Barbie doll, who over the last decade has started to appear as an astronaut or engineer – typically male-dominated professions – while keeping her perfect stereotypically feminine image.

Whether these toys are truly promoting gender equality or are simply a way of getting people to spend more money is, however, debatable. While it is true that companies follow social trends, their potential to foster changes in social expectations should not be underestimated: they can indeed have a role in creating ‘spaces’ of belonging for children who would otherwise feel left out. For instance, the decision to create bricks for girls or a Barbie Engineer might not only be a marketing strategy, but also a way to tackle the need of belonging for women to “fit in” in STEM contexts (Tellhed *et al.* 2017). Recent toy campaigns have indeed succeeded in changing, albeit to a limited extent, the gender-specific orientation of their line of products by addressing issues of inclusion (De Almeida 2017), giving space and visibility to dolls that can be argued to potentially encourage children to take non-gender-stereotypical paths.

## 1.2. Advertising and sense of belonging

Within the context of “consumer culture” (Featherstone 1991) we live in, promotional discourse and advertising play a fundamental role. The intention of both advertising and promoting is to “hook” consumers and, to a certain extent, manipulate them (Jarowska 2020): this can be achieved through specific linguistic features that grab audiences’ attention, such as slogans, neologisms, use of forms of engagement (especially the personal pronoun *you*), and repetitions (Musté, Stuart, and Botella 2015).

Advertising has been described as a “parasitic discourse” which has also colonized non-commercial genres (*ibid.*), with the function of

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<sup>1</sup> <https://www.lego.com/en-gb/toys-for-girls>.

not only persuading people to produce, but also amuse, inform, misinform, worry and warn (Cook 2001 [1992], 9). In this latter case, engaging in dialogue with the intended audience plays an important role as corporations make assumptions about their addressees and endeavor to talk to them in order to both attract them and make them feel part of their community. Within this context, advertising positions itself somewhere in between the interests of the consumers and those of the producers. This tension is also reinforced by discourse, which is crucial in the (re)construction of the existing relationship between potential consumers, products, and producers (Crichton 2010). This whole interplay further supports the creation of “consumption communities” where “the product/consumer relationship is consummated in consumption, promoted as the accomplishment of a desirable lifestyle” (*ibid.*, 111). Within this consumption process, the consumer is willing to be changed and molded by the product, while the product comes to life as it engages with the consumer. The “desirable lifestyle” achieved through this consumption process contributes to shaping the social identity of those consumers, that is, their sense of belonging, which is further fulfilled through social bonds and relationships (Baumeister and Leary 1995). These social bonds and values are bolstered by a sense of collective identity shared by members that are brought together by the same interests, and when the aim of such gatherings is not grounded in the commercial world (as is the case with knitting, for example), one may speak of “tribes” or tribal communities (Cova and Shankar 2020).

Within the genres of promotional discourse, toys have been extensively analysed, especially from a marketing perspective (Grimes 2015). Linguistic analyses of toy-related communication have also been produced, examining the way in which products are discursively constructed for promotional purposes focusing on access, voice, diversity, and engagement (Green and Holloway 2017), inclusion (Bowersox 2022; Santikul 2024) and gender roles (Kvidal-Røvik 2021). However, there appears to be limited research on how language is used to engage with potential buyers and users to challenge social stereotypes and foster a sense of belonging and inclusion in a specific community of consumers, particularly when such community also includes very young people.

## 2. BUILDING BRICKS FOR GIRLS: THE CASE OF GOLDIEBLOX

In 2012 Debbie Sterling, an engineer from Stanford University, set out to launch a new toy that she hoped would radically change both the way girls were depicted in the media and their future careers. In a Ted Talk<sup>2</sup>, she argued that one of the reasons why girls are under-represented in the sciences is the kind of toys they play with as children. At the time of her talk, in the USA only 11% of the female population applied for places on university engineering courses, and very few women worked in the sciences. While the situation has somewhat improved, a considerable gender gap persists: according to the 2021 EUstat<sup>3</sup>, only 32.8% STEM graduates are women, while in the US women still make up for only 34%<sup>4</sup>.

Conventionally, or perhaps stereotypically, girls are widely believed to enjoy playing with dolls and tea sets and at dressing up as princesses, while boys are expected to favour the rough and tumble of more energetic games, and get to play with action toys like model trains and planes. Sterling argues that conventional girls' toys inhibit their future skills and hence their careers. Tired of gendered pink aisles in toyshops, Sterling decided to do something innovative for girls who wanted to be more than "simple princesses" and came up with a product called GoldieBlox, a building toy that she claimed could help girls develop the kind of spatial skills boys already have an opportunity to acquire through their typical forms of playing. According to Sterling, a girl can fully realise herself as a woman by competing in a traditionally male field such as engineering. The world of toys is highly limiting in this respect, but times are changing. As she claims, "the modern parent wants more for her daughter, and is frustrated by her lack of options". This is why GoldieBlox is "more than a toy: it is a social mission". Whether Sterling's venture really is a "social mission" or just another way of perpetuating a stereotype is, however, debatable. Moreover, while she comes across as passionate and earnest, one cannot help but suspect that behind Sterling's mission there may be (also) a money-making operation. Consequently, both the American and British press dedicated a lot of space and debate to this new toy.

What made GoldieBlox so famous was the commercial that was used to launch the product. This commercial, which was watched by 3.5 mil-

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<sup>2</sup> Available at: <https://www.youtube.com/watch?v=FEeTLopLkEo>.

<sup>3</sup> Available at: [https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240308-2#:~:text=In%202021%2C%20in%20the%20EU,compared%20with%202020%20\(32.5%25\)](https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240308-2#:~:text=In%202021%2C%20in%20the%20EU,compared%20with%202020%20(32.5%25)).

<sup>4</sup> Available at: <https://www.aauw.org/resources/research/the-stem-gap/>.



lion viewers in three days, told the story of “GoldieBlox and the Rube Goldberg Princess Machine” (2013)<sup>5</sup>. The ad opens with three girls aged around nine who look bored while watching a pink girly programme on television; all of a sudden, a GoldieBlox advertisement breaks through and gives the girls a tool to create a Princess Machine. At the beginning of the advertisement, the background song consists of a parody of a misogynist song by the Beastie Boys called *Girls*, but the lyrics soon change into those of a feminist anthem (Mardoll 2013). The girls create their machine, which consists of an unlikely series of levers, pulleys and platforms all linked together, but the ad is predominantly pink and fluffy and levers and pulleys are separated by hearts, flowers and other ‘girly’ objects. Thus, despite GoldieBlox’s claims that it aims to promote gender equality (or at least gender neutrality), its components are mainly pink, a traditionally ‘girly’ colour. This only partially successful break from stereotypical representations is probably the reason why, in 2023, Sterling launched a new video format – the Eggventurers – in an effort to pursue her stated goal. The main characters of the Eggventurers are five different coloured animated eggs (Robin, Pascha, Goose, Ducky, and Red) with no arms nor legs whose aim is to “overcome obstacles” by using STEM. Despite not using much dialogue in the first videos, the choice of using gender-neutral characters suggests that the company is moving towards a policy of inclusion and diversity, hence adjusting the target to all genders.

The case of GoldieBlox has been analysed from a critical perspective (Blosser 2021); findings have shown that the marketing of these toys impacts on conventional girl power rhetoric, with agency being preferred over femininity (Lippman 2021). Analyses of the corporate communication of GoldieBlox also revealed how the promotion of values goes hand in hand with cultural interests, generating commitment and a sense of belonging not only at an individual level, but also in the company’s achievements (Hudak 2016). Specifically, through their narrative(s), the company has succeeded in creating inspirational models as well as tools to learn and play with, while being “instrumental in bringing the gendered toy debate to public attention, advocating for embodied awareness of our gendered biases” (Hudak 2016, 13). As these comments testify, the GoldieBlox case has attracted a considerable deal of attention. In approaching it, critical and multimodal perspectives have been privileged, while the way the audience is textually and discursively

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<sup>5</sup> Available at: <https://www.youtube.com/watch?v=IIGyVa5Xftw>.

addressed has seldom been foregrounded. It is precisely this latter theme that this study seeks to address.

### 2.1. *GoldieBlox: debates and studies*

As previously mentioned (see 2.2), the GoldieBlox case has been extensively dealt with in the daily press before and beyond academia. Among the critiques levelled at it in the media, especially noteworthy is that of feminist blogger Mardoll (2013), who points out that the problem with women not entering STEM is unlikely to be solved by the creation of a new cool toy. Rather, more conducive to its solution might be to increase efforts to make the atmosphere more comfortable for women in the STEM environment, so that they can develop a sense of belonging which they still find difficult to develop. As long as STEM and HEED continue to be respectively mainly male- and female-dominated, high-school students will be more likely to feel to belong and to fit in majors dominated by same gender peers, unless institutional efforts are made to make them more welcoming for a more gender diverse student population (Tellhed, Bäckström, and Björklund 2017).

More recently, and possibly more radically, GoldieBlox has been criticized for being an excuse to sell an idea of fun and playfulness with happy images of girls that “can have it all”: both a career in STEM, and femininity (Blosser 2021). This link between consumerism, femininity and empowerment appears to be confirmed by GoldieBlox Inc.’s attempt to reframe girlishness through the promotion of their first products in the 2010 line (Lippman 2021). By using a combination of STEM and “elements of coolness” (Santo 2021, 186), GoldieBlox contributed to re-shaping STEM through a performative dimension strongly linked to fashion, while keeping the tension with the “lifestyle branding wave”, where one is eager to buy a product they identify with.

At any rate, and despite growing institutional efforts to tackle this imbalance, the under-representation of women in STEM still remains a problem. Of the studies addressing this topic, the majority argue for psychological and social interventions to fill the gender gap (Liben and Coyle 2014; Kim, Sinatra, and Seyranian 2018). Some research has also looked into the role of language in shaping professional identities when growing up (Rhodes *et al.* 2019). However, the use of language as a means to attract, involve, and include women and girls in STEM is an issue that needs to be further explored.

### 3. MATERIALS AND METHODS

In this section, I report on the materials and methods adopted in this case study. As the aim of this work is to explore how the promotional language of toys contributes to creating a sense of belonging in young girls potentially interested in STEM, I considered all the descriptive parts of toys and shows advertised on the GoldieBlox Inc. official website<sup>6</sup>. Toys refer to those products that users can actually buy from the website, while shows are free of charge and are interactive activities addressed specifically to children and to educators and caretakers.

Both products and services are directly available from the navigation bar at the top of the homepage. More specifically, through “Toys”, users can find “Goldieblox exclusive”, with their specific product brands, as well as their recommended “STEM Toys” divided per age (e.g., “STEM toys age 0-2”), which then lead to either the website dedicated to the items promoted (i.e., specific STEM toys that are not GoldieBlox-branded, such as “baby’s first blocks”), or to Amazon. Both dedicated websites and Amazon were discarded as not GoldieBlox-branded. Under “Shows”, users find various interactive STEM-based activities and videos with a brief promotional sentence and an image. These shows range from cartoons and stop-motion videos with fictional characters (e.g., “Eggventures”, “Goldie + friends”, and “Toy Hackers”), to interviews, series, and explanatory STEM videos which involve real girls, influencers, engineers, and peer-aged children (e.g., “Camp GoldieBlox”, “Code Along”, “Curiosity Kitchen”, “Draw her life”, “Fast-forward girls”, “Hack along”, and “Robot mash-up”).

The website is targeted at educators, parents, and children; users can find technical descriptions of the promoted product, as well as videos and shows that children can watch by themselves. In addition to these materials, I also considered the “Gamify your Chemistry Classroom with Maker High Resources”, available directly from the Homepage and specifically addressed to teachers and educators in STEM. For the sake of this study, I took into account the descriptive part of each product promoted on the website.

Taken in their entirety, and by virtue of their overarching commercial framing, the array of materials described above contribute to creating a community of consumption revolving around the GoldieBlox product and its attributes. The discursive construction of such a community

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<sup>6</sup> Official website available at: <https://goldieblox.com/>.

of consumption ultimately built on the promotion of non-conventional girl characterization involves a complex interplay of participants engaging in actions that take place both in the real world and in the fictional world of the shows or the evoked one in which toy descriptions are embedded. Within this scenario, multiple layers of signification intersect and interact in a manner that is best described as dialogic, i.e. characterized by mutual interdependencies whose interplay gives rise to a multifaceted, and often ambiguous, girl identity. To explore this complex architecture and its interrelated aspects, a suitable model of analysis is needed capable of capturing the interdependent variables involved. This was identified in Bondi's (2018) model of dialogicity (*Fig. 1*), and more specifically in the Participants and Action component of the model.

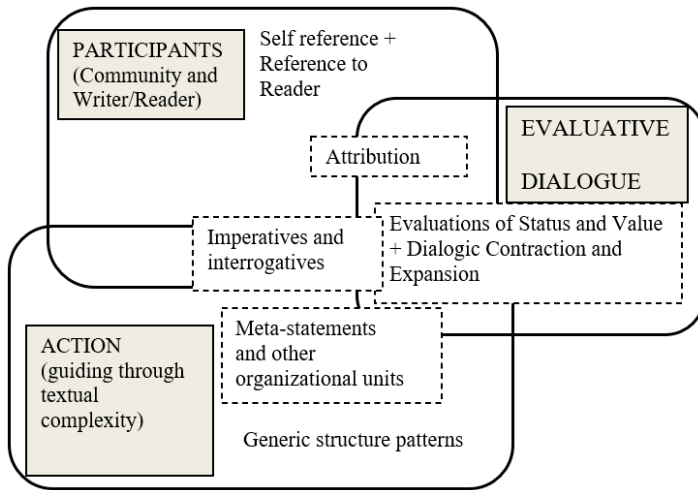


Figure 1. – Dialogicity model (Bondi 2018).

This model suggests a framework to unpack the ongoing virtual dialogue that occurs in written texts and is articulated on three intertwined layers, as can be seen from the three boxes in *Figure 1*. The construction of the identity of girls in STEM can be described as a multi-layered dialogic game involving the three constituent components of Participants (both explicitly addressed/featured, implied or envisaged, and spontaneously aggregating around the products), Action (as represented in the action games), and Evaluative Dialogue (in which Participants are engaged).

More specifically, the participant-oriented perspective allows to explore both the dialogue within the community revolving around GoldieBlox, and the interpersonal engagement discursively constructed in the promotional materials. Within the creation of this specific community, I therefore looked at how users/buyers/children/educators are addressed by the company and how they are included and targeted in the promotion and description of the products.

As for the Action perspective, this has to do with both the visual and verbal organization of a text as well as specific meta-discursive features and segments which guide the reader through it. With reference to the description of toy products and to the way participants are guided through the text, the analysis investigates how the company interacts with their audience. Among the strategies analysed are imperative forms, questions, and the use of the second-person pronoun *you* used to involve the addressee.

Finally, with reference to the Evaluation component of the model, its relevance to the analysis of ultimately promotional materials is probably self-evident. I argue that it plays an important role in engaging with the audience, and that it involves not only attitudinal, but also epistemic aspects of claims and arguments. This is strongly entangled with the participants' layer and with how the target (e.g., *girls, engineers, kids...*) is addressed; as a result, the Evaluation level of the analysis extends beyond product evaluation to include participant characterization, and involves an investigation of the adjectives used to qualify them.

#### 4. RESULTS

Results emerging from the qualitative analysis of the various levels of dialogicity (participants, action, and engagement) show how the company manages to build a STEM identity and a sense of belonging in young girls by directly engaging with them and making them feel empowered. By looking in detail at the layers involved in the construction of this specific consumption-community, it can be seen that the company includes their target audience by using both a direct and a colloquial approach. Moreover, through the description of the products we get a sense of how empowerment is constructed and reinforced by the use of specific positive validating adjectives referring to young girls and by certain action verbs.

### *Engaging with the audience*

In addressing the audience, it can be noticed that, when targeting adults, GoldieBlox Inc. caters to both teachers and educators by highlighting the empowerment and independence in STEM that children will achieve through their products (example 1), as well as on their own. The use of *gamify* in the imperative form (example 2) functions as an encouragement to teachers to make their lessons more interesting by using their sources.

- (1) *Your students will navigate* their way through multiple rooms, each with their own unique and *exciting gameplay mechanics* designed to *support, encourage, and immerse students into Chemistry*.
- (2) *Gamify your* Chemistry Classroom with Maker High Resources.

Children are also directly addressed through questions and imperative forms (example 3), creating direct engagement, inclusion, and dialogue. While the use of the questions and imperatives is not *per se* an innovative or groundbreaking marketing strategy, the way the company chooses to specifically address children in the description of their product is quite interesting: young girls are given the power to choose whether to actively engage in an activity.

- (3) *Will Goldie and her friends be able to get out of this real mess? Find out* in the first-ever GoldieBlox cartoon!

Moreover, the way the company promotes their products varies according to the addressee. With teachers and educators, the focus is of course on learning and teaching, while with children they seem to stimulate their curiosity by creating a sort of narrative and promoting further story-telling.

The names of the shows (section 3) also present some patterns in terms of involvement of the young audience. On the one hand, for instance, “Hack along”, “Code Along”, and “Draw her life” are all in the imperative form, which increases the level of engagement with the audience (Ravelli 2006). The semantic choice of the verbs is also significant as they all require some action (*code, draw, hack*). Interestingly, the same syntactic construction is also used by Lego to advertise some of their products (e.g., “Pick your brick” or “make your own minifigure”), creating a link with the emblematic toy for (future) engineers. However, *hack* and *code*, GoldieBlox’s verbs of choice, are more explicitly related to the sphere of engineering and informatics. This confirms the idea that what

GoldieBlox is trying to sell is a useful and “geeky” product, which is perfect for girls who dream of being an engineer or are open at the idea of being one. Moreover, the creative use of the preposition *along* following the verbs *hack* and *code* reminds one of “come along”, as in “to join”, and of “clap along” and “sing along”. The positive connotations that especially the last two prepositional verbs intrinsically carry with them are also transferred in the two word-puns “hack along” and “code along”, conveying a sense of conviviality, belonging, and inclusivity, while reinforcing the aforementioned function of the imperative form. This is further reinforced by the polylogues that appear in the featured episode description of these shows (example 4).

- (4) *Learn how dancer Nicole Laeno coded her own arcade game with Microsoft MakeCode! In honor of Computer Science Education week, we teamed up with Microsoft MakeCode and Nicole Laeno to code a really cool and fun arcade game that features all of Nicole’s favorite things like boba, her dog Sadie, ramen and more. And guess what? You get to see how she made it!*

As visible from example (4), the use of the pronoun *we*, referring to the GoldieBlox team, initiates a virtual dialogue with young girls who are invited to learn about coding. Once again, the use of the imperative and of questions reinforces the sense of inclusion of the reader. Polyphony is evoked through mentioning other potential voices of engagement, specifically those of Nicole Laeno and of the Microsoft MakeCode team, with which children will engage by watching the video. Additionally, the choice of dialoguing with Nicole Laeno, who is both a dancer and coder, might encourage little girls to identify with a positive female figure who is both engaged in the arts and in science.

Involvement and engagement are also achieved through the use of the second person pronoun *you* which creates an actual dialogue with the potential user or buyer. It is usually followed by modal verbs such as *can*, which highlights potential achievements and independence that children might gain (e.g., *you can hack along / With it, you can invent*), and *will* (e.g., *you will learn*), conveying the certainty of their educational achievement. This same sense of empowerment and independence is also achieved through the use of *get to*, meaning that the child has an opportunity to create something unique (example 5) and “for her own space” (example 6). It is also worth mentioning that in example (5), the Unicorn, which is typically a non-gendered creature has been addressed with the female pronoun *her*, giving visibility and space to female characters.

- (5) This project inspires creativity as *you get to customize* the look and feel of your unicorn, and don't forget to name her! You will learn how LED lights change color and why they're eco-friendly while uncovering what makes a circuit work!
- (6) It is great *if you enjoy art and want to create something fun and colorful for your space*.

Moreover, the use of an informal register and of colloquial features (e.g., *casual, vlog-style "how to" format, trendy projects* – example 7) contributes to reinforcing a specific in-group language which aims to mimic the one used by young girls.

- (7) A great kit for anyone who is looking for *cool, creative projects*, but also the perfect kit to share with friends!

This strategy effectively reduces the distance between the company and the user, creating a more horizontal dialogue giving young girls an idea of chatting with a peer or friend, hence fostering a sense of belonging. Additionally, the use of colloquial sources that are group-specific might contribute to the creation of a sense of belonging and involvement (Ravelli 2006, 86) of, in this case, young girls. Such features might also help making STEM more “digestible” and approachable. The result is an informal style that conveys a sense of “coolness” combined with the “seriousness” of the potential job career that the company is addressing, a promotional strategy in line with an emerging trend promoting smart as the new cool (Santo 2021).

### *Empowerment*

By exploring the construction of the sense of empowerment of young girls in more detail, one aspect that emerges is the way GoldieBlox Inc. uses specific positive-validating adjectives to describe both the activities (e.g., *girl-powered DIY show*) and the characters (e.g., *extraordinary girls and women, the first girl engineer and coder characters in children's toys*) that are specifically girl-oriented and girl-centered (example 8). This reinforces the sense of belonging of young girls who might see themselves represented in a specific in-group. Diversity is also addressed, but remains confined to female characters, whose ethnic backgrounds, ages, jobs and interests are referred to (e.g., *diverse, young female influencers... diverse, badass female STEM role models*).



The sense of empowerment is also achieved by the use of verbs related to the area of informatics and problem solving (e.g., *engineer*, *code*, *hack*, *tackle* – example 8). This is in line with Rhodes *et al.* (2019) study, which showed that action verbs can be effective in encouraging girls to pursue a career in STEM.

- (8) See what happens as the *Hackers* (Goldie Blox, Ruby Rails, Valentina Voltz, and Li Gravity) use creativity, inventiveness, and everyday household objects *to engineer their way through weekly missions*.

The use of *DIY* (*do it yourself* – example 9) is also interesting as it emphasizes the empowerment of girls who need no help in succeeding in something difficult while conveying a laid-back and colloquial tone encouraging reader involvement.

- (9) This *DIY activity is the perfect gift for the girl that wants to learn about STEM*.

Products names are also implicitly revealing in terms of the values of empowerment and independence that the company is trying to convey. For instance, *GoldieBlox* is already a pun itself as it draws from the anthropomorphic fairy tale of Goldilocks, where the main character is named after her blond (*goldy*) curly hair (*locks*). Similarly, GoldieBlox is still blond, but rather than being defined by her aesthetics, she is presented by what she “plays” with, namely blocks (*blox*), as in building and bricks, highlighting both her femininity and her engineering skills. On the other hand, some of the shows’ names, such as “Fast-forward girls”, “Goldie+ friends”, and “toy hackers”, are explicitly actor-centered. The term *fast-forward* preceding *girls* conveys the idea of smartness and of someone being quick at learning and solving problems, while *hackers* (from *hack*), is once more a clear reference to technology. Girls are addressed as smart, intelligent and capable.

### *Building and promoting a STEM identity*

By empowering young girls and directly engaging with them, Goldieblox plays an important role in shaping their STEM identity, which is subtly promoted as something that might be achieved effortlessly by completing young girls’ interests and passions – usually art-connected. This link between engineering and creativity can be seen in example (10), which shows how a stereotypically female activity like sewing can become

an opportunity to learn more about STEM, overcoming the contrast between what is usually addressed as “girly” and something that would be categorized as “serious” or “difficult”.

- (10) This DIY activity is the perfect gift for the *girl that wants to learn about STEM while sewing a new beautiful light up pillow.*

What GoldieBlox Inc. seems to want to be selling is more than just a toy. It is, instead, a skill-package for girls who can have it all: be creative and smart while playing and acquiring skills useful for their future jobs (example 11).

- (11) After all, today’s kids will have jobs that don’t even exist yet. But we do know that *STEM skills will play a huge role.* That’s why we’re here, now, *to help them prepare.*

This coexistence of arts and STEM is also achieved through the brief description reported next to the name of accredited female figures working in STEM who take part in their videos and collaborate with GoldieBlox (example 12), showing both their artistic and scientific side.

- (12) Kaitlin Hova, *Violinist & Software Engineer*

The presence of actual female figures gives visibility and representation to women in science while contributing to the development of a “STEM identity” (Kim, Sinatra, and Seyranian 2018) in young girls. However, despite the language of possibility adopted, it seems that in order to be successful a girl needs to “have it all”: both STEM competences, and artistic skills and inclinations.

## 5. DISCUSSIONS AND CONCLUSION

The linguistic analysis of this case study has shown how GoldieBlox engages in an active dialogue with their consumers, specifically, female children. The close reading of the services and products’ description has revealed that young girls are involved in engineering activities through questions, imperative forms, and story-telling. By engaging directly with children on technical topics, GoldieBlox Inc. is not only giving them visibility, but is also contributing to conveying a sense of empowerment. The creative use of *code along* and *hack along* might encourage young girls to get involved in STEM. By being exposed to female role-models

who are able to combine both sciences and the arts, they are encouraged to develop a sense of belonging. In terms of participants, young girls are mostly positively addressed through the detailed description of the activities, meaning that by attaching a value to a certain product (e.g., *empowering*), the same value will by ‘transitivity’ also be related to the girl using it. Female characters that are present in the shows are also qualified by positive adjectives, conveying a positive image of inclusivity of the company.

Despite the criticisms received, GoldieBlox Inc. seems to have been making a sincere effort to create a ‘space’ or, at least, a virtual space, of belonging for young girls in STEM. The use of positive evaluative language mostly directed at young girls seems to have made the corporation take a step back from the consumeristic vortex. Even in times of ideological crisis, positive thinking plays an important role by masking the need to rethink the nature of social inequalities and trying to find alternatives to the way capitalism has been developing (Salecl 2011, 31). As a matter of fact, GoldieBlox Inc. seems to be caught in this tension between their commercial promotion and their social commitment of including and involving more girls in STEM. Of course, this case study only focuses on the products’ descriptions where one is expected to find promotional language; a deeper analysis of all webpages might certainly help expanding this aspect.

The discussion so far is complex and poses challenges for policy makers. Companies sell their products by targeting categories through advertisements. The analysis of the promotional features adopted in GoldieBlox’ website shows how the company uses marketing strategies to address their audience, by highlighting not only the excellence of the product, but also the empowerment that these will give to girls in STEM. Furthermore, the more recent introduction of “Shows” on the GoldieBlox website highlights a shift toward the communication of a product and concept, engaging directly with the audience, in this case, children. The analysis of the Shows’ content is certainly worthy of investigation to further explore how the dialogue with their target unravels.

To conclude, GoldieBlox Inc.’s use of language when promoting their products while simultaneously including and encouraging girls to pursue STEM certainly seems to be a step towards Sterling’s self-ascribed “social mission”. By engaging in a horizontal dialogue with young girls, GoldieBlox Inc. encourages them to take up take courage and feel empowered by doing and hacking. Once more, it is important to remind the reader that this study only focuses on the promotional aspect

of this website. It would be certainly interesting to compare these results with other toys' companies who specifically address the inclusion of girls in STEM to see whether this dialogicity is perpetuated. Future research could also integrate this study with other "voices" present in the Goldie-Blox website, such as those of peers, engineers, and musicians directly speaking to users through videos, and explore the polyphonies in something that stands between promotional discourse and a social mission.

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