



OPEN ACCESS

# Themes in e-liquid concept names as a marketing tactic: evidence from Premarket Tobacco Product Applications in the USA

Linnea Laestadius ,<sup>1</sup> Julia Vassey ,<sup>2</sup> Minji Kim ,<sup>3</sup> Jenny Ozga ,<sup>4</sup> Dongmei Li ,<sup>5</sup> Cassandra Stanton ,<sup>4</sup> Heather Wipfli,<sup>2</sup> Jennifer B Unger <sup>2</sup>

<sup>1</sup>Zilber School of Public Health, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin, USA

<sup>2</sup>Department of Population and Public Health Sciences, University of Southern California, Los Angeles, California, USA

<sup>3</sup>Department of Health Promotion, Education, and Behavior, University of South Carolina, Columbia, South Carolina, USA

<sup>4</sup>Behavioral Health and Health Policy Practice, Westat, Inc, Rockville, Maryland, USA

<sup>5</sup>Department of Clinical and Translational Research, University of Rochester Medical Center, Rochester, New York, USA

## Correspondence to

Dr Linnea Laestadius, Zilber School of Public Health, University of Wisconsin-Milwaukee, Milwaukee, WI 53211, USA; llaestad@uwm.edu

Received 20 July 2022

Accepted 16 September 2022



© Author(s) (or their employer(s)) 2023. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

**To cite:** Laestadius L, Vassey J, Kim M, *et al.* *Tob Control* Epub ahead of print: [please include Day Month Year]. doi:10.1136/tc-2022-057657

Concept naming of flavours is popular among e-liquid manufacturers.<sup>1-3</sup> Rather than explicitly stating a taste or smell, these names convey aesthetics or sensations (eg, unicorn, frostbite, roadhouse), as well as positive health and lifestyle experiences (eg, relaxed, blissful).<sup>4</sup> Concept names are frequently accompanied by colourful packaging and bottle designs that reinforce their connotations.<sup>1,2</sup> While concept naming is not novel, its impact on youth appeal, as distinct from the flavours themselves, is understudied.<sup>5</sup>

Concept naming warrants additional attention following US regulatory developments limiting characterising flavours in e-liquids. Several states and localities (eg, New York, Massachusetts, San Francisco) prohibited the sale of non-tobacco-flavoured electronic cigarette (e-cigarette) and e-liquid products as early as 2020,<sup>6</sup> and as of April 2022, the US Food and Drug Administration (FDA) issued Premarket Tobacco Product Marketing Granted Orders only for tobacco-flavoured e-cigarette and e-liquid products, denying many flavoured products.<sup>7</sup> Several countries, including China and Denmark, have announced similar restrictions.<sup>8</sup> Prior research suggests that tobacco companies attempt to bypass flavour restrictions through concept names that obscure flavour profiles.<sup>9,10</sup> For example, BIDI Vapor renamed its flavoured disposable e-cigarettes with concept names (eg, 'Berry Blast' became 'Solar').<sup>11</sup> Recent work on flavoured cigarette perceptions in Mexico suggests that concept names implying fruity or cool flavours increase product interest among youth relative to packs without flavour names.<sup>12</sup> Further, as extrinsic information can shape taste perceptions, concept names could heighten youth appeal even for tobacco-flavoured e-liquids.<sup>13,14</sup>

The e-liquid flavour wheel established by Krüsemann *et al*<sup>15</sup> has been a valuable tool as it established a shared schema for classifying flavours and flavour-focused names (eg, chocolate is categorised as 'other sweets' rather than 'candy'). A similar tool could be developed for concept names. A typology of common themes could provide insight into industry naming conventions so that they can be tracked over time and potentially regulated. It could also help to facilitate research on whether youth perceive concept names as associated with certain flavour profiles. For example, unicorn-themed e-liquid names appear to denote creamy flavours<sup>1</sup>; still, it is unclear whether other concept

name themes represent certain flavours or flavour blends. The lists of product applications received through the Premarket Tobacco Product Applications pathway represent perhaps the largest publicly available aggregation of e-liquid product names in the USA. These documents reveal a breadth of concept names, submitted as characterising flavours, that cluster into larger themes.

Illustrated in [table 1](#), major themes in concept names include physical and emotional experiences, as well as identities and status. This aligns with the cigarette industry's tactic of targeting youth by positioning smoking as a new experience and act of individual self-expression.<sup>16</sup> Names related to nature, science, mythology and popular culture were also prominent. Many concept names convey multiple meanings simultaneously. Name interpretation is also likely to vary by personal and cultural context, and users may infer symbolic, connotative meanings to names in addition to literal meanings (eg, 'Al Capone' may be seen as a generic personal name or suggest violence and rebellion, status and money, and/or masculinity, depending on the knowledge, culture, and perspective of the user).<sup>17,18</sup> [Table 1](#) is not exhaustive in this regard and primarily captures literal meanings and the cultural context of US-based authors. Our typology reflects up-to-date industry trends in the USA as of the early 2020s but is unlikely to fully capture naming conventions and interpretations in other countries and other times, necessitating typologies that are time and culture appropriate.

Continuation of concept naming practices by industry, either to obscure non-tobacco flavours or to promote different kinds of tobacco flavouring, may undermine efforts to reduce youth vaping. Research is needed to expand on this initial typology of e-liquid concept names. The possibility of developing a typology applicable across tobacco products should also be explored considering that FDA's recently proposed rules to prohibit menthol cigarettes and flavoured cigars may fuel industry naming tactics.<sup>19</sup> Future research could assist in monitoring concept names used as marketing tactics, impacts on youth appeal and use of tobacco-flavoured products allowed to remain on the market.

**Contributors** All authors assisted with study development and manuscript content. LL, JV, MK, JO and DL reviewed PMTA lists. LL prepared the full draft, with the other authors assisting with edits.

**Table 1** E-liquid concept name themes and subthemes found among Premarket Tobacco Product Applications

Overarching theme	Subtheme	Examples of names submitted as characterising flavours
Physical and emotional experiences	Colours	Rainbow, Blue Voltage, Yellow, Red Frost
	Drinking/drugs/altered mental states	Boozehound, Intoxicate, Cheers, Blasted
	Ice and coolness	Arctic Rush, Frostbite, Euphoria Extreme Ice, Polar Ice Cap
	Party/music/sports	Party Fun, Game Fuel, Tasty Tunes Hip Hop, Home Run
	Positive states	Blissful, Clarity, Relaxed, Luscious Nirvana
	Rebellion/disruption	Derailed, Apocalyptic Infected, Killer, Al Capone
	Sex and romance	Love Potion, Pillow Talk, Climax, Angel Kisses
Identities and status	Jobs	Illustrator, Cowboy, El Capitan, Officer
	Money/royalty	King, Cryptocurrency, Majestic, Bank Merger
	US patriotism/politics	America, All American, Patriotic, 2nd Amendment
	Personal identities	Southern Belle, Regular Joe, Wise Guy, Flower Child
	Personal names	Alice, Angelina, Carmen, Irving
Nature, geography and science	Animals	Nerdy Tiger, Gorilla Juice, Gator Slush, Acid Fish
	Locations	Georgia Nights, Cuban Sunset, Jungle Love, City Scapes San Francisco
	Space/technology	Asteroid Belt, Sputnik, Plasma, Distinctive Galileo
	Weather/natural phenomena	Twister, Low Tide, Shaded Sunset, Cyclone
Mythology and legend	Unicorn Attitude, Dragon Whisperer, Fairy Blood, Elf Magic, Camelot King Arthur	
Popular culture/media	Adams Family, Jedi, Dead Elvis, Aquaman, David Hasseltoff	

Source: US Food and Drug Administration, Products with applications received through the Premarket Tobacco Product Applications pathway (<https://www.fda.gov/tobacco-products/market-and-distribute-tobacco-product/deemed-new-tobacco-product-applications-lists#list2of20deemed>).

**Funding** This work is a cross-institution collaborative project from the Marketing Influences Special Interest Group supported, in part, by U54-DA046060-01 from the Center for Coordination of Analytics, Science, Enhancement and Logistics (CASEL) in Tobacco Regulatory Science (National Institute of Drug Abuse (NIDA) and the Food and Drug Administration's Center for Tobacco Products (FDA CTP)). Research reported in this publication was supported in part by U54CA180905 from the National Cancer Institute (NCI) and the FDA CTP-funded Tobacco Centers of Regulatory Science (TCORS) at the University of Southern California, U54CA228110 from the WNY Center for Research on Flavored Tobacco Products (CRoFT) under cooperative agreement, and the University of Rochester CTSa award UL1 TR002001 from the National Center for Advancing Translational Sciences of the National Institutes of Health.

**Disclaimer** The content is solely the responsibility of the authors and does not necessarily represent the official views of the funders or affiliated institutions.

**Competing interests** None declared.

**Patient consent for publication** Not required.

**Ethics approval** Not applicable.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

#### ORCID iDs

Linnea Laestadius <http://orcid.org/0000-0003-3272-9317>  
 Julia Vassey <http://orcid.org/0000-0003-3002-2000>  
 Minji Kim <http://orcid.org/0000-0002-7715-6826>  
 Jenny Ozga <http://orcid.org/0000-0003-2543-561X>  
 Dongmei Li <http://orcid.org/0000-0001-9140-2483>  
 Cassandra Stanton <http://orcid.org/0000-0001-5329-6261>  
 Jennifer B Unger <http://orcid.org/0000-0001-9064-6603>

#### REFERENCES

- Jackler RK, Ramamurthi D. Unicorns cartoons: marketing sweet and creamy e-juice to youth. *Tob Control* 2017;26:471–5.
- Laestadius LI, Wahl MM, Pokhrel P, et al. From apple to Werewolf: a content analysis of marketing for e-liquids on Instagram. *Addict Behav* 2019;91:119–27.
- Soule EK, Sakuma K-LK, Palafox S, et al. Content analysis of Internet marketing strategies used to promote flavored electronic cigarettes. *Addict Behav* 2019;91:128–35.
- Erinoso O, Clegg Smith K, Iacobelli M, et al. Global review of tobacco product flavour policies. *Tob Control* 2021;30:373–9.
- Jeong M, Wackowski OA, Schroth KRJ, et al. Influence of cigarillo packaging characteristics on young adults' perceptions and intentions: findings from three online experiments. *Tob Control* 2021:tobaccocontrol-2021-056785.
- Campaign for Tobacco Free Kids. States and localities that have restricted the sale of flavored tobacco products. April 19, 2022. Available: <https://www.tobaccofreekids.org/assets/factsheets/0398.pdf> [Accessed 13 Jun 2022].
- U.S. Food and Drug Administration. Marketing denial orders. April 25, 2022. Available: <https://www.fda.gov/tobacco-products/market-and-distribute-tobacco-product/tobacco-products-marketing-orders#Marketing%20Denial> [Accessed 13 Jun 2022].
- Physicians for a Smoke Free Canada. Update on e-liquid flavour restrictions. August 15, 2022. Available: <https://smoke-free.ca/update-on-e-liquid-flavour-restrictions/> [Accessed 8 September 2022].
- Farley SM, Schroth KR, Grimshaw V, et al. Flavour chemicals in a sample of non-cigarette tobacco products without explicit flavour names sold in New York City in 2015. *Tob Control* 2018;27:170–6.
- Viola AS, Giovenco DP, Miller Lo EJ, et al. A cigar by any other name would taste as sweet. *Tob Control* 2016;25:605–6.
- Kostygina G, Kreslake JM, Borowiecki M, et al. Industry tactics in anticipation of strengthened regulation: bidi vapor unveils non-characterising bidi stick flavours on digital media platforms. *Tob Control* 2021:tobaccocontrol-2021-056502.
- Brown JL, Grilo G, Cohen JE, et al. Colours, capsules and concept flavour names on cigarette packs appeal to youth in Mexico. *Tob Control* 2022:tobaccocontrol-2021-056905.
- Okamoto M, Dan I. Extrinsic information influences taste and flavor perception: a review from psychological and neuroimaging perspectives. *Semin Cell Dev Biol* 2013;24:247–55.
- Skaczkowski G, Durkin S, Kashima Y, et al. Influence of premium vs masked cigarette brand names on the experienced taste of a cigarette after tobacco plain packaging in Australia: an experimental study. *BMC Public Health* 2018;18:295.
- Krüseemann E, Boesveldt S, de GK. An e-liquid flavor wheel: a shared vocabulary based on systematically reviewing e-liquid flavor classifications in literature. *Nicotine & Tobacco Research* 2018:1310–9.
- Ling PM, Glantz SA. Why and how the tobacco industry sells cigarettes to young adults: evidence from industry documents. *Am J Public Health* 2002;92:908–16.
- Aaker JL. Dimensions of brand personality. *J Marketing Res* 1997;34:347–56.
- Anderson SJ, Dewhirst T, Ling PM. Every document and picture tells a story: using internal corporate document reviews, semiotics, and content analysis to assess tobacco advertising. *Tob Control* 2006;15:254–61.
- U.S. Food and Drug Administration. FDA proposes rules prohibiting menthol cigarettes and flavored cigars to prevent youth initiation, significantly reduce tobacco-related disease and death. Available: <https://www.fda.gov/news-events/press-announcements/fda-proposes-rules-prohibiting-menthol-cigarettes-and-flavored-cigars-prevent-youth-initiation> [Accessed 13 Jun 2022].