

Bitter, expensive and almost undrinkable – why is America’s craft beer getting so extreme?

No accounting for taste

IT IS dawn on a crisp Friday morning in February 2010. On the sidewalk of a suburban street in Santa Rosa, California, a line of hooded young men shuffles towards a low-built blue building. A soup kitchen, you might think, or a drug rehabilitation centre.

But the hoodies aren’t harbouring the local down-and-outs. In the queue are hip 20 and 30-something young professionals from as far away as New York and even Europe. They are lining up for the fifth annual release of “Pliny the Younger”, an Indian pale ale (IPA) produced by Santa Rosa’s Russian River microbrewery. Last year’s batch sold out in a week. This year, all 40 kegs were gone within 8 hours, and the beer briefly became the highest-rated brew on the Beer Advocate website, a forum for lovers of craft beer.

Each to their own, you might say. What adds intrigue to the mix is that to most palates Pliny the Younger is really rather disagreeable. Its sky-high content of hops, the herb that imparts bitterness and aroma to a beer, is married to a sickly maltiness and an intense punch of alcohol that seem designed to make you turn up your nose at the first sip.

This is not an isolated case, either. While the likes of Budweiser, Miller and Coors continue to make their mass-market lagers lighter and blander, America’s craft beer industry is busily going the other way, cramming as much alcohol and hoppy bitterness into its beers as will fit. US brews with names such as Hop Stoopid, Hop Devil, Hopsickle, Hop Wallop, HopSlam and Hop Crisis proudly proclaim the bitter herb, and there are signs that real ale in the UK and elsewhere is also becoming more extreme. What is going on?

Humans have some idiosyncratic tastes: crab brains, fish gonads and squeezable cheese are all delicacies in various parts of the world.

Our preference for sweet and abhorrence of bitter is universal, however. Evolutionarily,

that makes sense. Many bitter substances are at best nutritionally useless and at worst downright toxic, so we have evolved ways to protect ourselves. Placing a bitter foodstuff on the tongue will trigger a reflex reaction that encourages us to spit it out, or increase saliva flow to wash the taste away. A harmless bitter substance inserted directly into a person’s stomach will generally induce nausea.

In that sense, drinking beer at all – or having a coffee, or eating hot chili peppers or face-scrunchingly sour citrus fruits – is a perverse activity. We don’t intentionally inhale faeces or stab ourselves in the arm, so why do we accept and even come to enjoy naturally unpleasant tastes? It is a bit of a mystery. In fact, says psychologist Paul Rozin of the University of Pennsylvania in Philadelphia, it not at all clear how over time we can acquire a taste for anything we didn’t previously like.

With beer, it clearly helps that we like to get a little drunk. Hoppier, stronger-tasting beers tend to be backed by a higher alcohol content; Pliny the Younger’s, at 11 per cent by volume, is akin to that of a fine wine. The search for a better buzz may be why we can tolerate intense aromas and flavours we would otherwise find obnoxious. Something similar would account for how the caffeine kick helps us learn to love the bitter taste of coffee or tea – often masked by copious quantities of sugar in the early stages – or how the nicotine hit leads us to accept acrid tobacco smoke.

Beer also benefits from its association with another type of molecule we animals crave: carbohydrates. If rodents are fed two flavours, one of which is paired with carbohydrates, they quickly learn to prefer the paired flavour, says Marcia Pelchat of the Monell Chemical Senses Center in Philadelphia, Pennsylvania – even if the carbohydrates are injected directly into the gut during the taste test (*Physiology and Behavior*, vol 74, p 481 and p 495). Together





with her colleague Gina Carfagno, Pelchat has recently shown that humans with no previous preference can be made to favour a particular flavour of iced tea if they gulp it with a pill that releases carbohydrates in the stomach.

Bitter, hoppy beers often have a higher content of sugar-releasing malts, making for a more intense carbohydrate fix. So the push for ever more bitter beers might just be a case of what psychologists call “mere exposure” – repeated consumption, particularly if associated with pleasurable sensations, being enough to make us cope with unpleasant tastes. Hops are not just about bitterness, either: they impart other aromas that many find enjoyable, and variously describe as floral, piney or citrusy. Some even say the scent is reminiscent of marijuana – which perhaps is not surprising as both herbs are members of the Cannabaceae family.

But Rozin thinks there is something more deep-seated going on. He points out that evolution has taught us to approach novel taste sensations with a combination of

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intrigue and fear. An unfamiliar berry, say, is potentially a new source of nutrition, but it could also be deadly. If we discover through eating it that, despite its warning bitterness, it is safe and could therefore potentially provide nourishment, it makes sense for fear to dissolve and intrigue to take over.

Rozin developed this idea of “benign masochism” when trying to explain how humans can come to like the burn of chili peppers – particularly, the peculiar fact that when people describe their ideal level of hotness, it is typically just below the one they can’t stand (*Motivation and Emotion*, vol 4, p 77). “It’s a form of thrill-seeking,” he says. “The more your body is sending the signal of danger, the more pleasure you get out of not actually being in danger.”

There is some evidence that such a counter-intuitive response is hard-wired in our brains, says Kent Berridge, a neuroscientist at the University of Michigan in Ann Arbor. The brain secretes opiate chemicals in response to painful experiences, including tastes, resulting in a perverse response of pleasure (*Science*, vol 293, p 311). “There’s some overlap between the pleasure-generating systems >

and pain-dampening systems,” says Berridge. “And it becomes more and more active with repeated exposure. It’s conceivable that for bitterness the same systems are recruited.”

So are those young men queuing in the Santa Rosa dawn for their extreme brew just expressing atavistic biological urges? Perhaps. But the speed with which extreme beers have crowded into the drinks market suggests other, shorter-term pressures are also at work.

Vinnie Cilurzo, head brewer at Russian River, knows first-hand how fast things have moved. In the mid-1990s, while brewing at his first microbrewery, he was the first to brew a double IPA, a beer with double the hops of the already hoppy American IPA style and considerably more alcohol. Few customers were impressed. “I’m pretty sure we drank most of it ourselves,” he says.

Now, though, the double IPA is one of the fastest-growing styles of beer, says Joe Tucker, founder of RateBeer.com. Beers once considered daringly hoppy, such as Sierra Nevada Pale Ale and Anchor Steam Liberty Ale, two California stalwarts, are now seen by connoisseurs as easy-drinking “session” beers or “gateway” drinks to ease the uninitiated towards bolder brews.

An explanation might lie in those words “connoisseur” and “uninitiated”. Beer is not all about nutrition and chemical pleasure, says Zakary Tormala, associate professor of marketing at the Stanford Graduate School of Business in California; as the ultimate social drink, it can be a significant medium for self-expression and social acceptance. There is a prestige factor in liking something that most people don’t, and perhaps even a machismo if it is something we are not primed to like. The hip, overwhelmingly male crowd outside

Russian River suggests that it is this audience the craft beer industry has learned to play to.

It might help that craft beer high in alcohol and hoppiness tends to have a higher price tag, too. Hilke Plassman and her colleagues at the California Institute of Technology in Pasadena showed in 2007 that people believed wine from a bottle with a \$90 price tag tasted better than the same wine poured from a bottle marked \$10 – as measured not just by their rating of the wine, but also their brain activity in an fMRI scan (*Proceedings of the National Academy of Sciences*, vol 105, p 1050).

Something similar might go on with beer. “When people purchase and consume extreme beers instead of more mainstream options, they signal to others that they have means and are sophisticated,” says Tormala.

“A friend recommended an infamously sour beer with notes of barnyard, horse blanket and wet dog”

It is at this point that sociology and biology might converge, says Pelchat. Buying beer from small craft brewers has a cachet to a certain group of consumers – the type who like to avoid big corporations and support the local store instead. Those who buy locally sourced products such as artisan bread or produce from the farmers’ market are likely to consume less pre-packaged, processed food containing indulgent levels of sugar and sodium, both of which block bitter flavours. That means they become more amenable to bitterness in everything they consume. “Thirty or 40 years ago, salad was a piece of

iceberg lettuce,” says Pelchat. “Now it’s a mixture of radicchio and arugula” – two considerably more bitter leaves.

This exclusivity theory would square with the fact that, sudden and steep as the rise of extreme beer has been, it remains a minority taste. Pale, fizzy beers such as Budweiser, Miller Lite and Coors Light still dominate the US market. In the end, most of us stick with tastes we find easy to like, perhaps swayed towards the “drinkability” touted on Bud Light’s immense billboards on which virile football players cavort with buxom women.

That makes Michael Lewis, professor emeritus of brewing science at the University of California, Davis, worry that the craft beer industry might be manoeuvring itself into a dead end with its emphasis on ever more extreme minority tastes. “I tell them, don’t just make beer for the weirdos who live their life for beer, wearing T-shirts that proclaim their love for beer and spending all their time writing about beer on websites,” he says. “God bless them, but they’re a very tiny market.”

Tiny, perhaps, but infinitely pliable. Amir Bramell has been tending the bar at Russian River’s microbrewery for six years and has seen some fascinating demonstrations of the power of extreme beer. He recalls one man who came into the pub to try one of Cilurzo’s infamous sour beers – a brew variously described as containing notes of barnyard, horse blanket and wet dog in a phone booth – at the strong recommendation of a friend. “He hated it, but he came back every day to have another,” says Bramell. “It took him two weeks to really like it. By then he was hooked.” ■

Lizzie Buchen indulges in benign masochism in the brewpubs of San Francisco

Leaving a bitter taste

In bitterness and in alcohol content, the latest US craft brews go way beyond most conventional beers

