
The Hidden Sexuality of the Yawn and the Future of Chasmology

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Abstract

Chasmology is the scientific study of yawning. Though its official history started only recently, its unofficial history stretches back to antiquity. This chapter outlines the history and current state of chasmology, through textual research and analysis, and offers a vision of its future. Particular emphasis is placed upon the author's favorite theory: the hidden sexuality of the human yawn. The 'First Law of Chasmology' states that a yawn occurs: (1) if the yawner cannot do what he would like to do, or (2) if the yawner must do something that he would rather not do. The 'Second Law of Chasmology', which is a special instance of the more general First Law, states that the yawn has an erotic and even a sexual aspect. A critical mass of proof for the validity of this Second Law is derived from various sciences and disciplines, ranging from theology and (the history of) art to ethology and pharmacology. The process of evidencing the Second Law has also established chasmology as an emerging science, i.e. a science that uses the data and information of primary sciences to make a synthesis that transforms and transcends the original scope and results of the auxiliary disciplines. The Second Law allows at least two concrete predictions about future corroborations or refutations in chasmological research. **Conclusion:** Chasmology has a bright future and may yield some surprising results in the near future.

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I don't need to believe much about yawning in order to desire to yawn

Richard Swinburne [1]

Although the yawn has always aroused curiosity, it is only recently that yawning has been studied in a scientific way. Since the 1980s, more systematic research – especially physiological, psychological, ethological and pharmacological research – has cast light on the yawn. Even more recently, these combined efforts to study yawning have been given a name: chasmology. Though the name is new there were, of course, chasmologists *avant la lettre*. Hippocrates and Aristotle, Sennert and Boerhaave, Charcot and Trautmann and many others can be enlisted as honorary chasmologists. In this short chapter, I will only be able to outline the past, present and future of chasmology, and in doing this I will place special emphasis on the theory that I proposed in my dissertation [2].

Historical Trends and Currents

In the history of thinking about the yawn, one may discern certain fundamental approaches. I will summarily discuss these approaches concentrating on only three: the animistic, the psychological and the physiological.

Animistic

It is clear that the yawn was, and sometimes still is, regarded in an animistic vein: the yawn enables a demon to enter the body of the yawner or permits the soul to escape that same body. The animistic current probably spawned the near-universal taboo on yawning. This is the reason why people perform so many and such varied actions to avert the dangers of yawning, for example making the sign of the cross over the mouth. However, it is also possible that the animistic idea itself is an offshoot of another, an even more fundamental taboo. A subcategory of the animistic idea is expressed in the words of Emile Cioran [3]: ‘According to a Christian legend, the world was born when the Devil yawned.’

It would be interesting to see if theologians could make a contribution to chasmology, taking Cioran’s remark as their starting point. Another possible question to solve by theologians is whether prelapsarian man did indeed yawn (fig. 1). For as Saint Augustine said [4]: ‘[...] It was, in fact, after the sin that this lust arose.’

Physiological

Nowadays, many people associate yawning with a lack of oxygen. Generally, this deficiency is supposed to be in the brain. The oxygen-deficiency theory also comes in another version: an overabundance of carbon dioxide. Both the so-called hypoxia and hypercapnia theories remained unchallenged and were considered to be common sense for a long time. When these popular theories were finally tested by Provine et al. [5] in the 1980s, they were roundly refuted. A current physiological theory proposes that yawning may be a thermoregulatory mechanism providing compensatory cooling [6]. It remains to be seen whether this rather broad and bold hypothesis will stand up to critical scrutiny.

Psychological

At the psychological level, the yawn has been associated with boredom at least since Roman times. Boredom, however, is a very complex idea. Nevertheless, even if it is only partially connected with yawning, boredom may still be an interesting concept for chasmology. However, something more than boredom must be invoked to explain the following yawning bout: Hans Schnier is meeting his father for the first time in 3 years and for the first time ever they are having a serious conversation together; then Hans starts yawning [7]:

I suddenly had to yawn. It was rude, but I couldn’t help it, and I was fully aware of the discourtesy. [...] I was all worked up, but dead tired, and I was sorry I had to yawn at that particular moment. [...] My yawning became almost a cramp, my jaw muscles cracked.

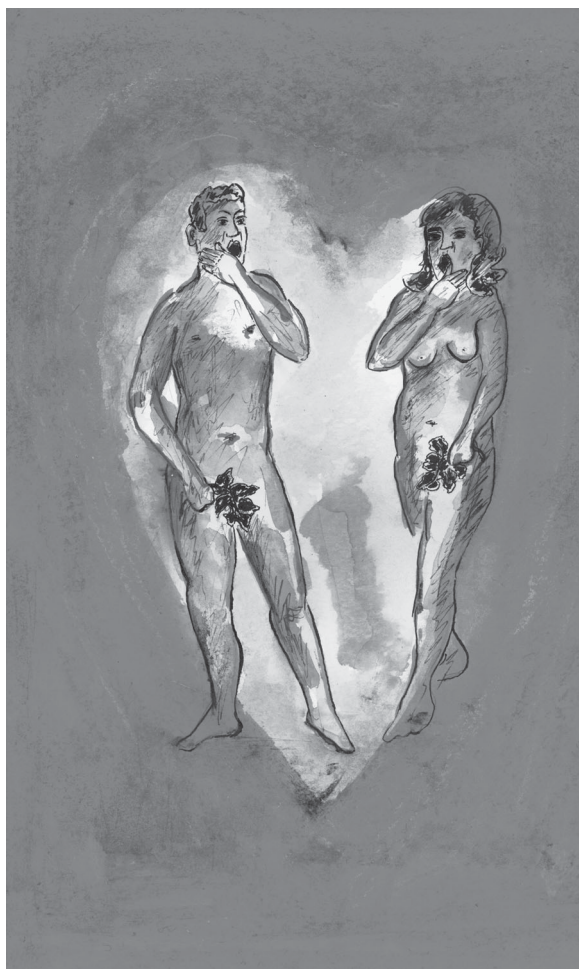


Fig. 1. Reiner Schlecker: *Yawning Adam, Yawning Eve*. 2004 (reproduced with kind permission from Reiner Schlecker).

The narrator himself – and probably the author, Heinrich Böll, too – was surprised by this inappropriate and incessant yawning in front of his father. To explain such surprising behavior, I called upon the situational description that the German physician Valentin Dumpert gave en passant in his 1921 article [8], which is best conveyed in the form of a thought experiment. Picture yourself late at night entertaining guests. Now you want to go to sleep. When there is a ‘boring’ guest who does not go home or if your companions do not let you go to bed, then you will yawn. However, as soon as the guest has left and you can go to sleep, the moment you can take off your clothes you will cease to yawn. Once you are in bed, it is quite unlikely that you will yawn again. In the morning we can observe, introspectively or in another person present, the same phenomenon: as long as you are happy to stay in bed you will not yawn. However, if you, rather unwillingly, must get up in order to start the day you may

yawn. You will do this even when you are still lying motionless in your bed. This thought experiment poses a problem for a purely physiological explanation of the yawn. Therefore, we need a more general principle. In my book, I called this the First Law of Chasmology: a yawn will occur: (1) if the yawner cannot do what he would like to do, or (2) if the yawner must do something that he would rather not do [9].

Chasmology as an Emergent Science

Another rather ambitious approach to chasmology is to see what the primary sciences can tell us about yawning and then use this information for a seminal synthesis. The primary sciences thus become auxiliary disciplines. This ideal of chasmology is therefore to become an emergent science that transforms and transcends the basic scope and results of the auxiliary disciplines.

The Second Law of Chasmology – a special adaptation of the general First Law and a subcategory of this more ambitious approach – states that the disparate data derived from the primary sciences allow the hypothesis of the erotic/sexual aspect of the yawn.

Let us review briefly the findings of the primary sciences that allow the conjecture of what the Abbé de Lignac called intuitively ‘the tedious sensuality of the yawn’ [10].

Linguistic

I found that both the ‘yawn’ and the ‘stretch’ of the stretch-yawn syndrome (SYS) are semantically and etymologically associated with ‘desire’ and ‘longing for’. A fine example is presented by the troubadours of 12th century France who used the yawn as a sign of love [11]: ‘Love makes him stretch his arms, and yawn this softly.’

The association of yawning, stretching and (being in) love is also echoed by modern writers like W.B. Yeats and Ezra Pound [12].

Social-Ethnological

In several proverbs and sayings, yawning – especially contagious yawning – is interpreted as a sign of sympathy, and even of being in love. Also, in folktales the association between contagious yawning and the erotic is made [13].

Psychological

Its contagiousness is probably the most striking feature of the yawn, and over time yawning has been found to be contagious in more and more species [14, 15]. Moreover, not only is yawning contagious within, but also between species [16]. Contagious yawning is associated with empathy [17], and more specifically with sympathy. In short, the infected yawner has a positive relation with or attitude towards the original yawner.

Ethological

Yawning appears to have a much greater role in animal communication than previously thought. As sex and procreation play such important parts in animal life, it will come as no surprise that yawning can be linked with, e.g. arousal, ejaculation, orgasm (sexual response; SR). The role of yawning and especially contagious yawning in primates is receiving greater attention. However, the yawn may also be associated with the erotic or even the sexual in other orders and other classes. For instance, in birds [18]:

The male raven's yawn puts rival males to flight or exasperates them, but attracts female ravens. Ceremonial yawning plays a big part in the love-play of cormorants and gannets, showing the yellow or black colour (respectively) for a longer or shorter time.

In dogs, when they are forced to practise repetitive and monotonous training exercises, yawning can be associated with penile erection [19].

Karl Kraus remarked: 'When animals yawn they have a human face' [20]. Is this funny because we think the opposite statement is true: 'When humans yawn they look like animals?' or are they – double paradox – both true?

Pathological

Yawning is associated with SR in a number of pathological states. In epilepsy, both yawning and SR can be part of the aura [21–23]. Spontaneous ejaculation and yawning in the final stages of rabies have been reported [24, 25].

Pharmacological

There have been many reports about paradoxical sexual side effects of psychopharmacology and especially of antidepressant drugs [26]. It has been suggested that about 5% of patients experience these. In a few cases, yawning and SR were explicitly linked. The most dramatic case concerned the causal link of yawning and orgasm in a woman who used clomipramine [27]. Every time the woman yawned – even if voluntarily – she experienced orgasm. In the heroine withdrawal syndrome ('cold turkey'), yawning and spontaneous SR are also reported [28]. Several molecules, of which oxytocin and nitric oxide are the most prominent, seem to be involved in both yawning and SR.

Arts

In many cases, artists seem to be better observers than scientists. However, the artist himself is often unaware of the significance of his observation.

In literature, we encounter many intimations of erotic yawning. Two examples will suffice to convey the general idea. The Hungarian writer Dezső Kosztolányi suggested a clear association between the yawn and the erotic [29]:

A chambermaid yawned with the divine promise of casual love.

And Dutch novelist Margriet de Moor wrote equally convincingly [30]:

Again our shoes lay strewn across the floor. We drank from the same glass. Gasparo stretched, yawning, and I knew what this signified: I'm getting in the mood. That afternoon everything was just right.



Fig. 2. Trevor Price, *Morning Yawning*, 2001 (reproduced with kind permission from Trevor Price).

In the visual arts, we encounter a phenomenon that I coined ‘posture X’, which opens new vistas on the yawn [2]. In (semi-)posture X (one or) two hands are raised or held behind the neck or the head. Posture X mimics the SYS. It is the substitute of the socially unacceptable SYS. Posture X is therefore the abbreviation of the technically difficult, the esthetically disturbing and, moreover, the tabooed yawn. Or, to use one more analogy concerning this ‘fortunate junction of the visible and the audible’, as the sigh is the auditory proxy of the yawn, so is posture X its visual proxy:

posture X → stretch → SYS → yawn

In short, posture X refers – via the stretch and the SYS – to the yawn. Thus, we find ourselves in the fortunate position of being able to study the relatively scarce yawn indirectly via the omnipresent posture X. Examples of (semi-)posture X range from the *Sleeping Ariadne of the Vatican* over Michelangelo’s *Dying Captive* and Goya’s *La Maja* to Matisse’s *Blue Nude* and innumerable reclining, sitting and standing Venusses, putti, dancers, etc. (fig. 2).

Predictions

The theory of the erotic/sexual aspect of yawning may be corroborated or refuted in at least two ways. Firstly, it may be possible through ever more advanced scanning techniques to establish that the brain structures that are involved in SR are also involved in SYS. Secondly, it may be possible to find or make a substance that has the paradoxical sexual side effect of some drugs as its main effect: yawning causes SR.

Conclusions

As a first conclusion, we may state that chasmology has shown that yawning is not a trivial and insignificant behavior. On the contrary, yawning is a behavior pregnant with meaning. Moreover, Reber's law applies perfectly: the closer the yawn is examined, the more complex it is seen to be [31]. A second conclusion may be that there is sufficient evidence to conclude that yawning has an erotic/sexual aspect. Finally, we may assume that chasmology as an orthodox interdisciplinary science has a bright future and that as an emergent science it may yield some highly surprising results.

'I have not read them,' said Neigh, secretly wrestling with his jaw,
to prevent a yawn; 'but I suppose I must.'
Thomas Hardy [32]

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