

Body metaphors in field geology: Implications for sex- and gender- based harassment



Tamara Pico¹

1. Department of Geological & Planetary Sciences (tpico@caltech.edu)

Summary:

- Language choice has a real and measurable effect on scientific interpretation
- Sexualized language in geology creates a hostile environment conducive to gender- and sex- based harassment
- Body metaphors and personification of geologic processes can be traced historically and are a dominant framework in interpreting geoscience

Motivation:

- Language used in geoscience sets culture and tone for behavioral norms
- How might metaphors used in geoscience contribute to the prevalence of gender- and sex- based harassment?

Language can set scientific framework and cultural norms

How language shapes culture

The structure of language can shape our world view, bounding how we communicate our human emotions or even the color of the sea¹. Scholars in disciplines varying from archeology to neuroscience have shown that the assumptions we make about objects of scientific inquiry, especially related to the names assigned, can have real effects for our understanding of scientific processes^{2,3}. For example, preconceived notions of the passivity of the female egg significantly delayed scientists’ understanding of the active chemical role that eggs play in conception⁴. Evidence suggests metaphors used for scientific processes actually impact how we perceive their importance or urgency⁵.

Sample of recent metaphor framing experiments (Thibodeau et al.⁵)

Target domain	Source domain	Outcome	Refs
Business failure	Vehicle accident vs storm	More responsibility attributed to CEO on ‘accident’; more responsibility to economic conditions on ‘storm’	[40]
Crime	Virus vs beast	More support for social reform (rather than enforcement) on ‘virus’	[8,10–11]
Climate change	War vs race	More urgency, risk perception, and willingness to change behavior on ‘war’ metaphor	[90]
Ideas	Light bulbs vs seeds	Ideas seem more exceptional as ‘light bulbs’	[9]

Geology language and sexual harassment

The use of sexually explicit language in geology and the field is not just exclusive or offensive, it creates real and physical danger. This kind of language constitutes gender-based harassment, and violates university policies in compliance with Title IX⁶. The field is known to be a dangerous place for women and other underrepresented groups. In a 2014 study surveying fieldwork scientists, 71% of women reported experiencing harassment and 26% reported experiencing physical assault⁷. According to a report by the National Academy of Science, Engineering, and Medicine, underrepresentation of women in authority and the acceptance of hostile environments increases likelihood of sex and gender-based harassment and assault⁶.

I posit that the use of sexual language sets a cultural standard that perpetuates verbal and physical sex-based harassment. Using sexually-charged language that bodies geology renders the field a site of desire and conquest, constructing a social power structure that wields to masculine dominance⁸. These gendered dynamics exacerbate the already substantial power gap between faculty and students in trainer-trainee relationships, and bend peer-to-peer power relationships. This tone creates an aggressive or hostile macho environment, making field geology particularly prone to occurrences of sexual harassment.

Examples of body metaphors in historical geology

Eliot Lord, writing on the 1878 USGS Clarence King Expedition: “viewed from this distance the **naked** barrenness of the land is less obtrusive”, and then dresses an adjacent landscape using a “soft **drapery** of worn brown velvet, with glinting **threads** of warmer hue”⁹

G.K. Gilbert, in his Report on Henry Mountains, describes that: “the deep carving of the land which renders it so inhospitable to the traveler and the settler, is to the geologist a **dissection** which lays **bare** the very **anatomy** of the rocks, and the dry climate which makes the region a **naked** desert, soilless and almost plantless, perfects the preparation for his examination”¹⁰ (1877)

J.D. Whitney described the Rocky Mountains and Appalachians as “two great ranges of mountains [that] form the **skeleton** of the North American continent”.¹¹ (1854)

Harlen Bretz describes Channeled Scablands in Eastern Washington: “like great **scars** marring the otherwise fair **face** of the plateau are these elongated tracts of **bare**, or nearly bare, black rock carved into mazes of buttes and canyons”.¹² (1928)

J.D Whitney describes the formation of a metal deposit as “the **impregnation** of the lode with mineral matter [which is] entirely dependent on the nature of the adjacent rock”.¹¹ (1854)

References

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10. G.K. Gilbert, ‘Report on the Geology of the Henry Mountains’, (1877).

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What metaphors are used in geology today?

Some categories of bodied or sexualized language...

emotions
(young and unsure, lazy, aggressive)

clothing/nudity
(blanketed, robed, stripped naked)

body parts or body
(including sexual) processes
(penetrating, lubed up, riding dirty, augen, veins)

sexualized/sexist language
(describing geology as a “turn on”, geoporn, sexual jokes about geology, for e.g. making lesbian jokes with geologic dikes)

gendered (feminized/ masculinized) geology

sexual/sexist images in describing geology



Overheard in Geoscience

Grab a post-it note and share something you’ve overheard!