

WORK AND
WELL-BEING
IN SCIENCE
An International Study

SUMMARY OF FINDINGS

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The Role of Aesthetics in Science

Survey findings from Work
and Well-Being in Science:
An International Study (2021)

Work and Well-Being in Science: An International Study

Work and Well-Being in Science: An International Study is the largest cross-national research initiative to understand key factors that affect the well-being of scientists. The study focuses on scientists in physics and biology departments in four countries: India, Italy, the UK, and the US. It examines topics such as meaning and identity in work, the role of aesthetics in scientific work, scientists' assessments of their workplace cultures, and the ways in which scientists' work and lives have been affected by the COVID-19 pandemic.

The research firm Abt Associates surveyed 22,840 scientists at 233 universities and research institutes in the four countries between May-September 2021, yielding a total of 3,442 completed surveys (AAPOR Response Rate of 15.2%). The project research team also conducted 215 in-depth interviews with scientists in these countries.

This report provides weighted descriptive statistics from completed survey responses (N=3,442) regarding the role of aesthetics in scientific work.

Demographic Overview

COUNTRY	Sample (Unweighted) Proportion	Weighted Proportion
USA	16%	54%
UK	27%	26%
INDIA	39%	10%
ITALY	19%	10%

GENDER	Sample (Unweighted) Proportion	Weighted Proportion
FEMALE	40%	32%
MALE	60%	68%

DISCIPLINE	Sample (Unweighted) Proportion	Weighted Proportion
PHYSICS	53%	52%
BIOLOGY	40%	38%
OTHER	7%	10%

POSITION	Sample (Unweighted) Proportion	Weighted Proportion
POSTGRADUATE STUDENT	43%	29%
POSTDOC	14%	15%
RESEARCH SCIENTIST	9%	5%
JUNIOR FACULTY	10%	12%
MID-LEVEL FACULTY	11%	12%
SENIOR FACULTY	13%	26%

Where do scientists encounter beauty at work?

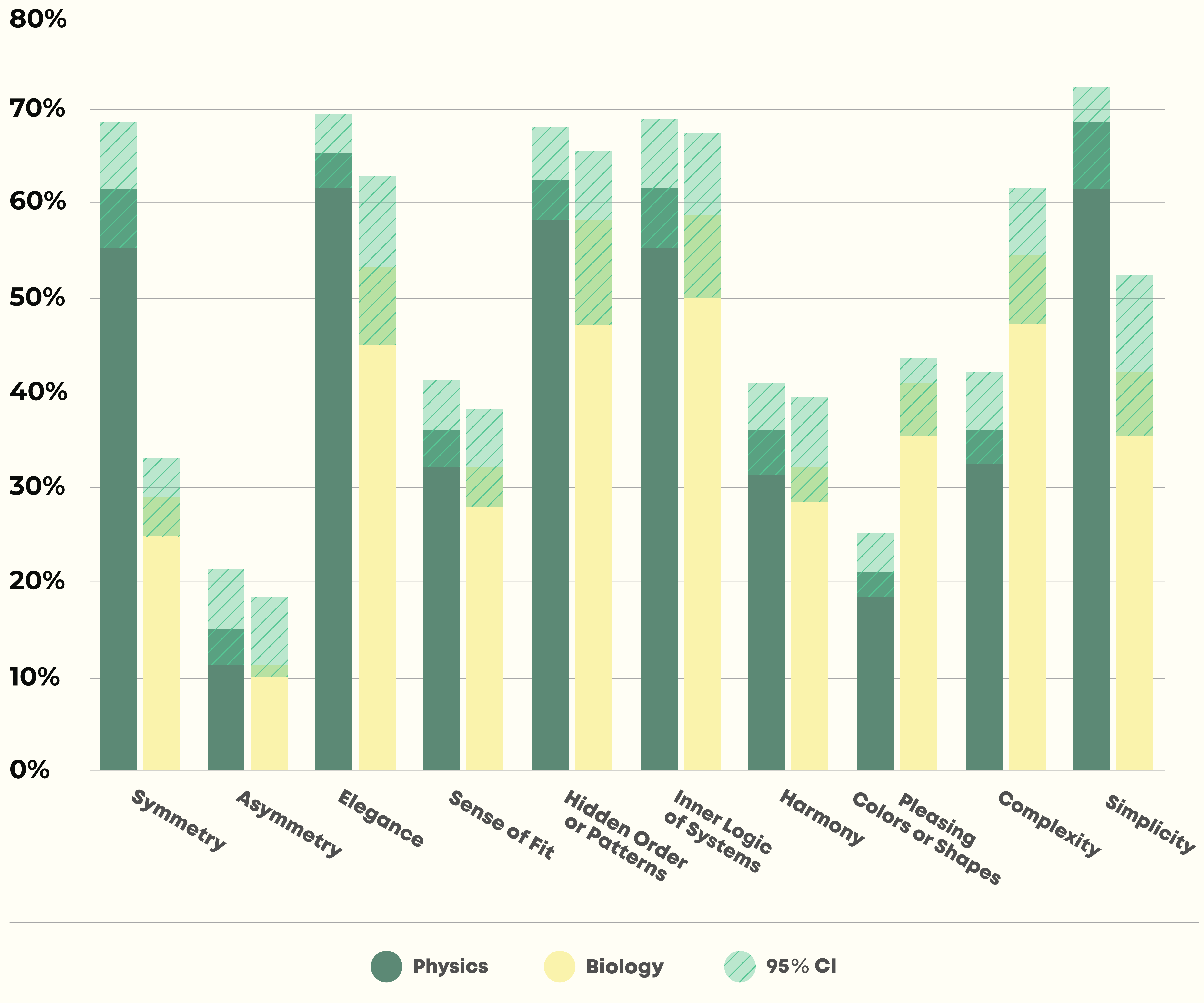
“In which of the following aspects of work do you encounter beauty (however you define it?)”

	Percentage
Phenomena that I study (e.g., cells, particles, etc.)	75%
Scientific theories	61%
Teaching science	54%
The process of scientific research	52%
Writings of prominent scientists	36%
Scientific journal articles	31%
My workplace	31%
Scientific conference presentations	29%
None of the above	3%

What does “beauty” mean to scientists?

“Which of the following would you ascribe with “beauty” in your scientific work?”

Beauty in Science

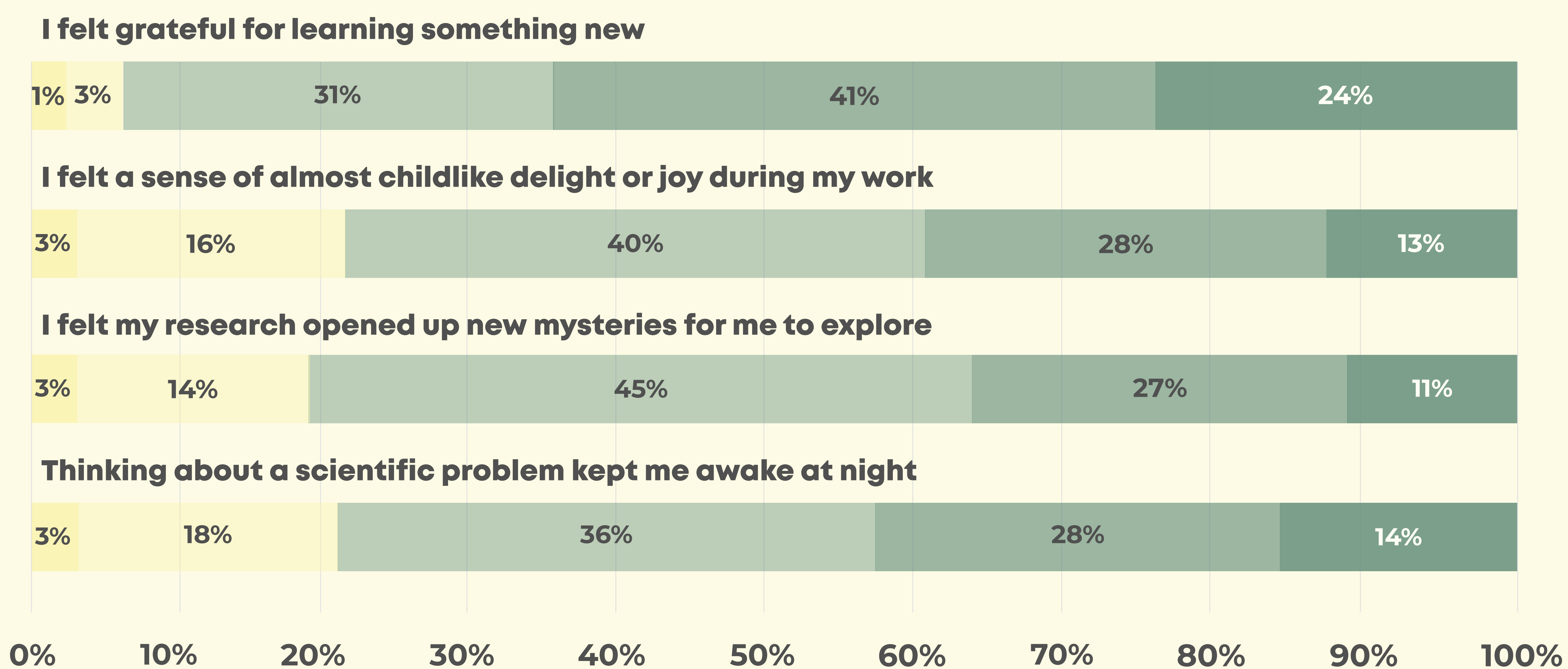


Three

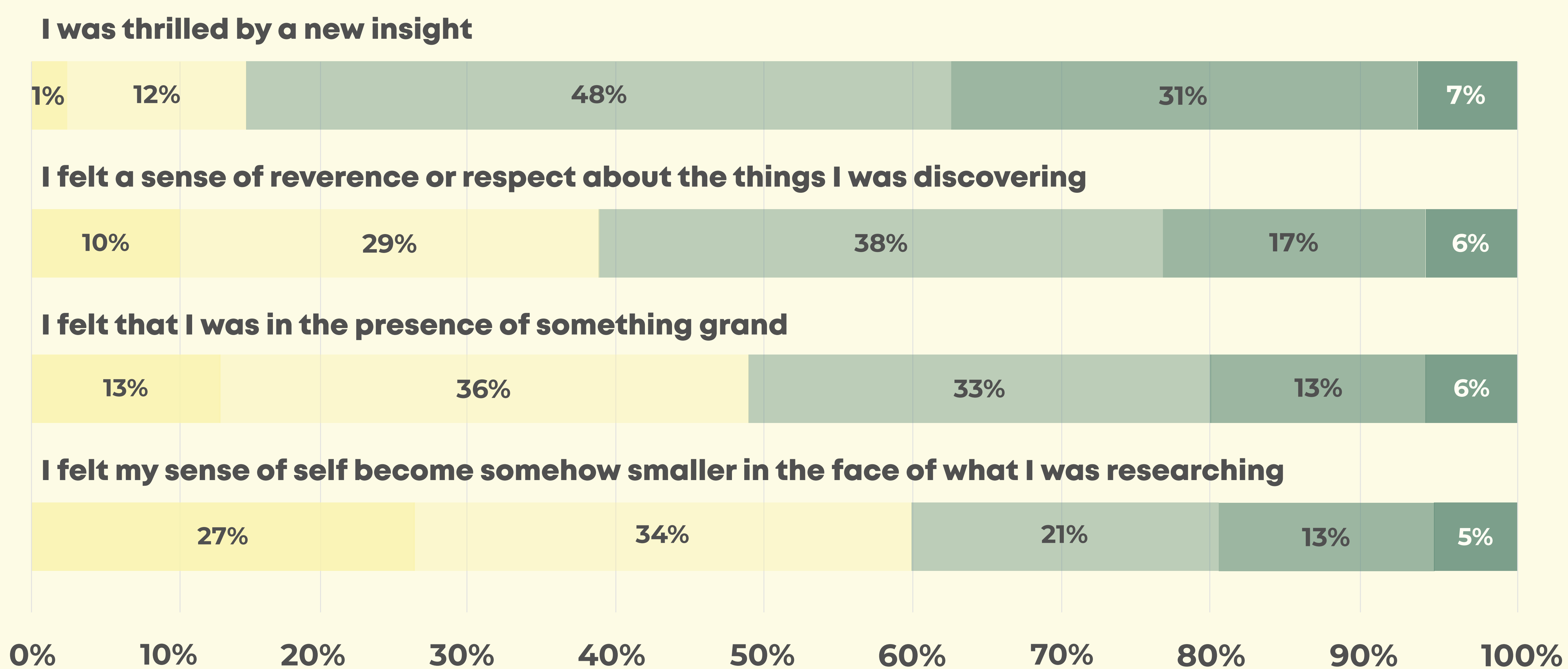
How frequently do scientists encounter wonder, awe, and beauty at work?

“How frequently have you experienced the following in your scientific work?”

Wonder



Awe



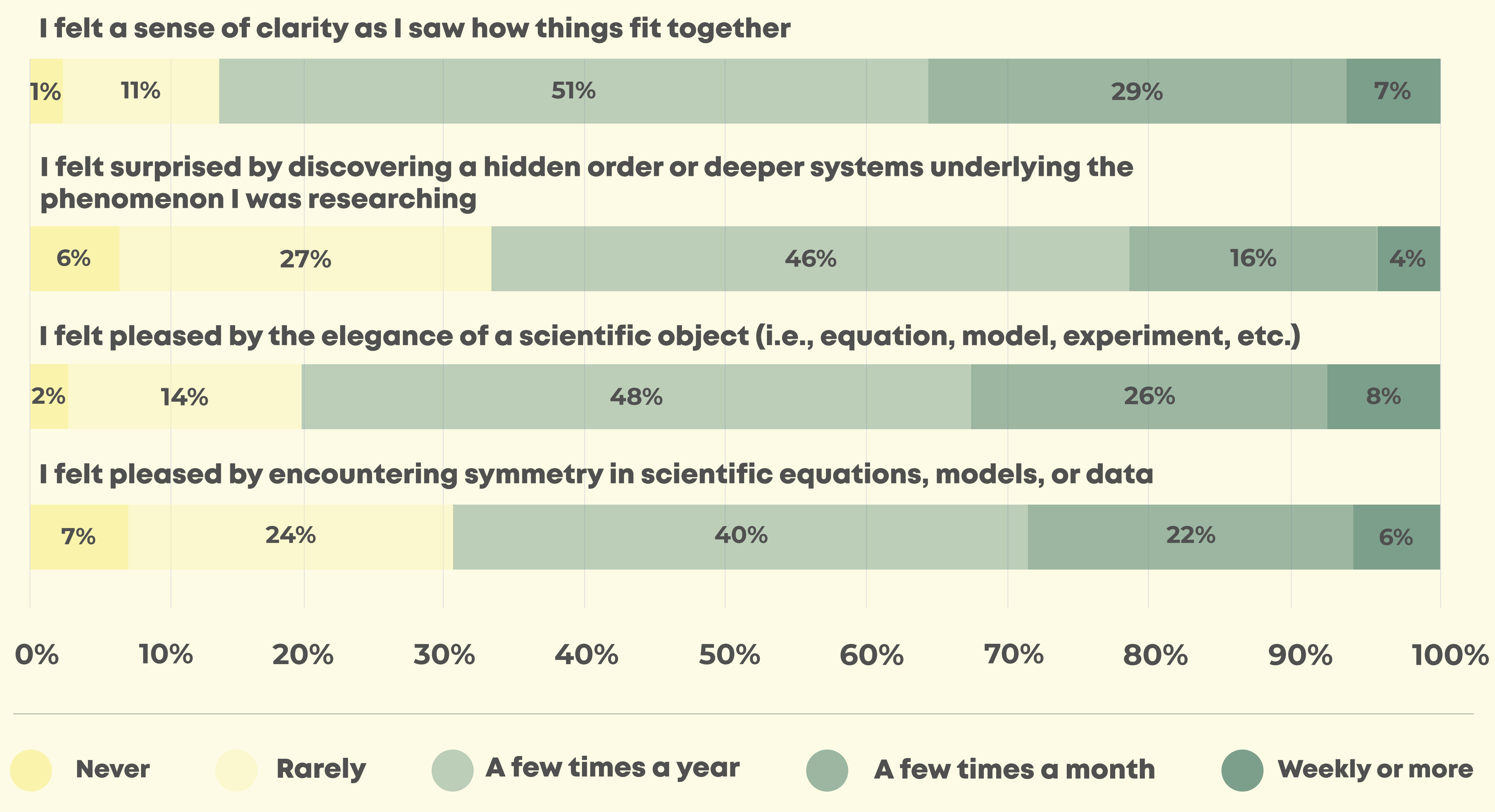
● Never ● Rarely ● A few times a year ● A few times a month ● Weekly or more

Three

How frequently do scientists encounter wonder, awe, and beauty at work?

“How frequently have you experienced the following in your scientific work?”

Beauty



Four

When do aesthetic factors matter to scientists?

In which of the following aspects of the scientific process are aesthetic considerations (e.g., symmetry, elegance, etc.) relevant for you?"

	Percentage
When I present or communicate scientific results	63%
When I analyze or interpret results	56%
When I conceive or design a project	49%
When I develop hypotheses or theories	46%
When I make observations in the lab or field	41%
When I confirm a hypothesis, theory, or model	38%
When I write code	36%
When I develop a project plan or grant application	33%
When I do theoretical calculations	29%
When I experience a lack of understanding	19%
When a hypothesis, theory or model fails	12%
None of the above	3%

Five

How are aesthetic factors socialized and communicated in scientific workplaces?

“Which of the following statements do you agree with?”

	Percentage
I often pay attention to aesthetic aspects of my colleagues' work (e.g., at conferences)	55%
I often discuss what I find beautiful in science with colleagues or students	43%
I believe that most colleagues in my field would share my aesthetic preferences	32%
I have changed my mind about what counts as beauty in science during my career	26%
During my doctoral training, I often heard my supervisors refer to aesthetic aspects of science	26%
None of the above	14%
I feel uncomfortable talking to my colleagues about the awe, wonder, or beauty I experience in science	13%

Six

What are the consequences of encountering beauty in scientific work?

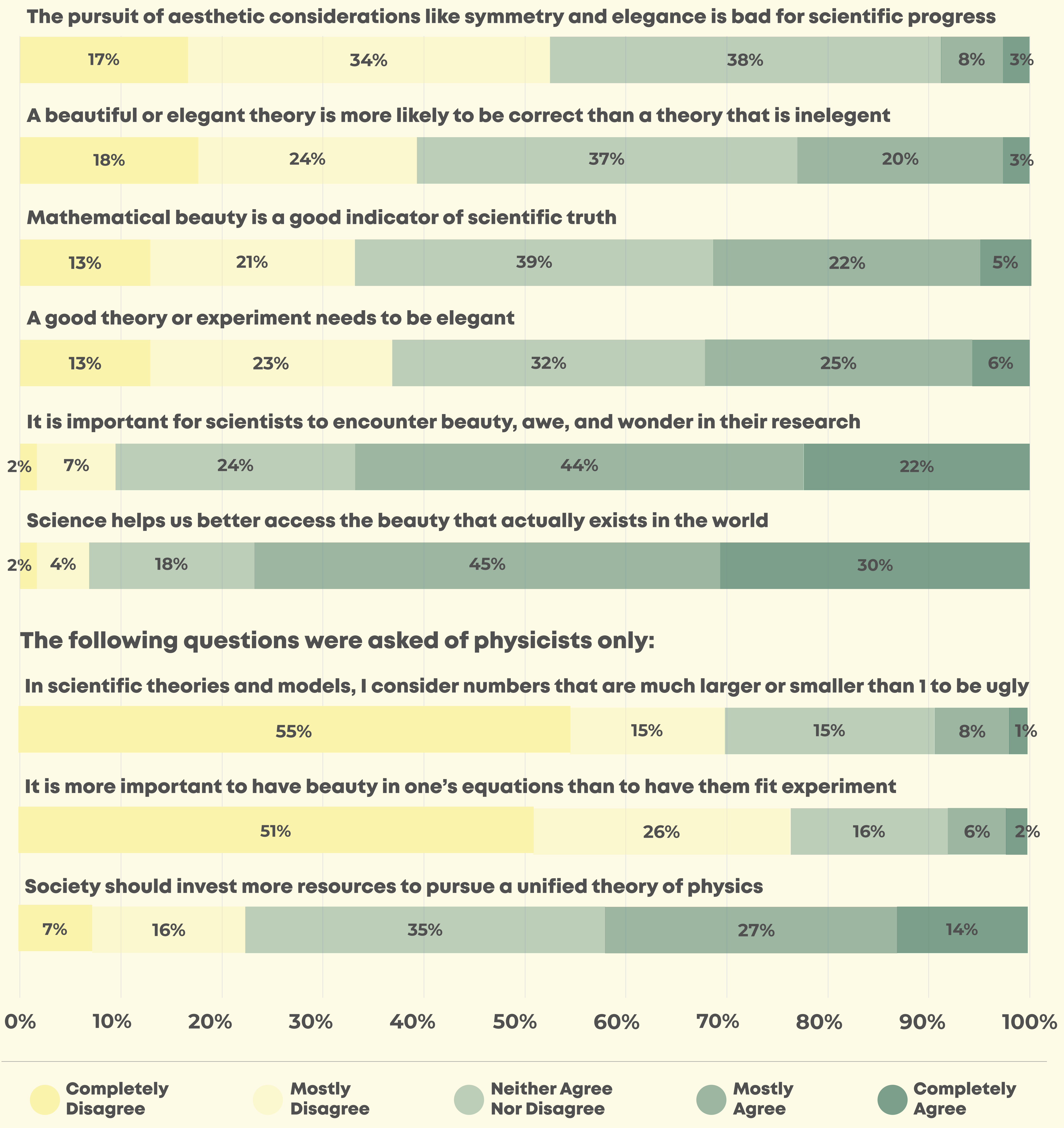
“Encountering beauty in my scientific work...”

	Percentage
Motivates me to share the beauty of science through teaching or mentoring	62%
Motivated me to pursue a scientific career	62%
Improves scientific understanding	57%
Helps me persevere when I experience difficulties or failure in my work	50%
Motivates me to communicate science to the public	49%
Feels similar to the beauty I encounter in forms of art (e.g., fine art, music)	47%
Gives me more confidence in my results	42%
Makes me think that I am on the right road to reach truth in my investigation	35%
Has been life-changing for me	22%
Suggests to me the existence of a higher power	14%
Leads me to think I should re-check my work	13%
None of the above	5%

Seven

How do scientists evaluate the importance of aesthetic considerations in science?

“Please indicate the extent to which you agree with the following statements”



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For updates on the project and related publications, or more details on our methodology, please visit our website at www.wellbeinginscience.com