

Argumentation Synthesis following Rhetorical Strategies

Rhetorical strategies to achieve persuasive effectiveness in argumentation

An argumentative text aims to persuade readers of a stance on a controversial topic.

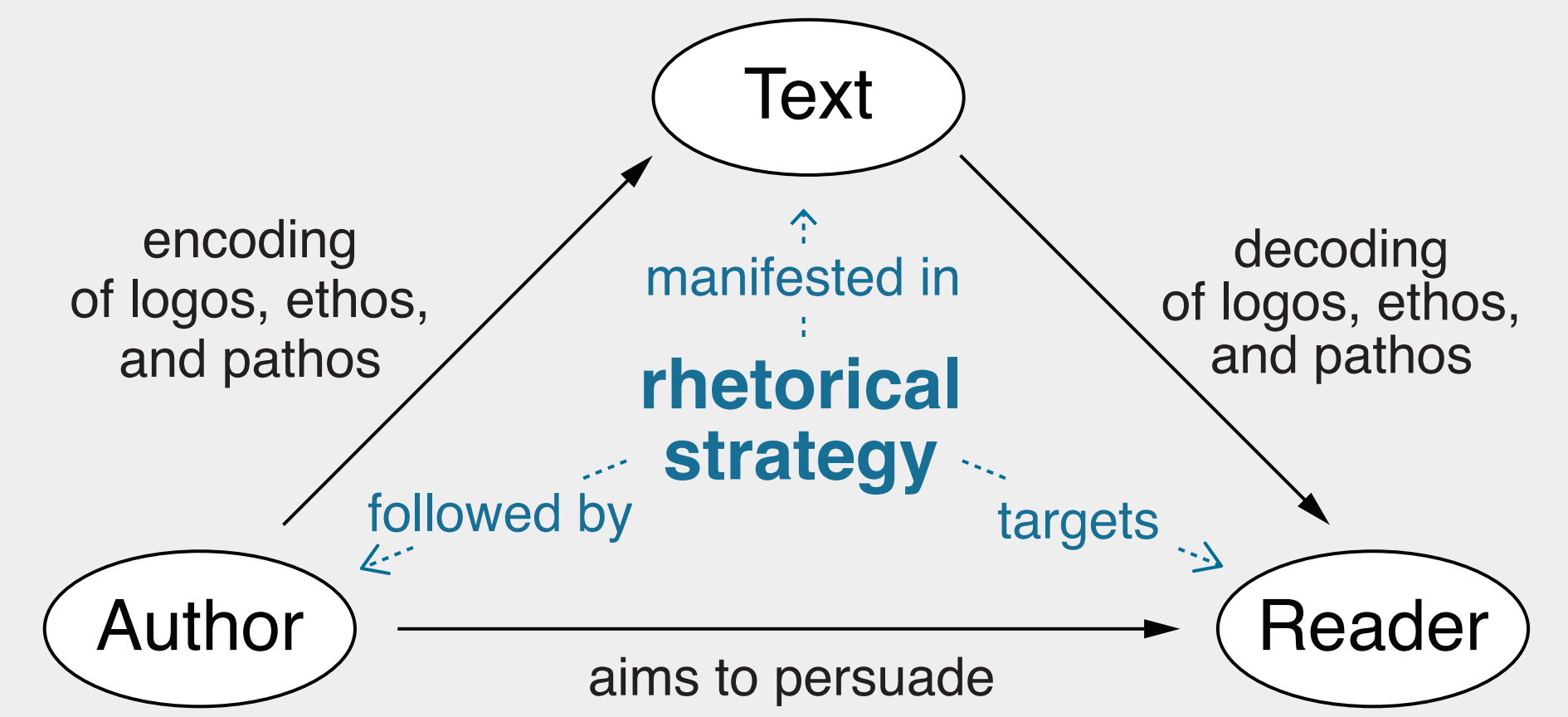
The author often follows a rhetorical strategy, encoding Aristotle's means of persuasion:

Logos
providing logically reasoned arguments

Ethos
demonstrating good character and credibility

Pathos
evoking the right emotions

Readers decode the text, forming their view of the author's logos, ethos, and pathos.



Modeling rhetorical strategies for the computational synthesis of argumentative texts

Given a topic-stance pair and a weighting of the means of persuasion...

1. Select the content

- Topical frames matching the means
- Argument units supporting the stance

2. Arrange the structure

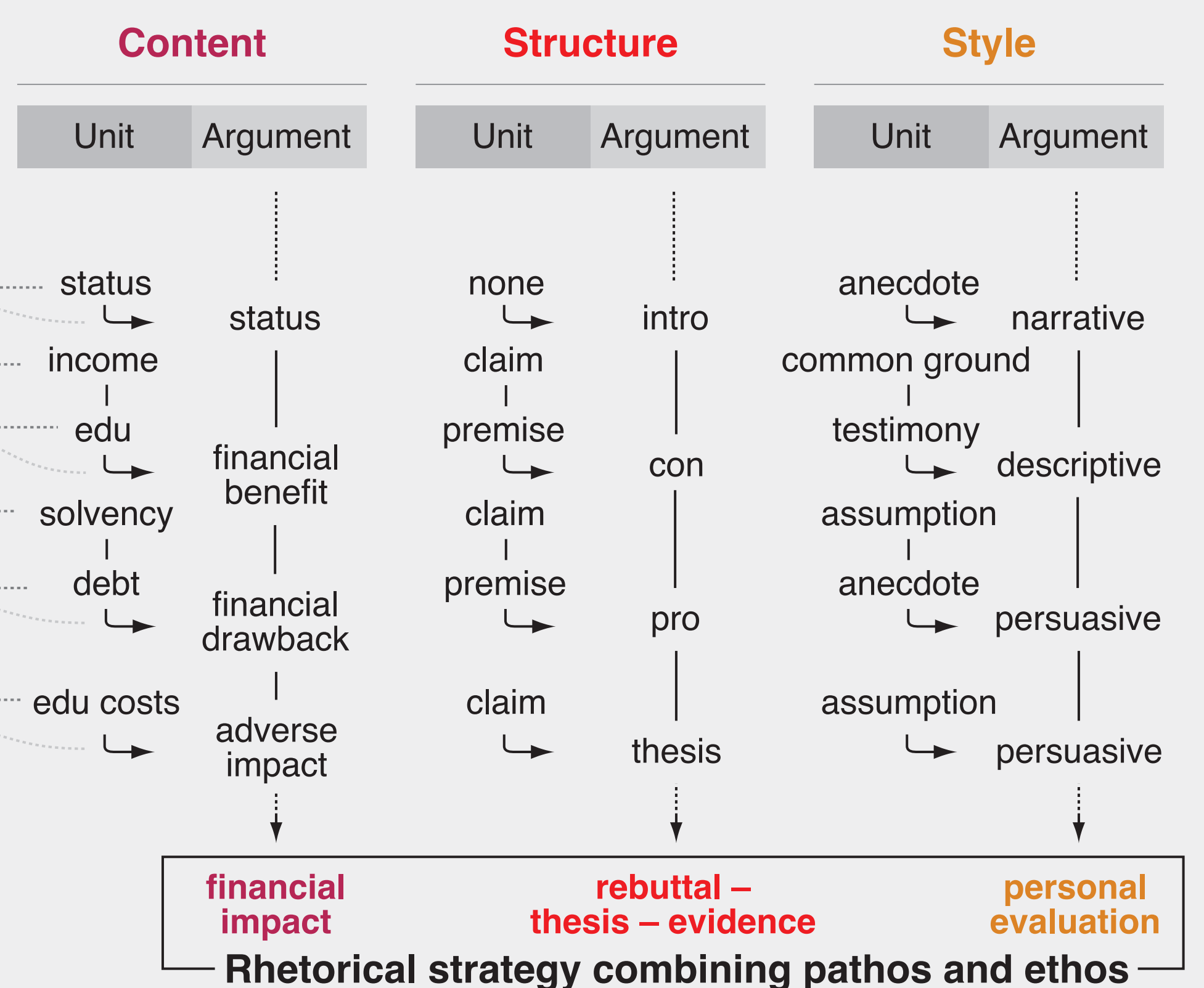
- Argumentative hierarchy of the units
- Effective sequence of the arguments

3. Phrase the style

- Sentences in persuasive language
- A text coherently tying the sentences

I have a very distinct memory from my first day of college: My family's minivan slowly pulling into my dormitory's parking lot, through a crowd of first-year students flanked by helicopter parents and, in retrospect, probably hungover orientation week advisers. I remember thinking "Hurry up! I'm ready to start my real life."
I had no idea what I was really rushing towards.
As the only daughter of Nigerian immigrants with a tenuous-at-best foothold on the middle class, college was billed as the only path to financial security. "No one can ever take away your education," my father would say repeatedly. While that may be true, two degrees later someone could take away my access to decent housing because of my shit credit, thanks to the nearly \$60,000 in student loans I've essentially defaulted on since graduating from the University of Chicago and Northwestern University.
It seems a college education is part of the American dream that's easy to buy (or borrow) into, but hard to pay off.
With tuition soaring, and the middle class shrinking along with their incomes, many students and their families are left holding incredibly expensive bags. In 2013, 69% of graduating seniors at public [...]"

Topic: College edu helps financial security? Stance: con



Argument units for 10 topic-stance pairs

Manual decontextualization of 200 thesis, con, and pro units from the Arg-Microtexts corpus (Peldszus and Stede, 2016).

Type	#	Argument units against "Should Germany introduce the death penalty?"
Thesis	t1	Germany should by no means introduce capital punishment
	t2	Germany should not introduce capital punishment
	t3	the death penalty is a legal means that as such is not practicable in Germany
	t4	the state ought to prevent murder - not avenge it
Con	c1	criminals should not be put in luxury prisons
	c2	many people think that a murderer has already decided on the life or death of another person
	c3	murderers and rapists have taken or destroyed another life
	c4	proponents of the death penalty count on its deterring effect as well as the ultimate elimination [...]
Pro	p1	a death would not be of any more use to those affected [...] than if the felon receives a long sentence
	p2	a door must remain open for making amends
	p3	capital punishment is not a solution
	p4	courts are subject to human error
	p5	despite the death penalty there are significantly more homicides in the US than in Germany
	p6	every human, even those who have committed a despicable crime, can bring themselves to regret [...]
	p7	everyone must be given the chance to hone their conscience and possibly make amends for their deed
	p8	it is a much graver punishment to be imprisoned forever and be tortured by one's own thoughts [...]
	p9	it turns out time and again that innocent people are convicted and executed
	p10	no one can claim the right to rule over the life or death of another human being
	p11	no one may have the right to adjudicate upon the death of another human being
	p12	we don't live in medieval times anymore



Annotation study of strategical synthesis

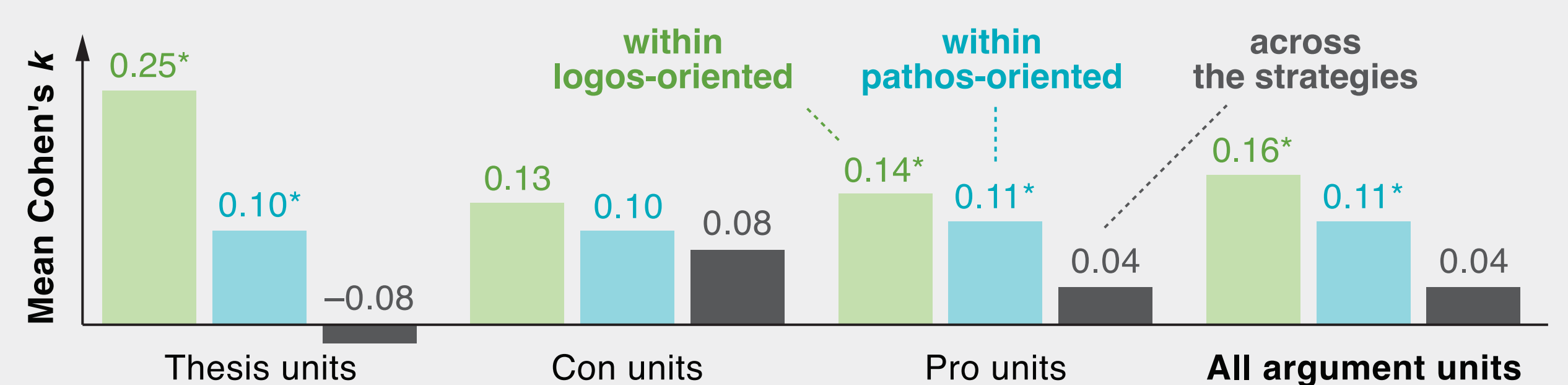
Given all 20 argument units for each topic-stance pair and 1 of 2 principled strategies...



... 13 annotators were asked to:

- **Select** 1 thesis, 1 con, and 3 pro units
- **Arrange** the 5 units in the most suitable way
- **Phrase** a coherent text by inserting connectives

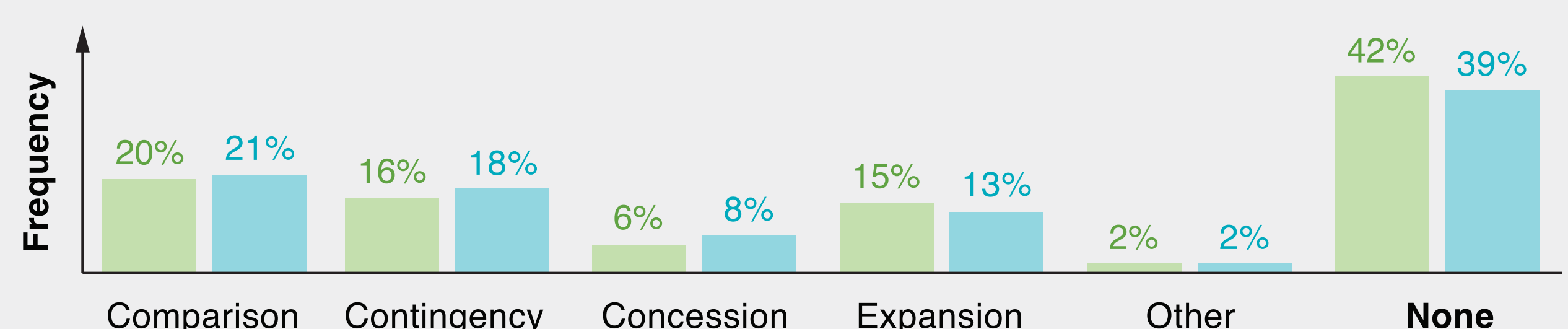
The selection of units differs significantly across strategies:



The arrangement of units is very stable across strategies:

- (thesis, con, pro, pro, pro) 34.6% #1 43.1% #1
- (con, thesis, pro, pro, pro) 13.1% #2 13.8% #2
- (thesis, pro, con, pro, pro) 12.3% #3 12.3% #3

The phrasing in terms of connective insertion is also stable. A study of other phrasing choices is left to future work.



260 manually synthesized arguments

2 strategies, 10 topic-stance pairs, 13 expert annotators each

Logos-oriented

t2 Germany should not introduce capital punishment.
c4 Proponents of the death penalty count on its deterring effect as well as the ultimate elimination [...].
p5 However, despite the death penalty there are significantly more homicides in the US than in Germany.
p4 Furthermore, courts are subject to human error.
p9 It turns out time and again that innocent people are convicted and executed.

Pathos-oriented

t1 Germany should by no means introduce capital punishment.
c2 Many people think that a murderer has already decided on the life or death of another person.
p2 Still, a door must remain open for making amends.
p6 Every human, even those who have committed a despicable crime, can bring themselves to regret [...].
p11 Therefore, no one may have the right to adjudicate upon the death of another human being.