

Rhetorical Structure Theory

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UIC CS 421

Rhetorical Structure Theory

- Based on a set of 23 **rhetorical relations** that can hold between spans of text within a discourse
- Most relations are between two spans:
 - **Nucleus**
 - More central to the writer's purpose
 - Interpretable independently
 - **Satellite**
 - Less central to the writer's purpose
 - Only interpretable with respect to the nucleus

Rhetorical Structure Theory

- Relations are **asymmetric**
 - Represented graphically with arrows pointing from the satellite to the nucleus
- Relations are defined by a **set of constraints** on the nucleus and satellite
- Constraints are based on:
 - **Goals and beliefs** of the writer and reader
 - **Effect** on the reader



Common RST Relations

Elaboration	Satellite gives further information about the content of the nucleus
Attribution	Satellite gives the source of attribution for an instance of reported speech in the nucleus
Contrast	Two or more nuclei contrast along some important dimension
List	A series of nuclei is given, without contrast or explicit comparison
Reason	Satellite provides the reason for the action carried out in the nucleus
Evidence	Satellite provides information with the accept the information provided in the nucleus

Natalie told the class that there was no assignment due next week, reminding them that the grad students' research highlights were due on Monday instead.

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Outside was freezing, but inside was uncomfortably warm.

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In the fall, Natalie taught CS 421; in the spring, Natalie taught CS 521; in the summer, Natalie worked on research.

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Natalie spent a lot of time staring at her webcam on Monday. She had six long Zoom meetings.

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Contrast	Two or more nuclei contrast along some dimension <div>Natalie must be here. Her office door is cracked open.</div>
List	A series of nuclei is given, without contrast or explicit comparison
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RST relations can be hierarchically organized into discourse trees.

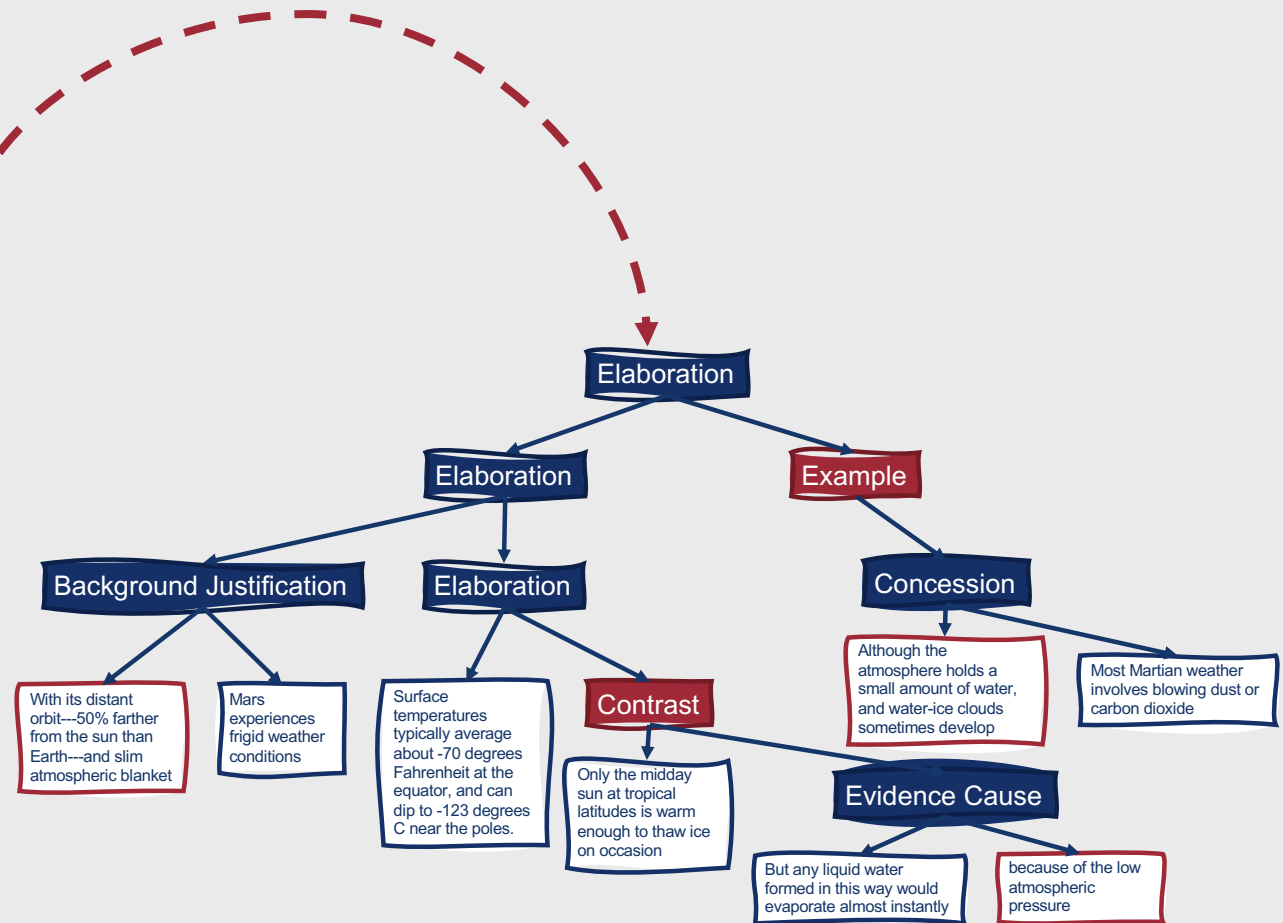
With its distant orbit—50% farther from the sun than Earth—and slim atmospheric blanket, Mars experiences frigid weather conditions. Surface temperatures typically average about -70 degrees Fahrenheit at the equator, and can dip to -123 degrees C near the poles.

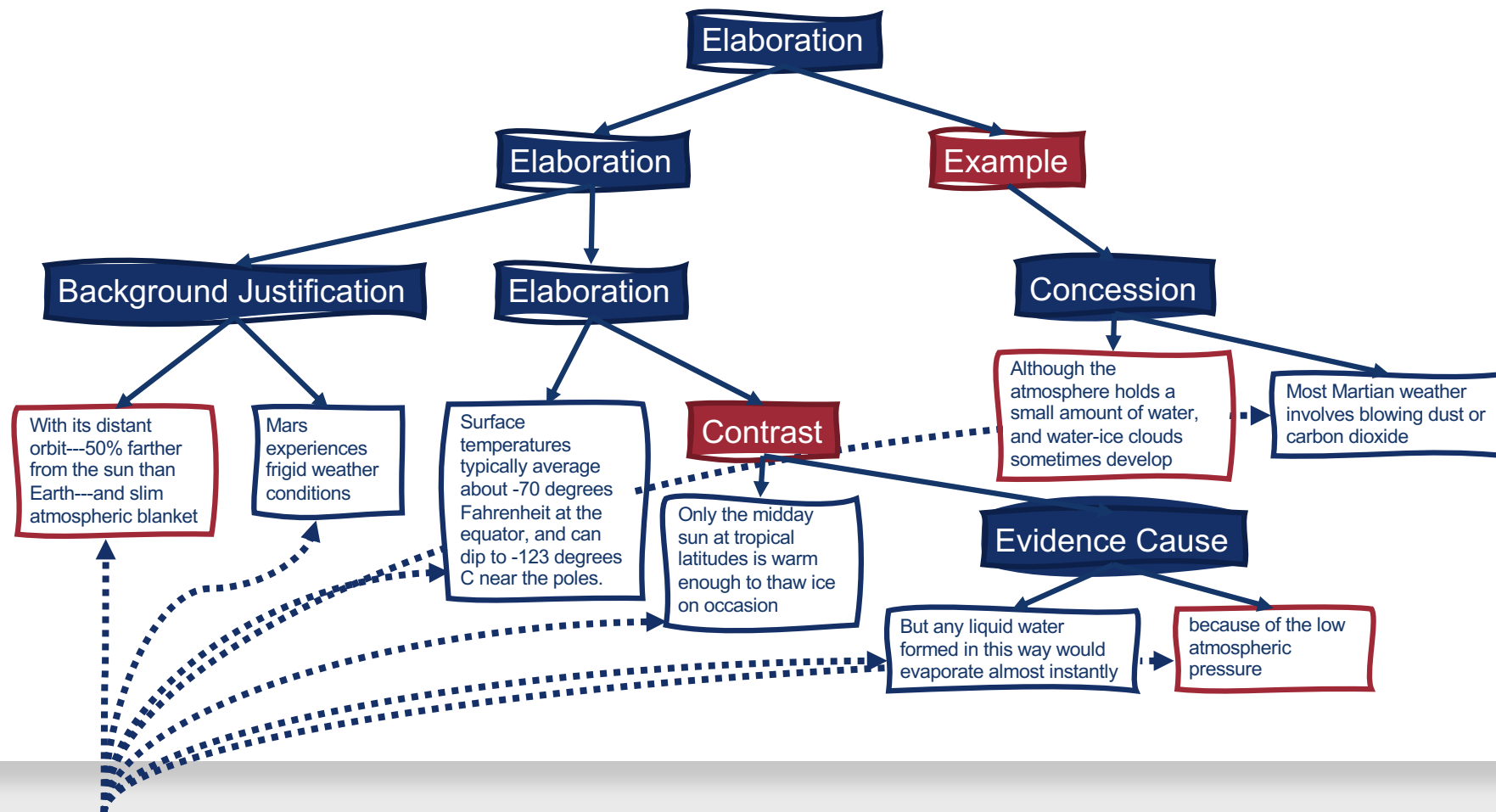
Only the midday sun at tropical latitudes is warm enough to thaw ice on occasion, but any liquid water formed in this way would evaporate almost instantly because of the low atmospheric pressure. Although the atmosphere holds a small amount of water, and water-ice clouds sometimes develop, most Martian weather involves blowing dust or carbon dioxide.

Example Discourse Tree

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Elementary Discourse Units (EDUs)

- Leaves in a discourse tree
 - Also referred to as discourse segments
- Determining the boundaries of EDUs is important for extracting coherence relations