Crossed Swords & Broken Hearts: A Computational Model of Narrative Conflict

Stephen G. Ware
sgware@ncsu.edu

R. Michael Young
young@csc.ncsu.edu

Liquid Narrative Research Group, Department of Computer Science, North Carolina State University

LIQUID NARRATIVE GROUP   DGRC   NSF

Conflict in Narrative

Conflict is essential to narrative.
- Conflict structures the discourse.
- Conflict engages the audience.

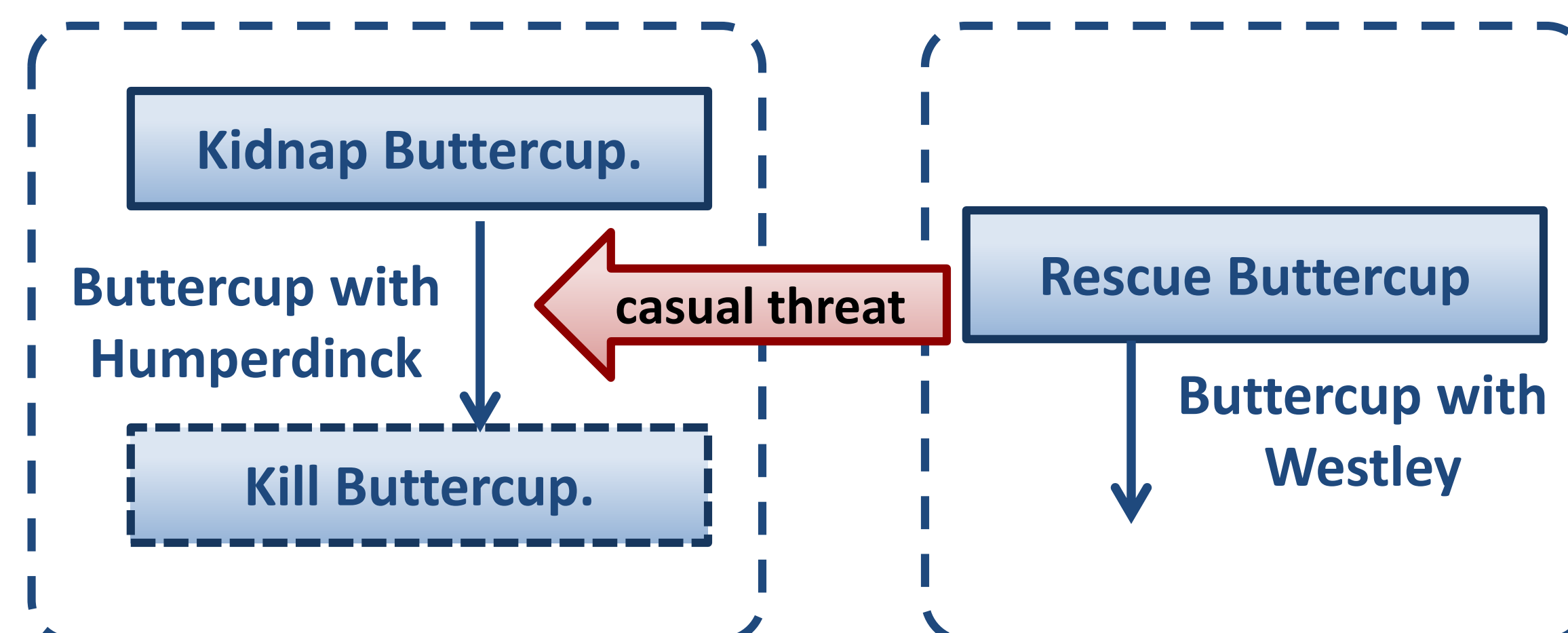We present a **computational model of conflict** which:
- Embodies narrative understanding
- Allows for re-use of story assets
- Makes computer narrative more adaptable

Anatomy of a Conflict

A **conflict** occurs when a character forms a plan which may be thwarted by
- Another character's plan (external conflict)
- Another plan by the same character (internal conflict)
- The environment or fate (conflict with destiny)

The CPOCL model is based on least-commitment, STRIPS-style, partial order, causal link plans. These plans are similar to a story's **fabula**.

Kidnap Buttercup. → Buttercup with Humperdinck → Kill Buttercup.
casual threat ← Rescue Buttercup → Buttercup with Westley

A **casual link** connects the effect of one action to the precondition another. It becomes **threatened** when a third action can undo the fact it established.
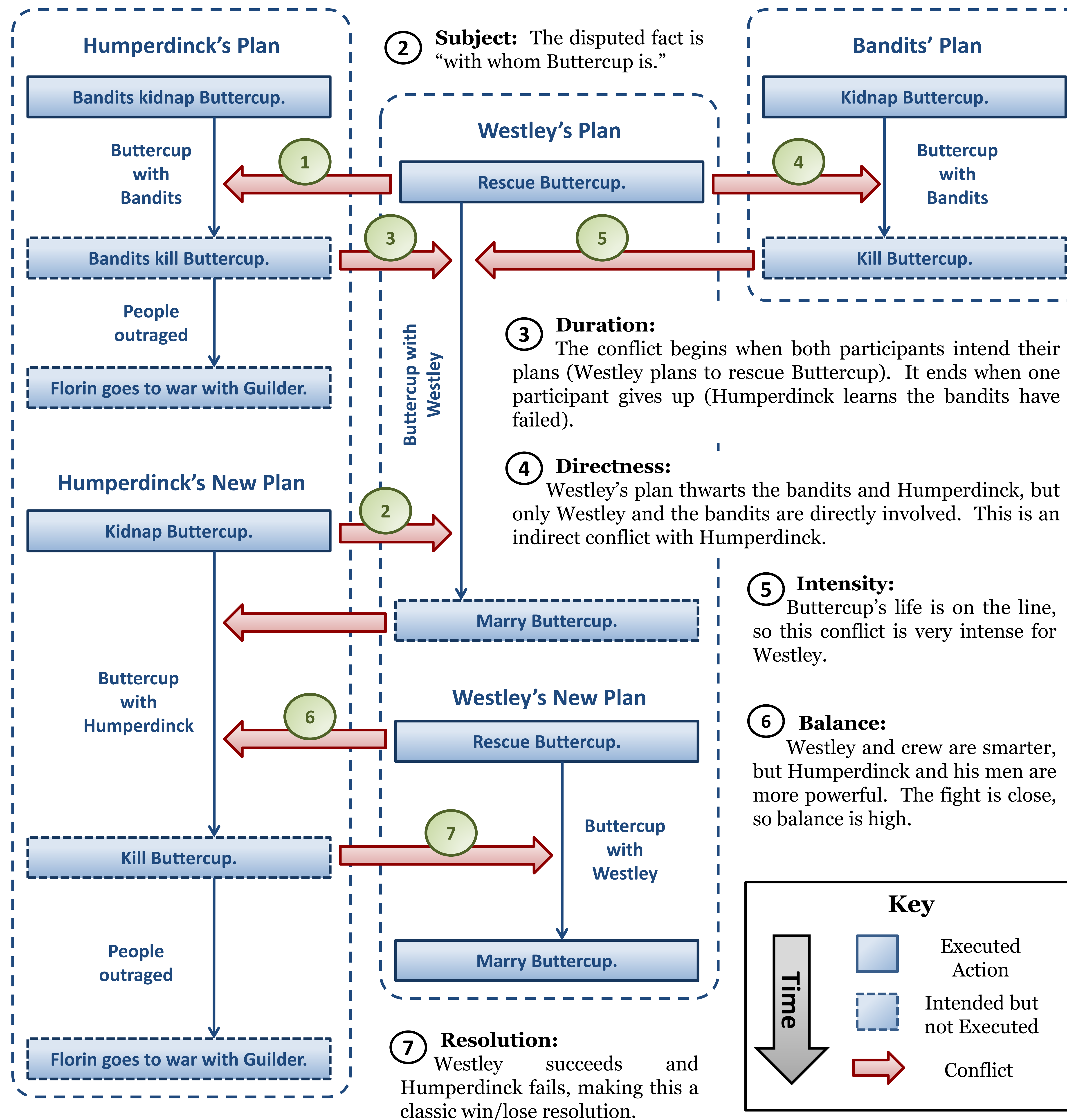
Traditional planners seek to remove them, but we leverage threatened causal links that arise between intention frames to represent conflict.

By strategically marking some steps as **intended but not executed**, CPOCL plans are still guaranteed to achieve the planning problem's goal despite the presence of conflict links.

We also define **7 dimensions of conflict** that guide plan search based on authorial constraints.

The Princess Bride©

① **Participants:** This conflict is between Humperdinck and Westley.

② **Subject:** The disputed fact is "with whom Buttercup is."

Humperdinck's Plan
- Bandits kidnap Buttercup.
- Buttercup with Bandits
- Bandits kill Buttercup.
- People outraged
- Florin goes to war with Guilder.

Westley's Plan
- Rescue Buttercup.

Bandits' Plan
- Kidnap Buttercup.
- Buttercup with Bandits
- Kill Buttercup.

Humperdinck's New Plan
- Kidnap Buttercup.
- Buttercup with Humperdinck
- Marry Buttercup.

Buttercup with Westley

Westley's New Plan
- Rescue Buttercup.
- Buttercup with Westley
- Marry Buttercup.

- Kill Buttercup.
- People outraged
- Florin goes to war with Guilder.

③ **Duration:** The conflict begins when both participants intend their plans (Westley plans to rescue Buttercup). It ends when one participant gives up (Humperdinck learns the bandits have failed).

④ **Directness:** Westley's plan thwarts the bandits and Humperdinck, but only Westley and the bandits are directly involved. This is an indirect conflict with Humperdinck.

⑤ **Intensity:** Buttercup's life is on the line, so this conflict is very intense for Westley.

⑥ **Balance:** Westley and crew are smarter, but Humperdinck and his men are more powerful. The fight is close, so balance is high.
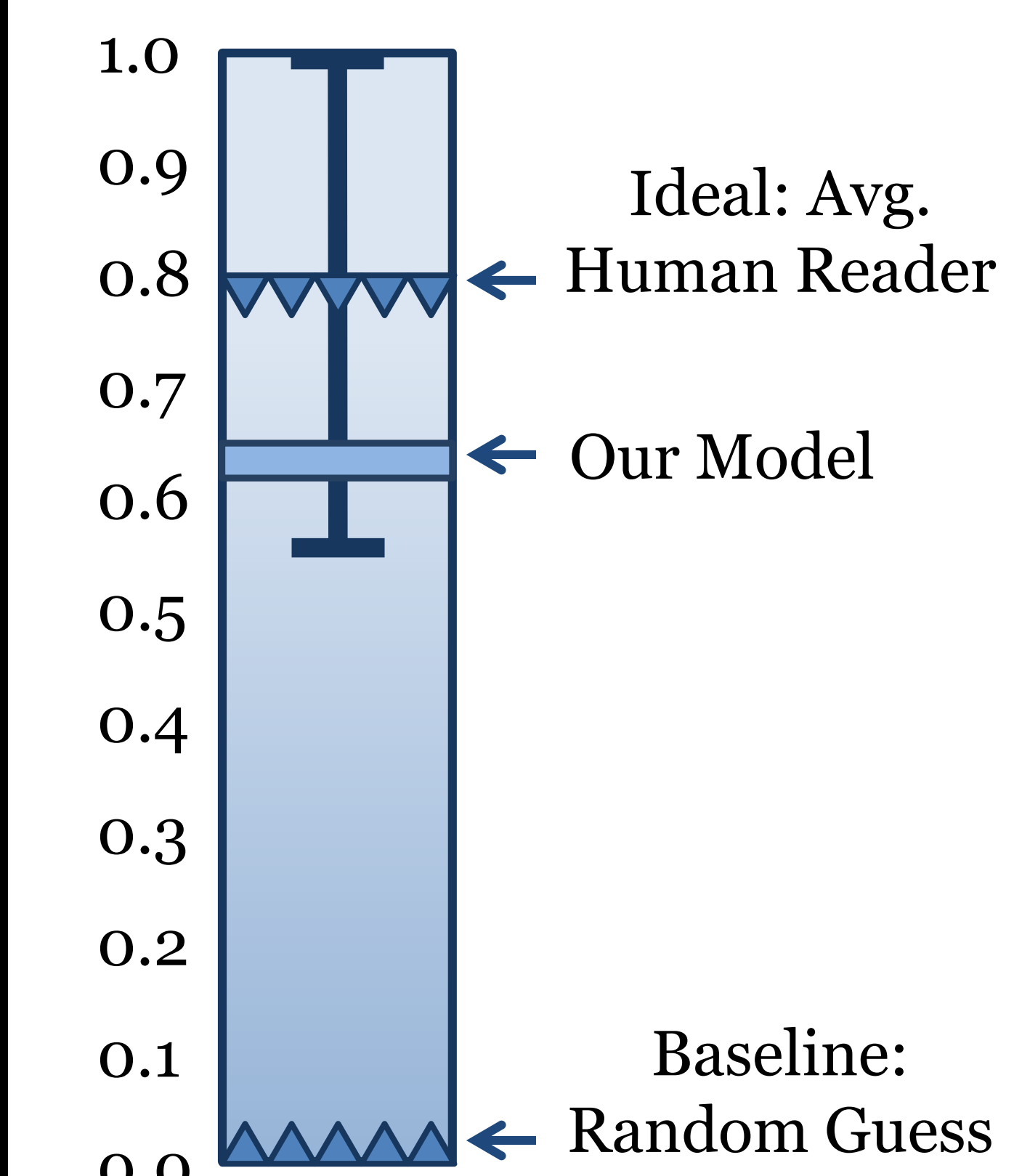
⑦ **Resolution:** Westley succeeds and Humperdinck fails, making this a classic win/lose resolution.

Key
- Executed Action
- Intended but not Executed
- Conflict
- Time

Model Evaluation

Human readers marked all conflicts in 3 short stories. Readers agreed on which conflicts exist (Fleiss's κ = 0.5).

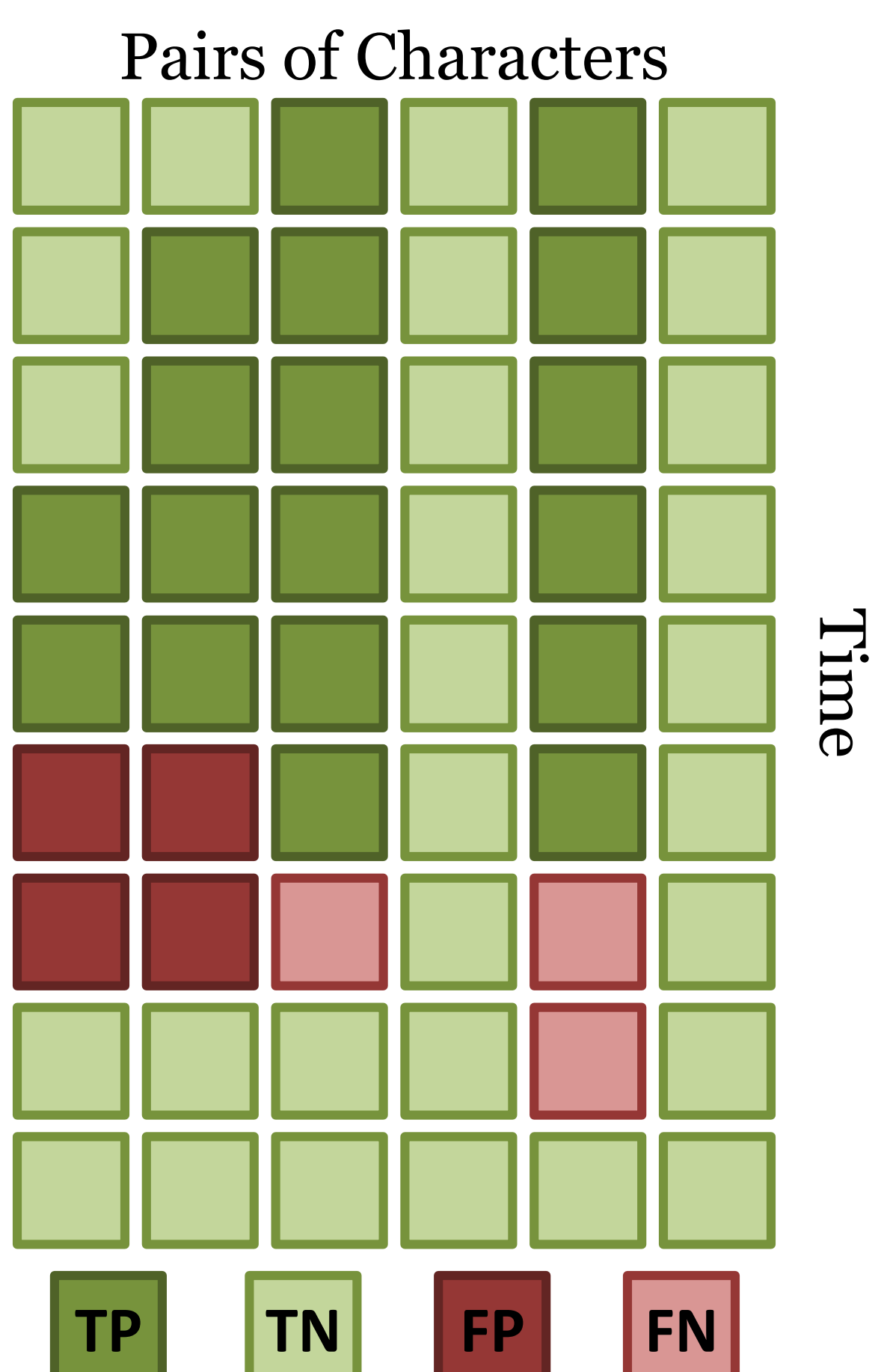### Example Results for Sci-Fi Story:

Predict Conflicts

1.0
0.9
0.8 ← Ideal: Avg. Human Reader
0.7
0.6 ← Our Model
0.5
0.4
0.3
0.2
0.1
0.0 ← Baseline: Random Guess

Recognize Conflicts

Pairs of Characters — Time

TP TN FP FN

Avg. Accuracy: 0.84
Avg. Precision: 0.63

Avg. Accuracy: 0.92
Avg. Precision: 0.77

Dimension Evaluation

Human readers sorted 4 short stories based on the directness, intensity, balance, and resolution of its central conflict. Readers agree on a best ordering.

For directness, balance, and resolution, our formulas predict the most popular ordering. For intensity, our formula predicts the 5th most popular ordering out of 24 possible orderings.

Intensity

Directness   **Balance**   **Resolution**
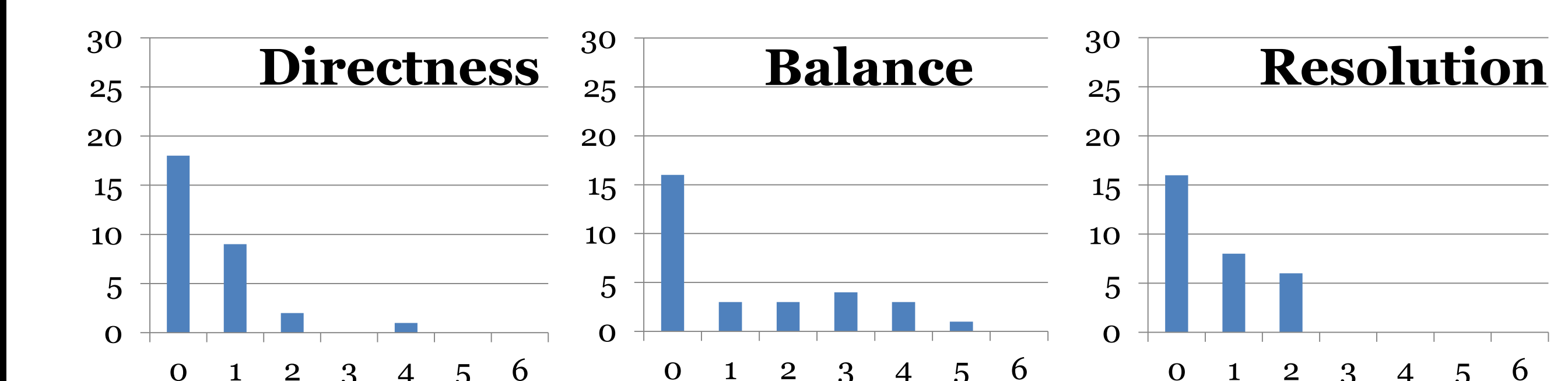
x: # of users   y: τ distance from most popular ordering