

Read Option

Visualizing football play-by-play data

Problem:

Traditional football boxscores capture only a limited scope of a nuanced sport. The numbers only say so much — and often, missing information about style, pace of play and timing of scores can greatly enrich a fan's understanding of why a game unfolded in the way that it did.

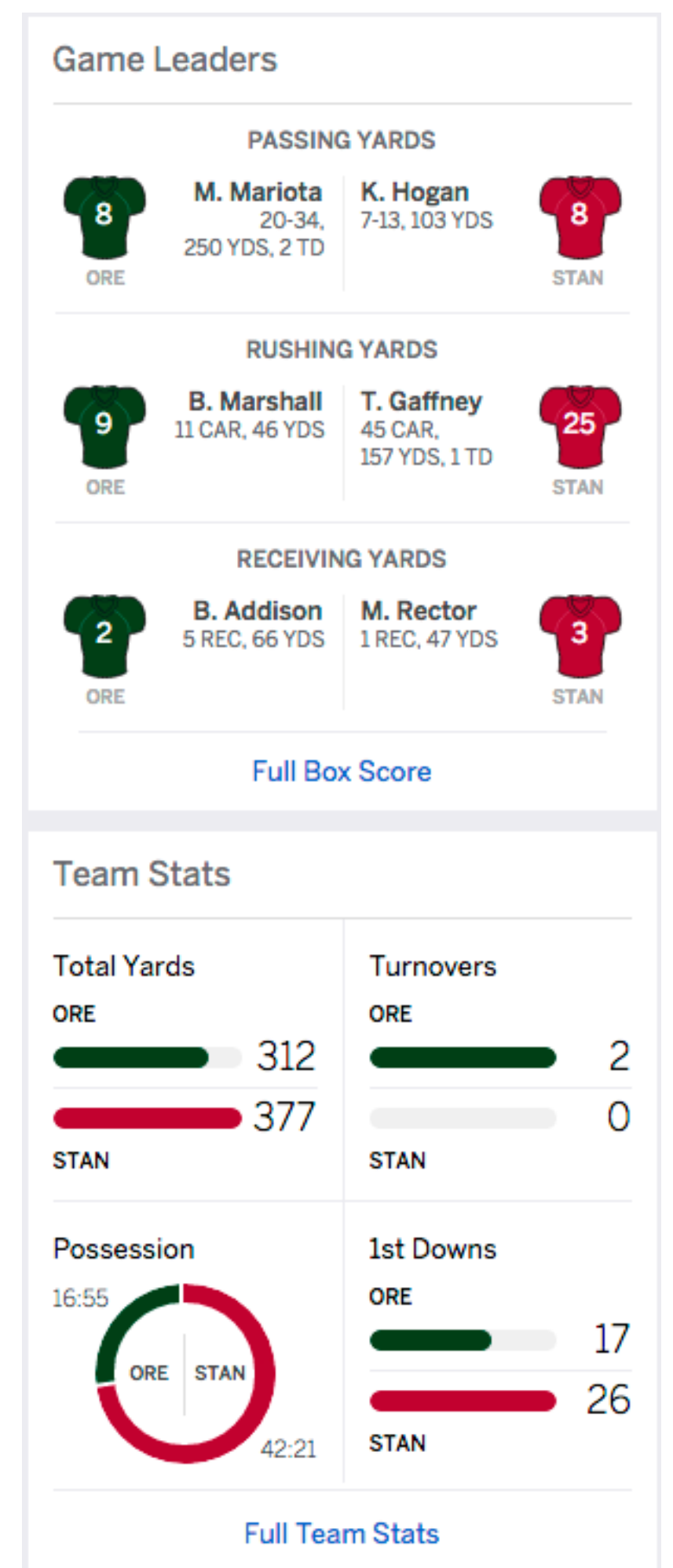
How can we capture those nuances of a football game in an easy-to-read, compact visualization?



Motivation:

Notice how ESPN summarized the 2013 game between Stanford and Oregon in the two images above and to the right. They do what they can with simple graphs and stats, but they (and other industry leaders) haven't made much of an effort to visually capture the play-by-play data, even as styles of play in college football have diverged to the point where such information is crucial to understanding the flow of a game.

Doing so is often difficult because of the scales of data involved — each game has over 100 plays (usually), making it difficult to keep any visualization clean and easy to understand at a quick glance.



(Courtesy of ESPN.com)

Approach:

Some of the elements I wanted to highlight in the data included:

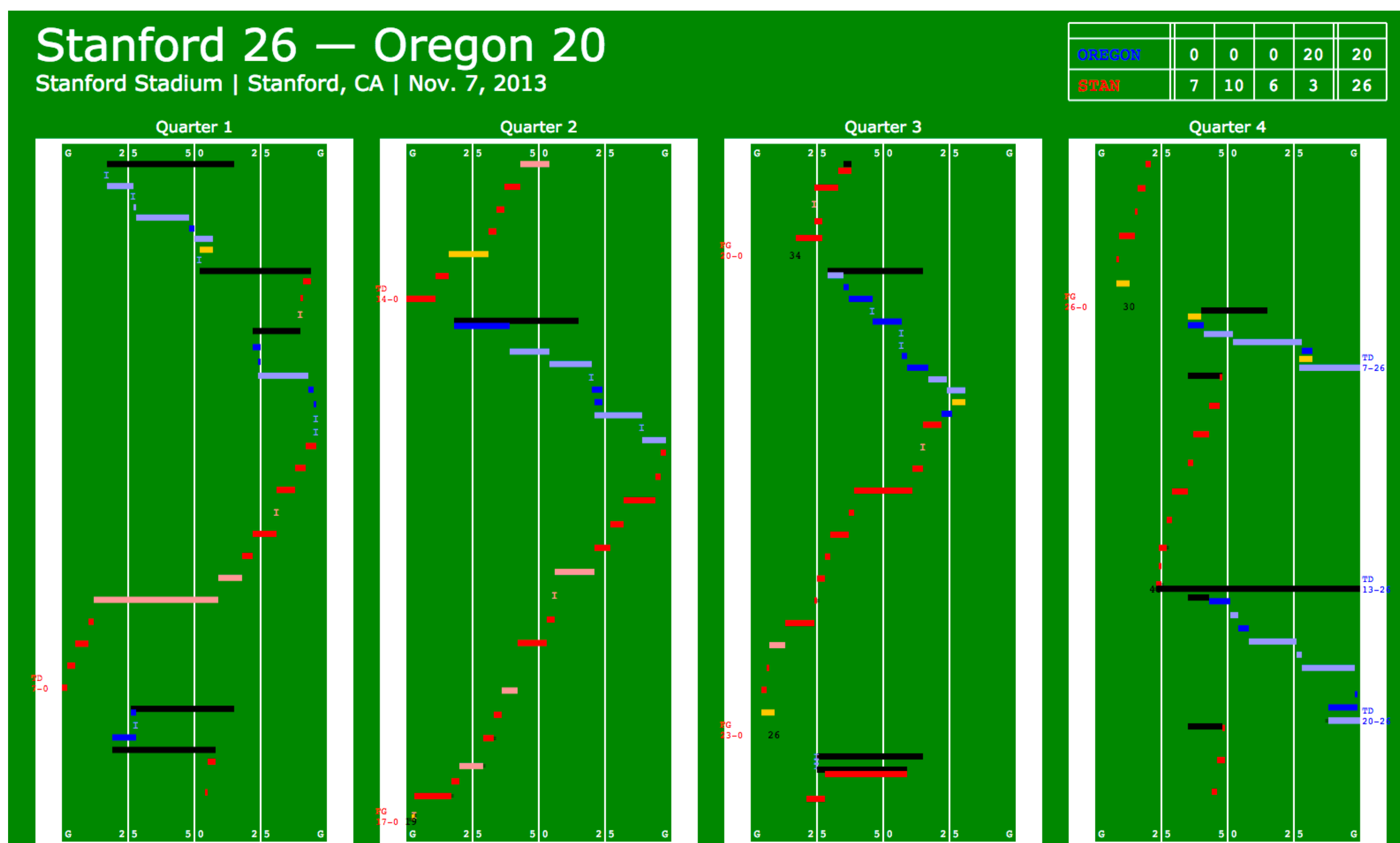
- **Style of play** (Is a team run-heavy? Pass-heavy? Balanced?)
- **Pace of play** (Does a team like to play quickly or slowly?)
- **Explosiveness** (Does a team rely on big plays?)
- **Strategy** (How does a team's approach change when ahead or behind by a lot, or when time is running out?)

Colors and hues used to differentiate run and pass plays for each team.

→ Easy to see play style/strategy

Position used to encode time on y-axis and ball position on x-axis.

→ Pace of play and explosiveness readily deduced



Example:

- Red → Home rush
- Pink → Home pass
- Blue → Road rush
- Teal → Road pass

- Black → Special teams
- Yellow → Penalties

Time runs from top to bottom in each quarter

Stanford preferred running the ball (more red vs. pink) and played slowly (bigger vertical distance between plays)

Future Work:

Interactivity, summary graphs could be added to further reinforce pace of play, style of play conclusions. Integrating individual stats and tracking individual player usage as a function of time could be interesting. (When does a team sub/switch RBs or QBs?)