



Chance and streaks



Political Streaks

- Democrats from 1932-1952
- Republicans from 1896-1912



Which looks more like a “fair coin”?

T T T H T **H H H H H H H** T T H H T H T T T

H T H H T T H T H T H H T T H T T H T H



The “Hot Hand”

People attribute random streaks to something other than chance.

Pervasive: [Google News: hot streak](#)

What is the Hot Hand?

- A player has “a better chance of making a shot after having just made his last two or three shots than he does after having just missed his last two or three shots”
 - 91% Basketball fans agree
- They perceive that streak shooting reflects hotness and not the runs that would be expected by chance.

Tom Gilovich's 1981 study of Philadelphia 76ers

	P(hit)	P(hit/2 hits)	P(hit/2 misses)
Julius Erving	.52	.52	.51
Lionel Hollins	.46	.46	.49
Daryl Dawkins	.62	.58	.73

- For all players, the $p(\text{hit}/\text{hit})$ did not differ from $p(\text{hit}/\text{miss})$.
- The streaks of hits and misses was no different from the number of runs expected by chance.
- The number of “hot” and “cold” nights did not differ from number expected by chance.

Hot Hand

(Gilovich, Vallone, & Tversky, 1984)

- Study 2: Free throw data (1981 Celtics)
- Study 3: Controlled shooting study with college basketball players
 - 100 shots from there “50% zone.”
- No greater percentage of runs, and
 $p(H2/H1) = p(H2/M1)$

- 
- Even if players are streaky, difficult to detect while watching games

- <http://www.rawbw.com/~deano/articles/aa121896.htm>



Hot streaks

- Pervasively wrong

- [Google News: hot streak](#)

- Resources

- [http://thehothand.blogspot.com/](#)