Rainbow

- Idea: Combine six improvements that have been made for DQN

Extension	Idea
Double DQN	Tackle overestimation bias
Dueling DQN	Independence of state-value and action advantage
Prioritized DQN	Sample transitions with more information more frequently
Multi-step learning	use n-Step return
Distributional DQN	Distribution over expected returns
Noisy DQN	Improved exploration over epsilon-greedy

Rainbow

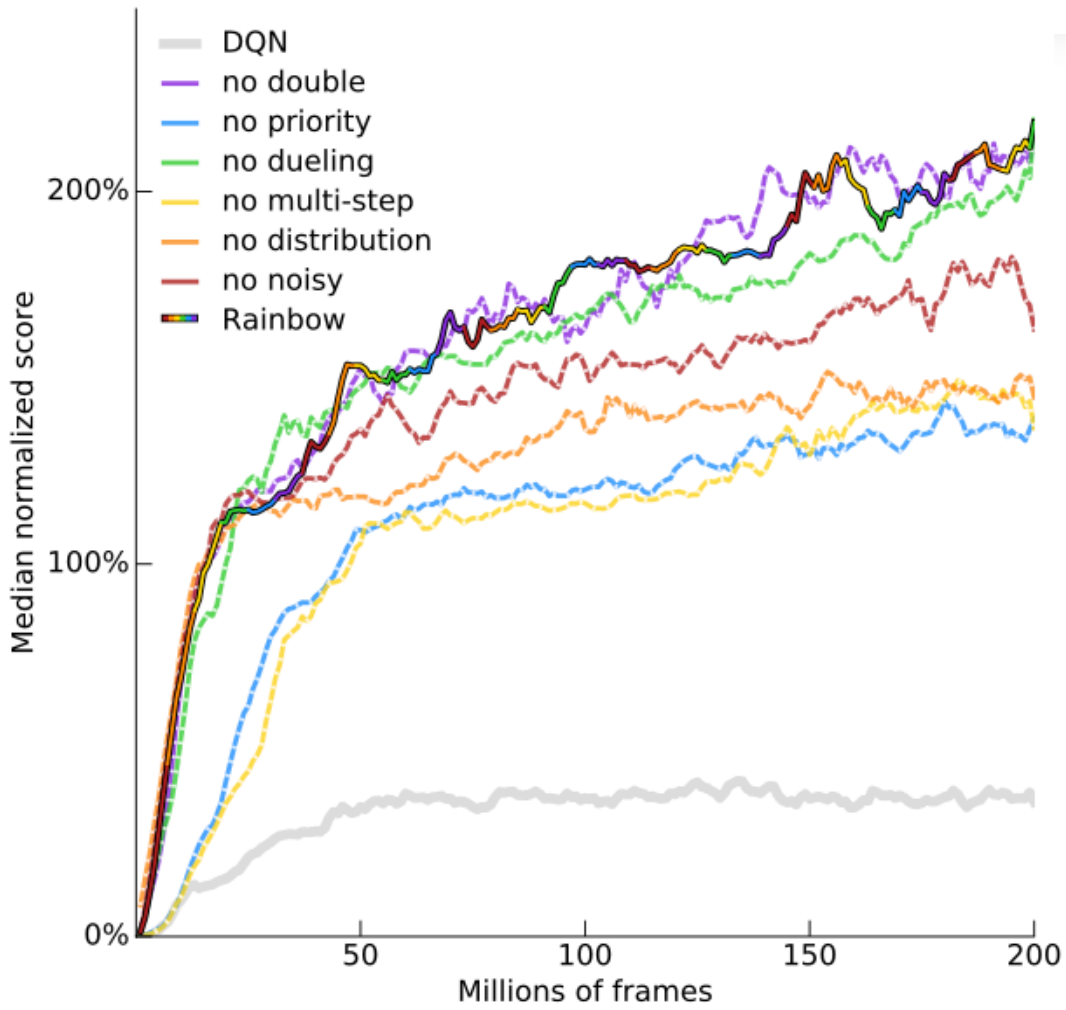

Figure 3: **Median human-normalized performance** across 57 Atari games, as a function of time. We compare our integrated agent (rainbow-colored) to DQN (gray) and to six different ablations (dashed lines). Curves are smoothed with a moving average over 5 points.

Source: https://arxiv.org/pdf/1710.02298.pdf