Abstract: An action of a group on an infinite set is called highly transitive if it is $k$-transitive for every $k \geq 1$. The first examples of highly transitive actions of finitely generated groups go back to B. Neumann’s observations of 1950s. I will survey some results and focus on the constructions based on the inductive enlargement of the point stabilizer. Such an approach (1) makes possible to obtain group actions with exotic properties and (2) significantly extends the class of groups admitting faithful highly transitive actions.