- The path formula in AFA leads to

$\exists \bar{x}\ \forall y_1 \exists q_1\ \forall y_2 \exists q_2\ \forall y_3 \exists q_3 \ldots$

  - obtained by substituting rules into so for reached states
  - allows one to get rid of $q_1 \ldots q_{n-1}$ since they are substituted by the rules
  - the last $\exists q_n$ can be removed by using a big disjunction — finitely many state variables, leading to $\exists \bar{x}\ \forall y$
- dually for the original NFA, giving $\forall \bar{x}\ \exists \bar{y}$
- OK: encode states as data variables
- try to somehow* construct Skolem formulae $\psi(\bar{x}, y)$, i.e., $y = \psi(\bar{x})$, but ψ is not a function.
- One can check usual of $\exists \bar{x}\ \forall \bar{y}\ (\psi(\bar{x}, y) \Rightarrow \varphi(\bar{x}, y))$ or dually $\forall \bar{x}\ \exists \bar{y}\ \psi(\bar{x}, y) \wedge \varphi(\bar{x}, y)$ & validity.
- Compute interpolants on the path formula
  - if $\psi(\bar{x}, y)$ speaks about the history, doing longer steps might be needed
- In the path formula extended with Skolem formulae, substitute parts speaking about values reached at particular levels by interpolants (?), or somehow create sequences of interpolants & skolems -
- check equivalence using the approach of Lida's.

* quantifier elimination? check google for some words?