The Radial Kernel (RBF)

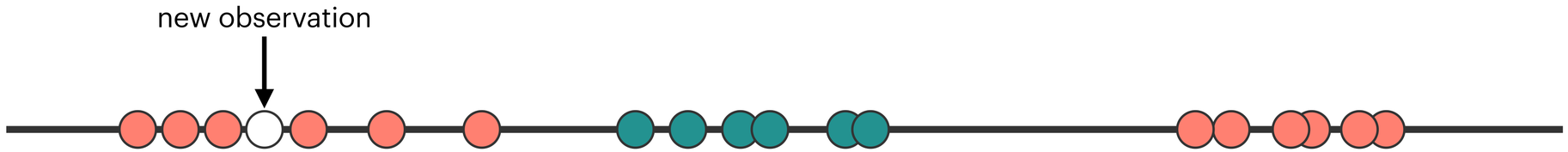
The **Radial Kernel**

$$K(a, b) = e^{-\gamma}(a - b)^2$$

projects to **infinite dimensional** space
works similar to nearest neighbors classifier

the amount of influence one observation has on another is a function of the squared distance

γ scales the squared distance to determine the strength of influence (determined by **cross validation)**



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we can use the Polynomial Kernel to get the intuition
behind how Radial Kernel works in infinite dimensions

$$K(a,b) = (a \cdot b + r)^d$$

set $r = 0 \implies (a \cdot b)^d = a^d \cdot b^d$

set $d = 1 \implies (a) \cdot (b)$