

$\Omega_n(X)$

"cobordisms over X"

Top \rightarrow Grp

functorial:

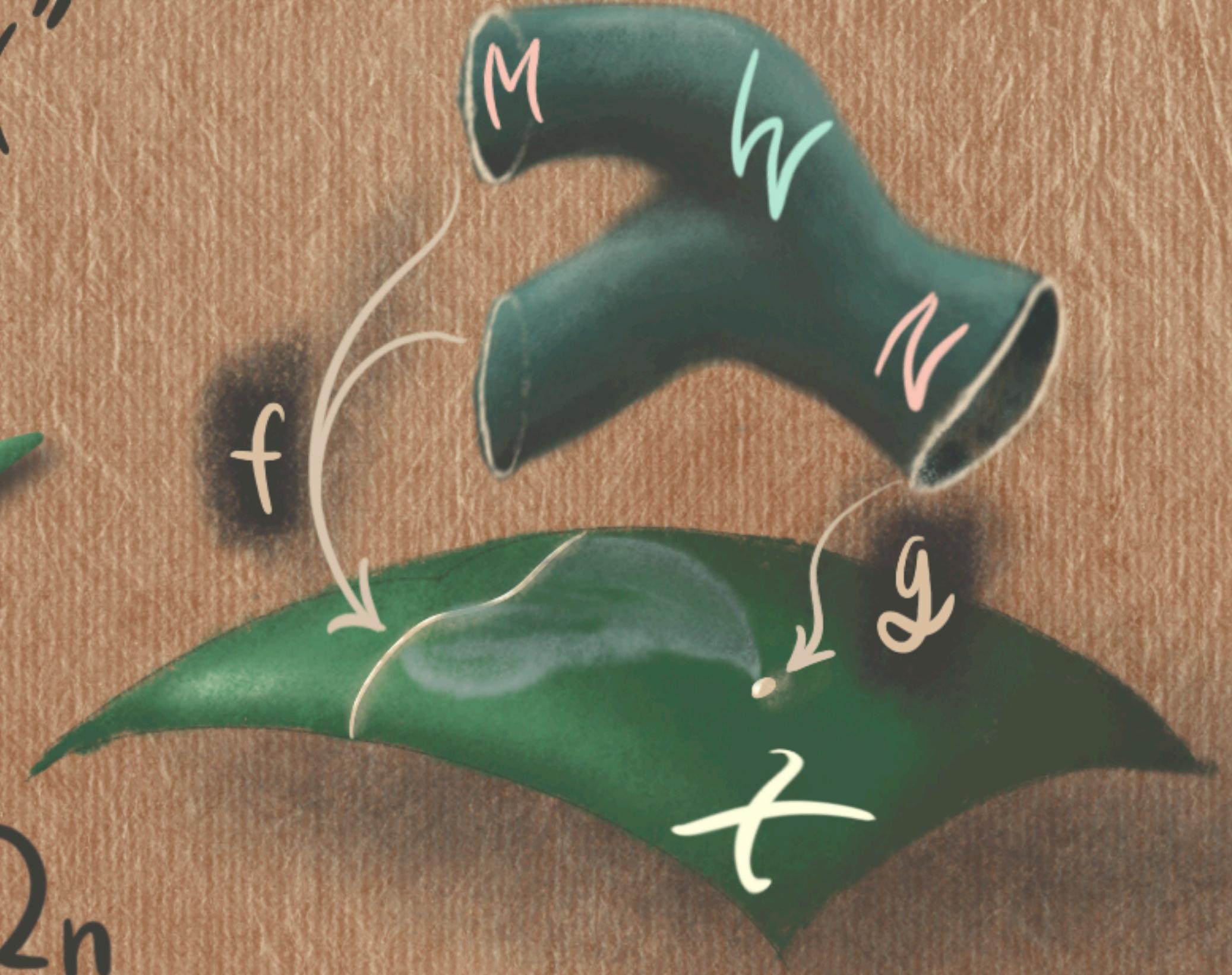


homotopy invariant



$$\Omega_n(pt) = \Omega_n$$

$\Omega_n(X)$ is bigger than $\Omega(pt)$
↳ module over $\Omega(pt)$



Generalized Homology Theory!!

Eilenberg- functoriality homotopy Exactness Excision
Steenrod
axioms:

✓ ✓

cobordisms over pairs (X, A)

Dimension: $\times \Omega_*(\text{pt}) \neq 0$

Proof: find spectrum...

suspension isomorphism

$$\begin{array}{ccc} W & \xrightarrow{\quad} & \Sigma W \\ \downarrow & & \downarrow \\ X & \xrightarrow{\quad} & \Sigma X \end{array} \quad \Omega_n(X) \cong \Omega_{n+1}(\Sigma X)$$

