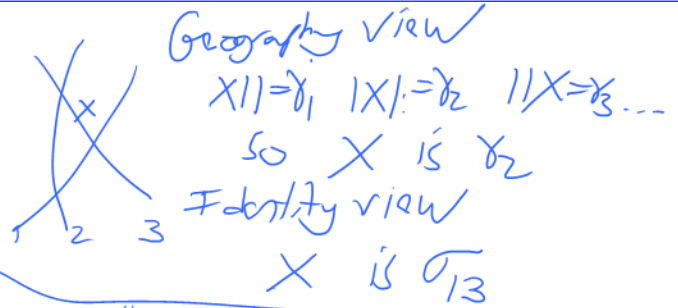




# Geography vs. Identity

Thanks for inviting me to the *Topology* session!

**Abstract.** Which is better, an emphasis on where things happen or on who are the participants? I can't tell; there are advantages and disadvantages either way. Yet much of quantum topology seems to be heavily and unfairly biased in favour of geography.



Geographers: <sup>provided categories</sup> Monoidal categories, associators, Skein modules, much/most of Quantum topology.

Identity: <sup>meta-</sup> monoids, meta Hopf algebras, etc. [unab/...]

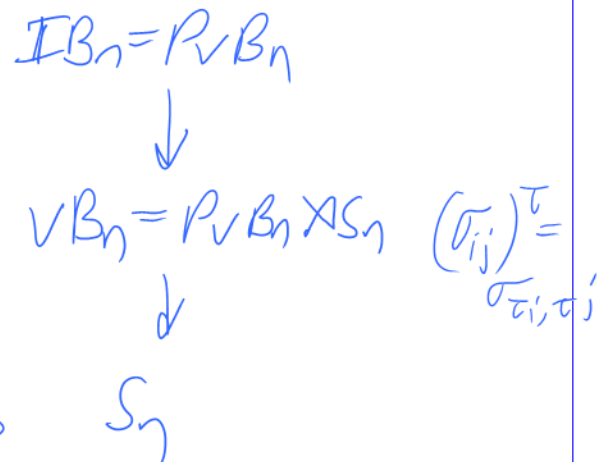
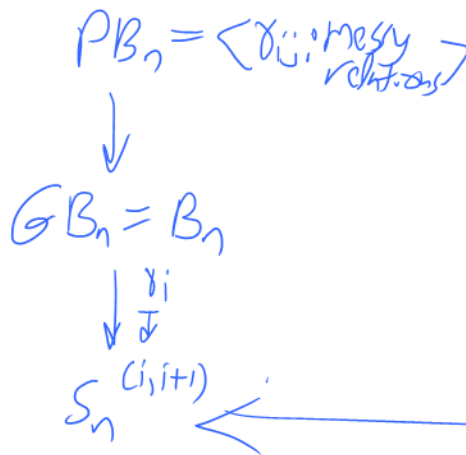
Braids:

$$GB_n = \langle \sigma_1, \dots, \sigma_n : \sigma_i \sigma_j = \sigma_j \sigma_i, \sigma_{i+1} \sigma_i \dots \rangle$$

$$IB_n = \langle \sigma_{ij} : \sigma_{ij} \sigma_{kl} = \sigma_{kl} \sigma_{ij} \rangle$$

$$\sigma_{ij} \sigma_{ik} \sigma_{jk} = \dots \rangle$$

which is better? It depends who you are and what you want to do.



$$(23)(13)(12) = (13)(12)$$

$$(12)(13)(23) = (13)(12)$$