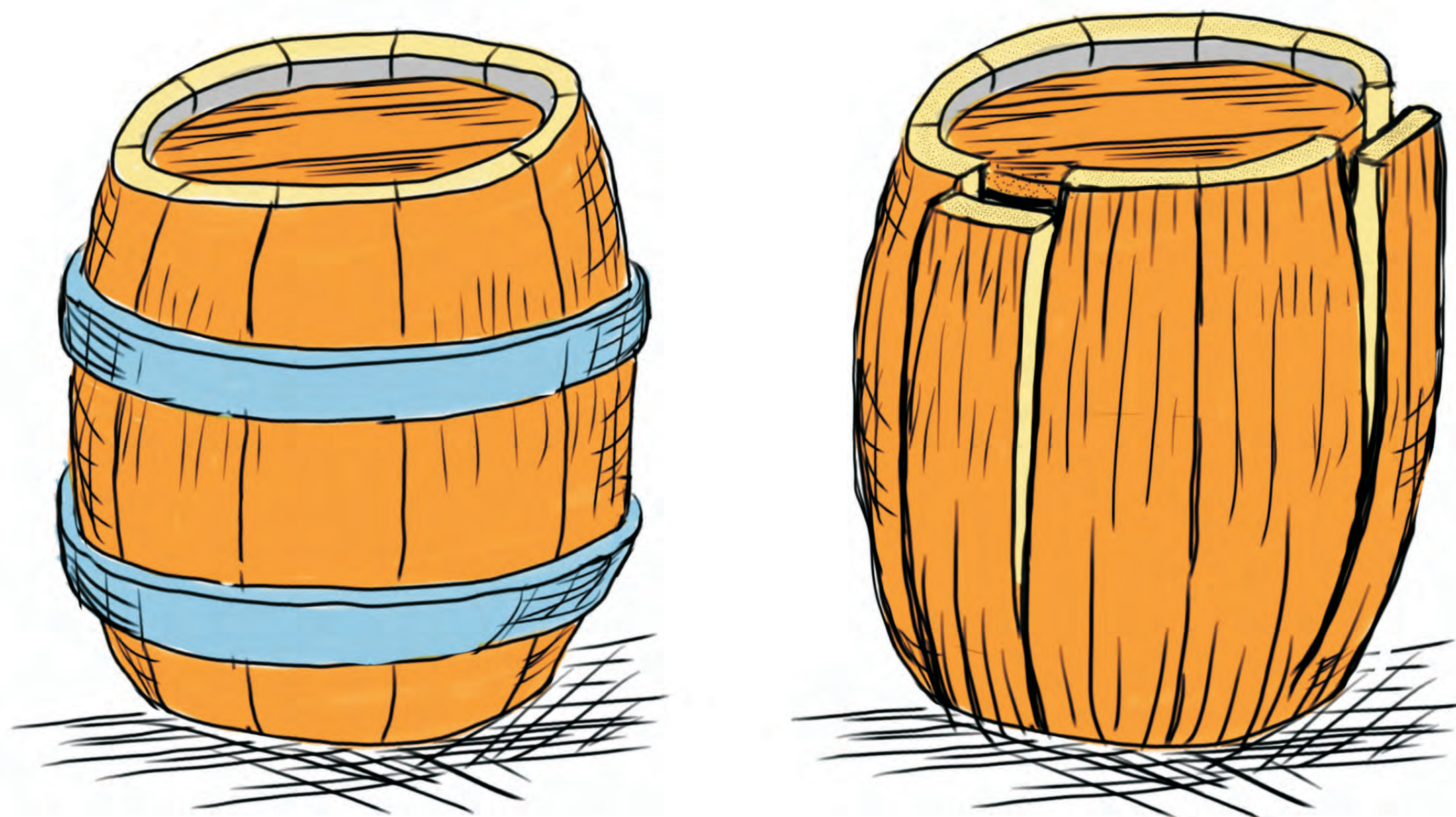
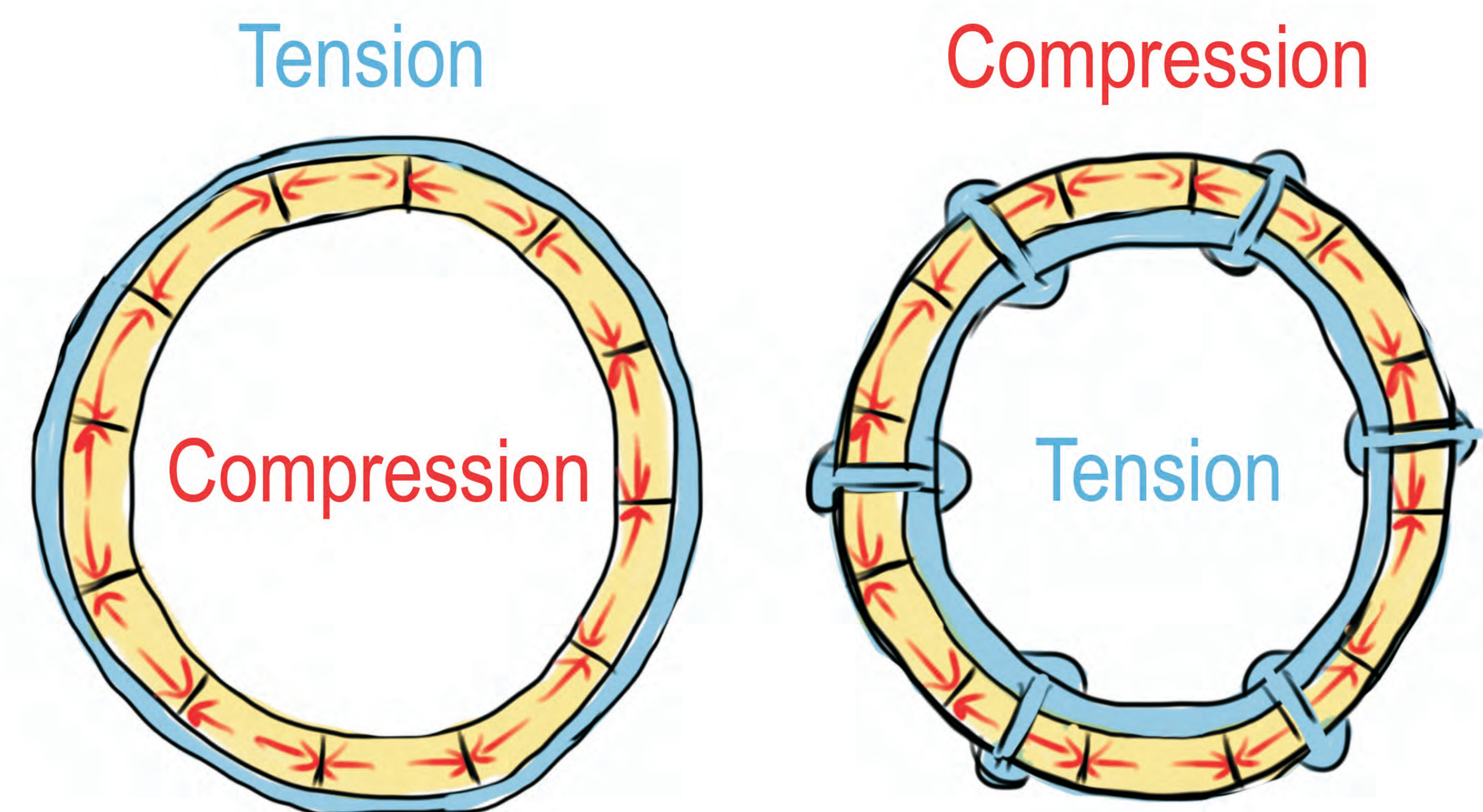


Segmentation of Pre-Stressed Composites by Failure of Tensile Belts

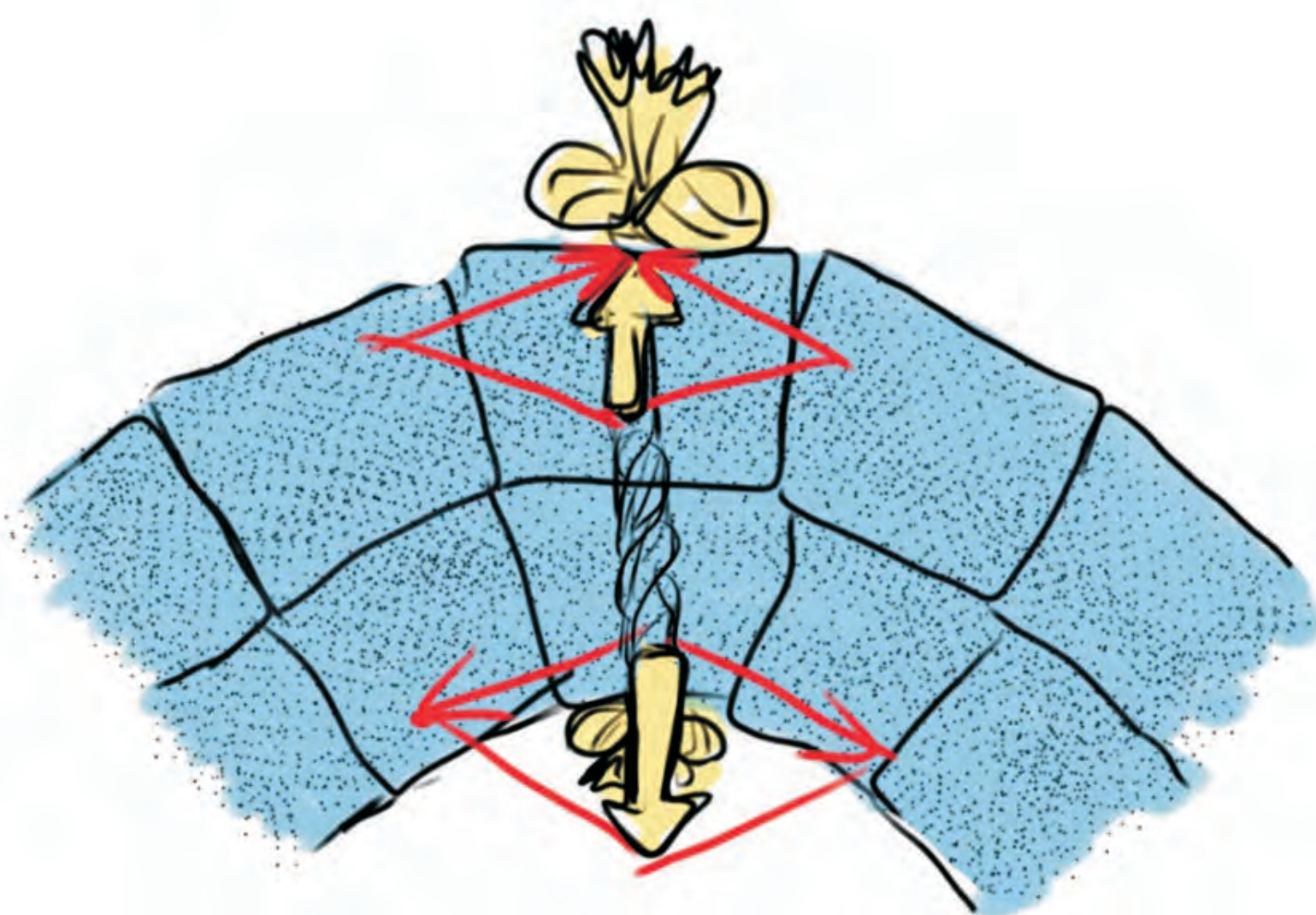
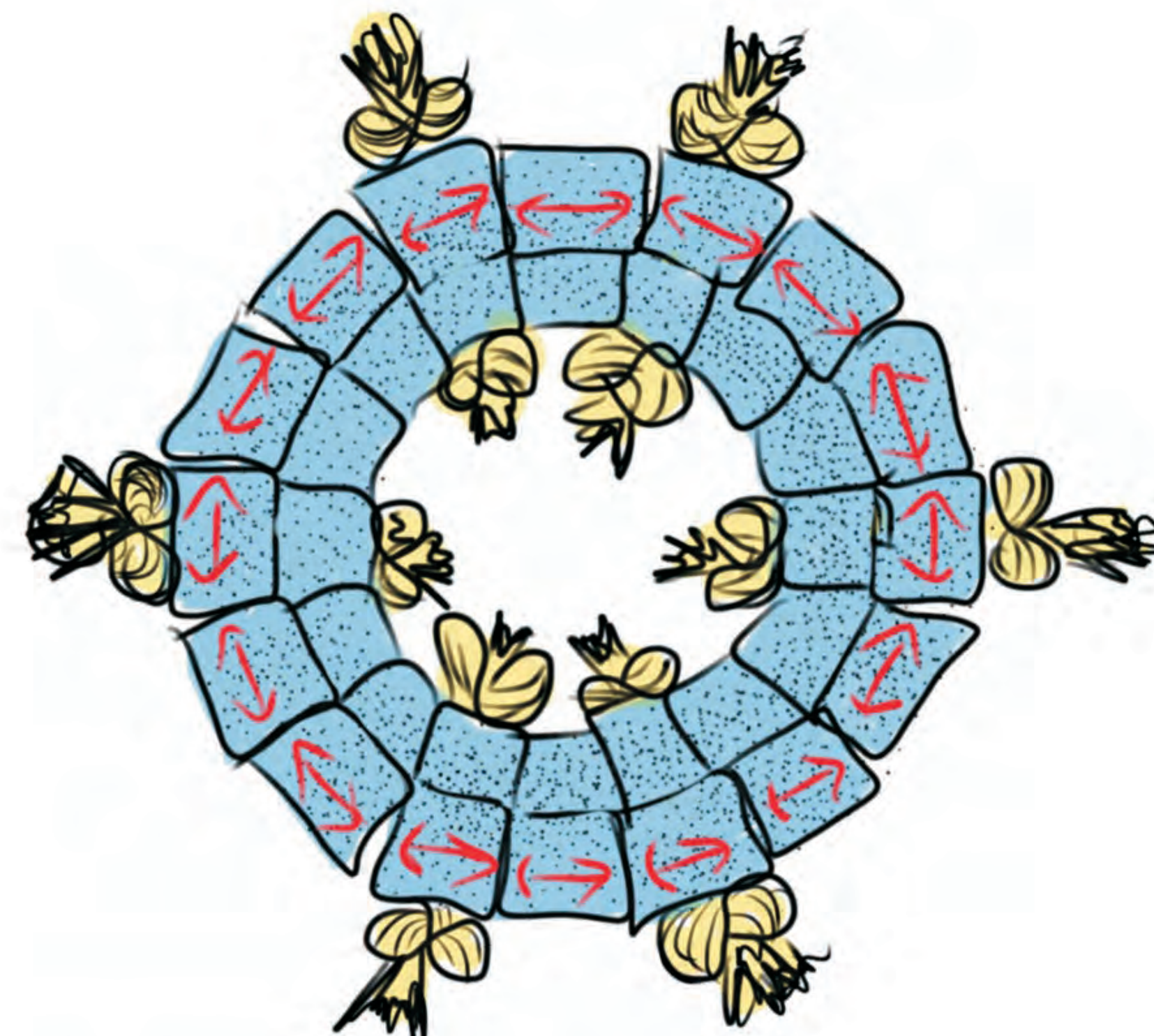
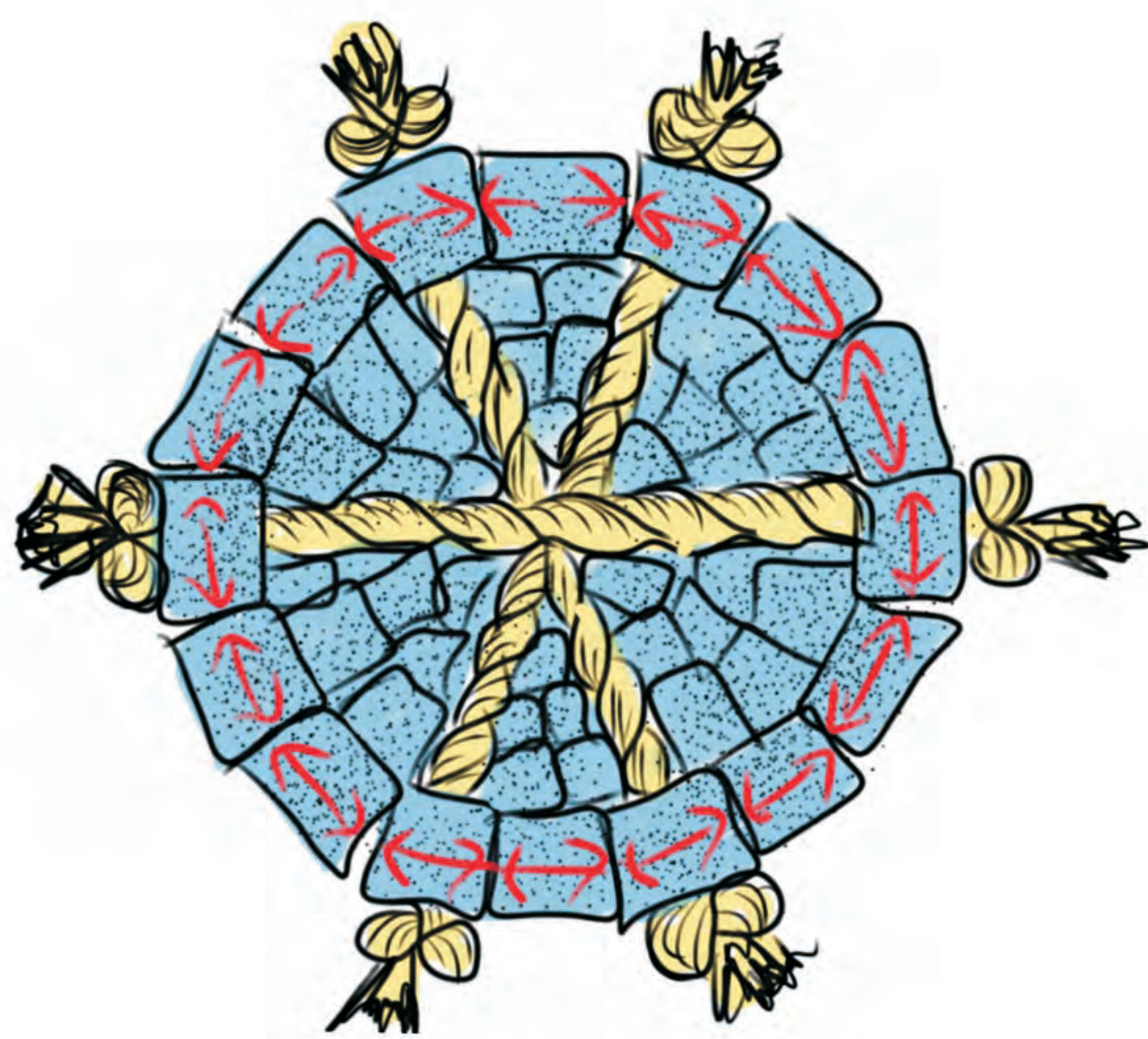
C. Mattheck, K. Bethge, I. Tesari, K. Weber



Pre-compressed staves of a barrel fall apart, if tensile belt (hoop) is removed.



External tensile belt can be replaced by an internal belt, screwed to the boards.



Wood rays in trees interlock growth stress compressed external sapwood with internal wood loaded in circumferential tension.

Result: Decay can erode internal tensile belts and wood rays, initiating segmentation of the tree.