cardinals.1 ZFC: A Milestone

With the addition of Well-Ordering, we have reached the final theoretical milestone. We now have all the axioms required for **ZFC**. In detail:

Definition cardinals.1. The theory **ZFC** has these axioms: Extensionality, Union, Pairs, Powersets, Infinity, Foundation, Well-Ordering and all instances of the Separation and Replacement schemes. Otherwise put, **ZFC** adds Well-Ordering to **ZF**.

ZFC stands for *Zermelo–Fraenkel* set theory with *Choice*. Now this might seem slightly odd, since the axiom we added was called "Well-Ordering", not "Choice". But, when we later formulate Choice, it will turn out that Well-Ordering is equivalent (modulo **ZF**) to Choice (see **??**). So which to take as our "basic" axiom is a matter of indifference. And the name "**ZFC**" is entirely standard in the literature.

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Bibliography

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