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**