▸ PAOLO LIPPARINI, *Ordinal compactness.*
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We extend to ordinal numbers the more usual compactness notion defined in terms of cardinal numbers.

DEFINITION 1. Suppose that X is a nonempty set and that τ is a nonempty family of subsets of X. If α and β are nonzero ordinal numbers, we say that (X, τ) is $[\beta, \alpha]$-*compact* if and only if the following holds.

Whenever $(O_\delta)_{\delta \in \alpha}$ is a sequence of members of τ such that $\bigcup_{\delta \in \alpha} O_\delta = X$, then there is $H \subseteq \alpha$ with order type $< \beta$ and such that $\bigcup_{\delta \in H} O_\delta = X$.

When α and β are both cardinals, X is a topological space, and τ is the topology on X, we get back the classical cardinal compactness notion. See [1] for references.

We show that ordinal compactness is a much more varied notion than cardinal compactness. We prove a great deal of results of the form "Every $[\beta, \alpha]$-compact space is $[\beta', \alpha']$-compact", for various ordinals β, α, β' and α'. Usually, we are able to furnish counterexamples showing that such results are the best possible ones.

[1] J. E. VAUGHAN, *Some properties related to [a,b]-compactness*, ***Fundamenta Mathematicae***, vol. 87 (1975), pp. 251-260.