

**Remark 3.2.19.** *[01M] This wording is commonly used: "let  $I$  be a non-empty set of indices, and  $A_i$  a family of sets indexed by  $i \in I$ "; this, in axiomatic theory, should be written as "let  $I$  be a non-empty set, let  $X$  be a set, and  $A : I \rightarrow \mathcal{P}(X)$  a function; we will write  $A_i$  instead of  $A(i)$ ". (With this writing we have that  $A_i$  are all subsets of  $X$ ).*