

go away and be lost in space. This force, then, which we call the *force* of gravity, is a real cause.

(210.) We have next to consider the laws which regulate the action of these our primary agents; and these we can only arrive at in three ways: 1st, By inductive reasoning; that is, by examining all the cases in which we know them to be exercised, inferring, as well as circumstances will permit, its amount or intensity in each particular case, and then piecing together, as it were, these *disjecta membra*, generalizing from them, and so arriving at the laws desired; 2dly, By forming at once a bold hypothesis, particularizing the law, and trying the truth of it by following out its consequences, and comparing them with facts; or, 3dly, By a process partaking of both these, and combining the advantages of both without their defects, viz. by assuming indeed the laws we would discover, but so generally expressed, that they shall include an unlimited variety of particular laws;—following out the consequences of this assumption, by the application of such general principles as the case admits;—comparing them in succession with all the particular cases within our knowledge; and, lastly, *on this comparison*, so modifying and restricting the general enunciation of our laws as to *make the results agree*.

(211.) All these three processes for the discovery of those general elementary laws on which the higher theories are grounded, are applicable with different advantage in different circumstances. We might exemplify their successive application to the case of gravitation; but as this would rather lead into a disquisition too particular for the objects of this discourse, and carry us too much into the domain of technical mathematics, we shall content ourselves with remarking, that the method last mentioned is that which mathematicians (especially such as have a considerable command of those general modes of representing and reasoning on quantity, which constitute the higher analysis) find the most universally applicable, and the most efficacious; and that it is applicable with especial advantage in cases where subordinate