described in this paper is such a theory [1]. Its physical content is that all quantum Hall steps are equivalent and that fractional quantum Hall plateaus disappear with increasing disorder by narrowing continuously, in rough analogy with the closing of a superconducting gap with increasing temperature. In addition, the plateaus are nested, so that the complete destruction of any plateau implies the previous destruction of all those deriving from it hierarchically [2-4].

It is now well established that the ordinary quantum Hall effect, and by inference the fractional effect, does not occur in the absence of disorder [5-6]. The zero-resistance state and quantized Hall conductance are constant over a range of gate voltages or magnetic field strengths because electrons or holes added to the system are immobilized in localized states. Our present understanding of the role of localization in the fractional quantum Hall effect is by analogy with the ordinary effect [7]. Charge added or removed from the sytem we understand to be trapped as an excess of localized quasielectrons or quasiholes. This analogy is <u>quantitatively</u> consistent, in that the accuracy of the fractional quantization is so high. The gauge sum rule [5,7] says that the quantum of Hall conductance is related in a fundamental way to the charge of the "particles" localized at the Fermi surface, and there is good theoretical reason to expect the quasiparticle charge 1/3e, 2/5e,... to be as exact a quantum of nature as e. Our present understanding of the formation of the hierarchy is also by analogy. We believe we understand the formation of the 1/3 state by interacting electrons, and we also believe that the fractionally charged elementary excitations of the 1/3 state can do anything electrons can do, including condense into a second-generation 1/3 state. Furthermore there are experimental indications that the Hall conductances of the hierarchical states may also be "exact" quanta.