Title:	Viability Selection and Sexual Conflict in Simultaneous Hermaphrodites
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Abstract:	Theoretical modeling in Simultaneous Hermaphrodites has gotten surprisingly little attention especially when it comes to viability selection and sexual con ict owing to the fact that these are di cult to quantify due to a lack of sexual dimorphism. Despite many articles trying to make reasonable predictions about how such models would work and the various forces that could be at play, not many attempts have been made to construct and analyze such models. In this thesis, we have looked at a population of simultaneous hermaphrodites consisting of both sexuals and asexuals. In the plant kingdom, most asexual plants retain some form of reduced male sexual function. Here we study the e ects of viability selection and sexual con ict on the population. In the viability selection model, we see that stronger selection makes it di cult for sexuals to go towards xation and extends the range for the existence of unstable polymorphic equilibrium. We proceed to study the dynamics of the population under sexual con ict where we derive equations for polymorphism and stable xation of sexuals and asexuals. We also derive the conditions under which male and female optima go towards xation. We nd that it is very improbable for asexuals to invade a sexual population and there is a bias towards female optima in simultaneous hermaphrodites when sexuality is recessive. Simultaneous Hermaphrodites are better o investing in female gametes. We found a quantity f(μ) which is analogous to the μ in the Joshi-Moody Model(1995).
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