On descent theory for Selmer complexes and applications to p-adic Birch and Swinnerton-Dyer conjectures

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It is known that the classical p-adic Birch and Swinnerton-Dyer conjecture (formulated by Mazur-Tate-Teitelbaum) follows from the Iwasawa main conjecture up to a p-adic unit. (This result is due to Perrin-Riou and Schneider.) We prove analogous results in the setting of Heegner points. To be more precise, we prove that anticyclotomic p-adic Birch and Swinnerton-Dyer conjectures (formulated by Bertolini-Darmon and Agboola-Castella) follow from the Heegner point main conjecture up to a p-adic unit. Our proof is given by developing descent theory and applying it for Nekovar's Selmer complexes. Our method also gives a new proof of the result of Perrin-Riou and Schneider.