A Comprehensive Set of Approaches to Maintain Control of Emerging Technologies

A variety of factors suggest that technological development is slipping beyond human control. These include, but are not limited to, the increasing reliance on complex systems whose activities is difficult to predict or fully control, the accelerating pace of technological innovation accompanied by a pacing problem (ineffective lagging oversight), and the plethora of environmental, public health, and other societal challenges arising from individual research trajectories. An intelligence explosion (technological singularity) functions as the symbolic, yet speculative, representation of a total loss of human control. Technological unemployment is, however, the more immediate theme that vivifies in the public's mind the possible loss of control over their personal lives, and fear over the prospects for their children. Whether human destiny is indeed being surrendered to technological possibilities and economic imperatives, or can just appear to be, are two issues difficult to disentangle. Nevertheless, any comprehensive collection of approaches that reasserts control over our technological destiny will need to address both factual and perceptual considerations. A truly comprehensive approach will function on many levels to 1.) defuse assumptions that can drive technological innovation beyond a humanly manageable pace 2.) recognize inflection points and take concerted action before they disappear 3.) reinforce core values, such as the responsibility of a human or corporate agent for any technology deployed 4.) integrate societal values and impact into the design process for new technologies 5.) decouple critical infrastructure from overly complex systems 6.) monitor when major technological thresholds are about to be crossed 7.) coordinate the activates of the various stakeholders 8.)

engage the public in a full conversation about goals for society in light of emerging possibilities, and 9.) put in place effective yet flexible and adaptive oversight mechanisms (anticipatory, soft, and hard governance). Some, but not all, of those elements have been elucidated in past presentations by myself and others. This presentation will introduce themes central to my forthcoming book, *A Danger Master: How to Keep Technology From Slipping Beyond Our Control* (Basic Books), which will have been released two weeks before GET.