New Frontiers The Origins and Content of New Work, 1940–2018

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We address three core questions about the hypothesized role of newly emerging job categories ('new work') in counterbalancing the erosive effect of task-displacing automation on labor demand: what is the substantive content of new work; where does it come from; and what effect does it have on labor demand? To address these questions, we construct a novel database spanning eight decades of new job titles linked both to US Census microdata and to patent-based measures of occupations’ exposure to labor-augmenting and labor-automating innovations. We find, first, that the majority of current employment is in new job specialties introduced after 1940, but the locus of new work creation has shifted—from middle-paid production and clerical occupations over 1940–1980, to high-paid professional and, secondarily, low-paid services since 1980. Second, new work emerges in response to technological innovations that complement the outputs of occupations and demand shocks that raise occupational demand; conversely, innovations that automate tasks or reduce occupational demand slow new work emergence. Third, although flows of augmentation and automation innovations are positively correlated across occupations, the former boosts occupational labor demand while the latter depresses it. Harnessing shocks to the flow of augmentation and automation innovations spurred by breakthrough innovations two decades earlier, we establish that the effects of augmentation and automation innovations on new work emergence and occupational labor demand are causal. Finally, our results suggest that the demand-eroding effects of automation innovations have intensified in the last four decades while the demand-increasing effects of augmentation innovations have not.