



ANITA BORG INSTITUTE
FOR WOMEN AND TECHNOLOGY

Climbing the Technical Ladder: Obstacles and Solutions for Women in technology

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Climbing the Technical Ladder

- In partnership with the Clayman Institute for Gender Research at Stanford University
- 1795 survey responses from 7 Silicon Valley high-tech companies
- 27 interviews
- What are the barriers facing technical women in the high-tech industry? What happens at the mid-level? What are solutions?
 - Majority of respondents identify as software or hardware engineers
- Today's focus: How do the findings inform the entrepreneurship and intrapreneurship of women engineers and computer scientists?



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Demographic Profile

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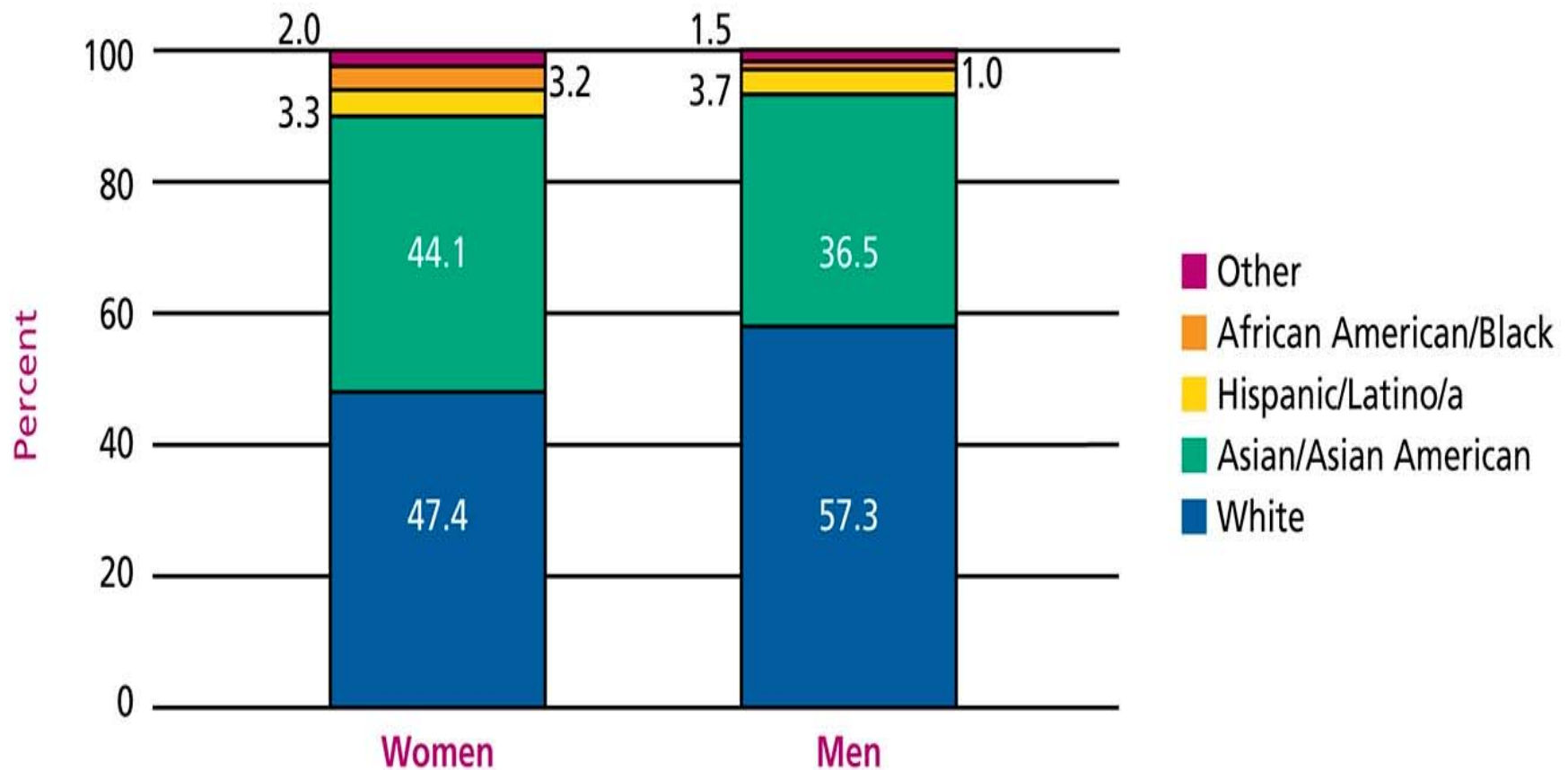
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Chart 1e. The Technical Ladder: Distribution of Female and Male Respondents Across Rank Levels



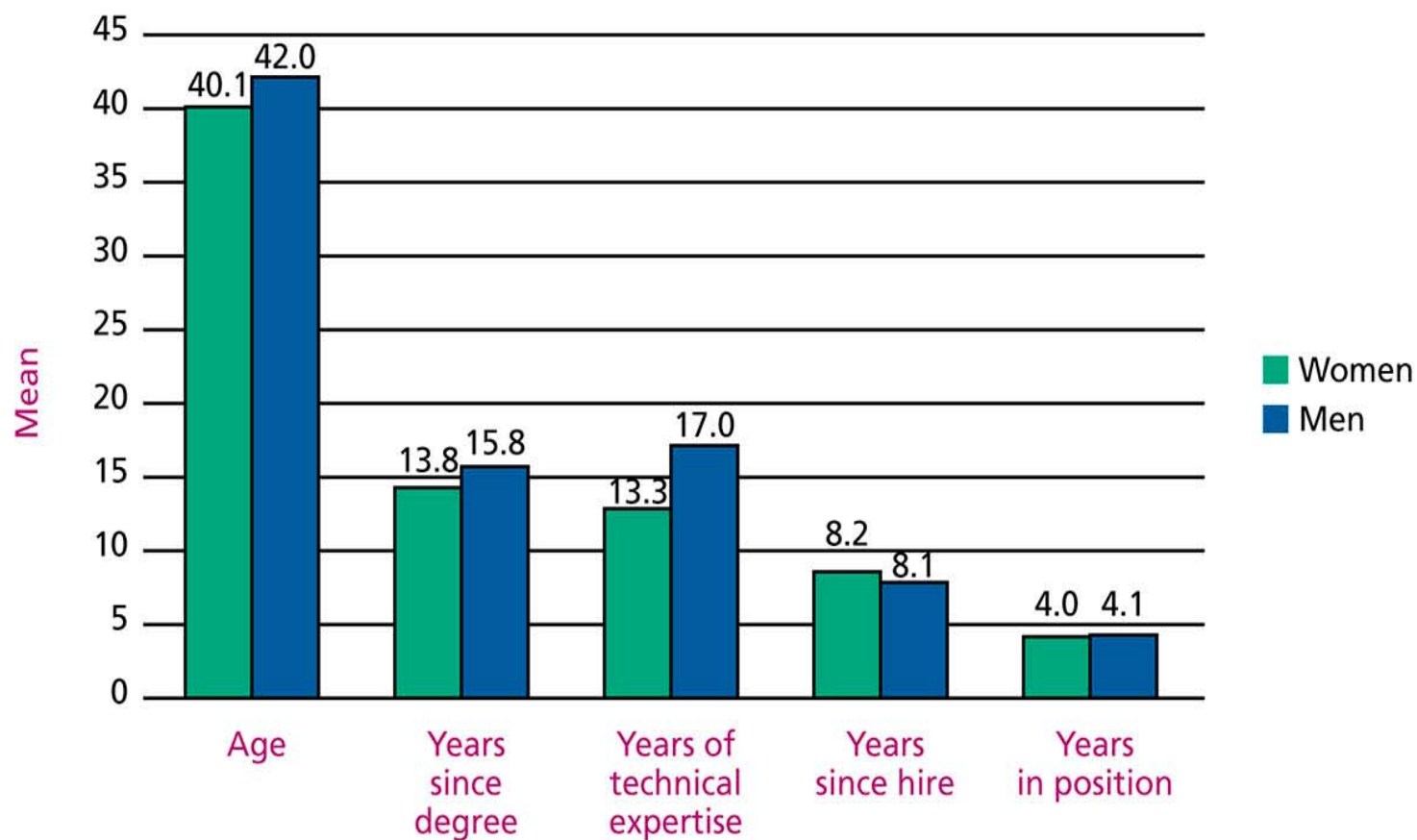
A global workforce

Chart 1a. Race/Ethnicity of Technical Workforce, by Gender



(see method note in Appendix B)

Chart 1b. Mean Age and Experience of Technical Workforce, by Gender



(see method note in Appendix B)

Chart 1c. Highest Degree Earned Among Technical Men and Women

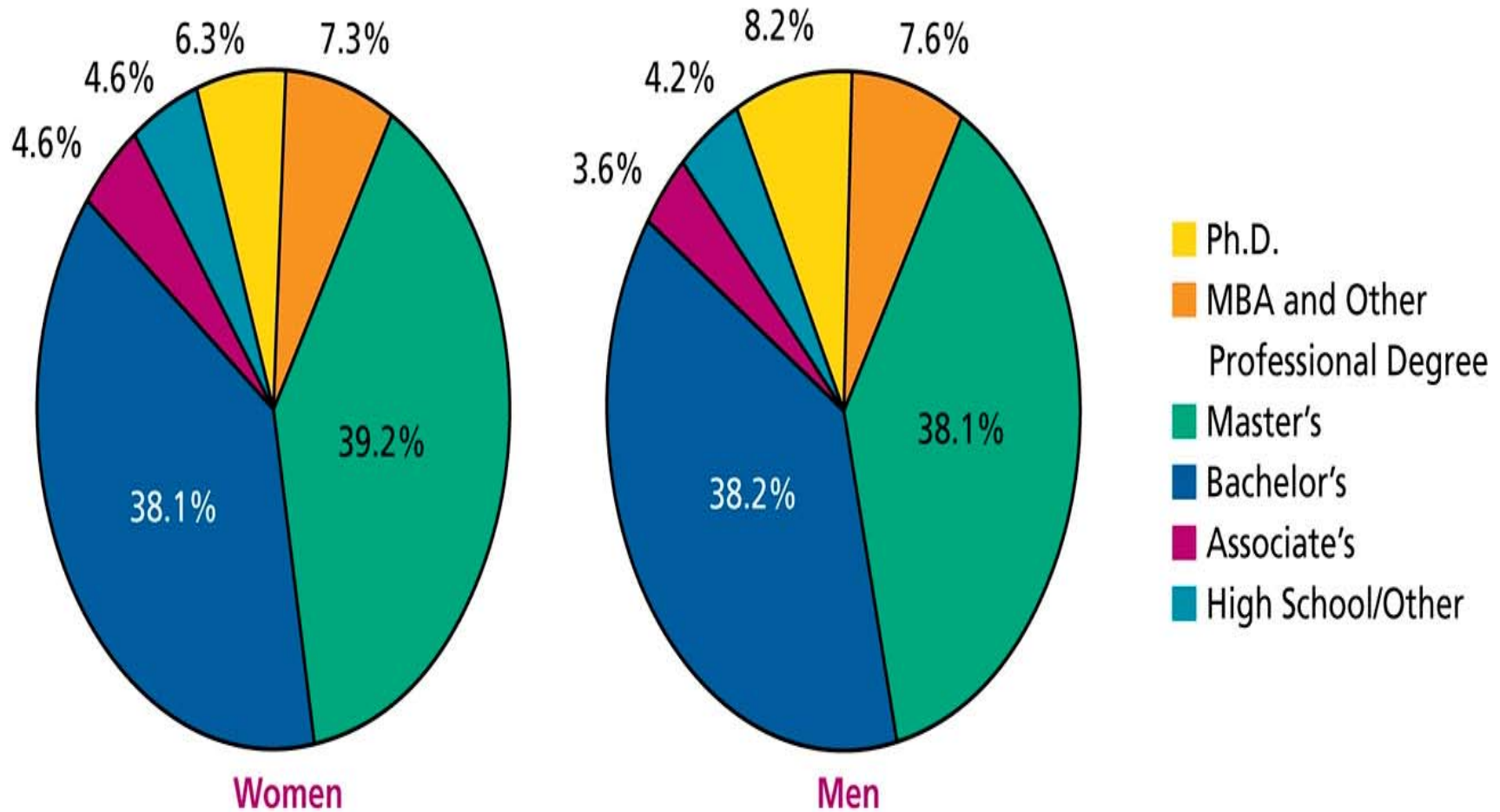


Chart 1d. Field of Highest Degree Among Technical Workers, by Gender



(see method note in Appendix B)



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Work values and Perceptions of Success

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Work values

Chart 3f. Work Values of Mid-Level Technical Women and Men

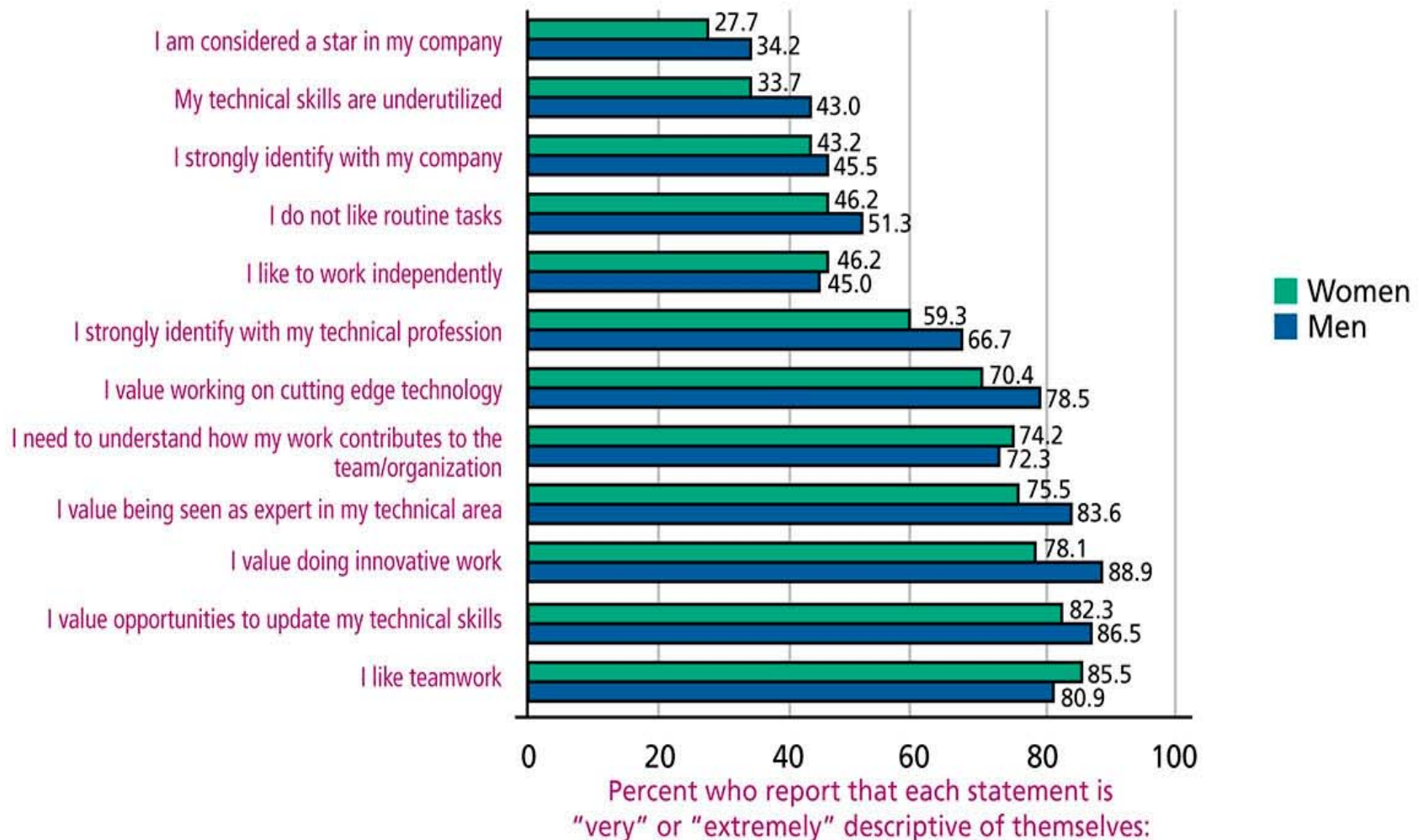


Chart 3a. Attributes of Successful People in Technology According to Mid-Level Technical Workers: the "Top 7" versus "Hacker" Characteristics

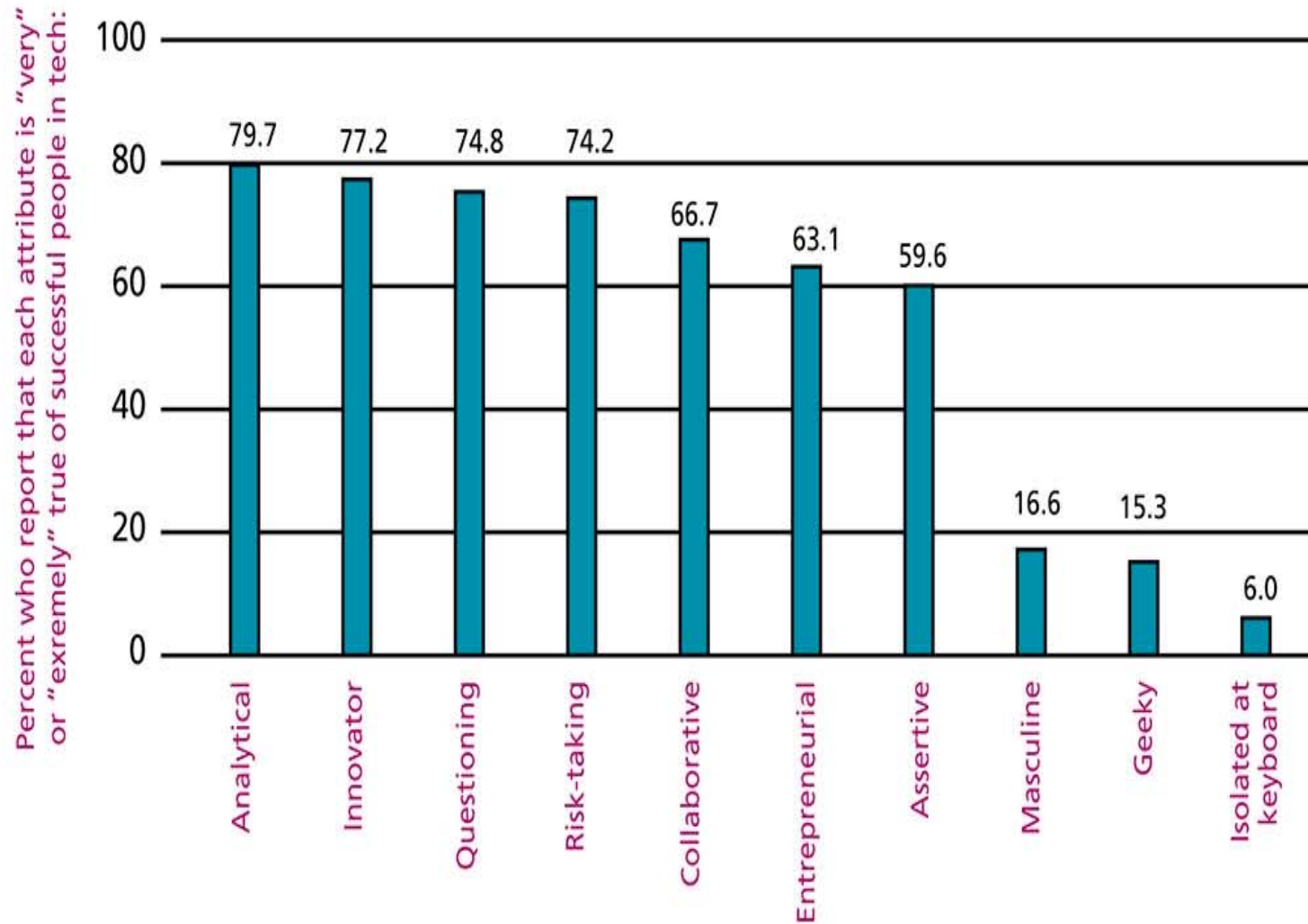
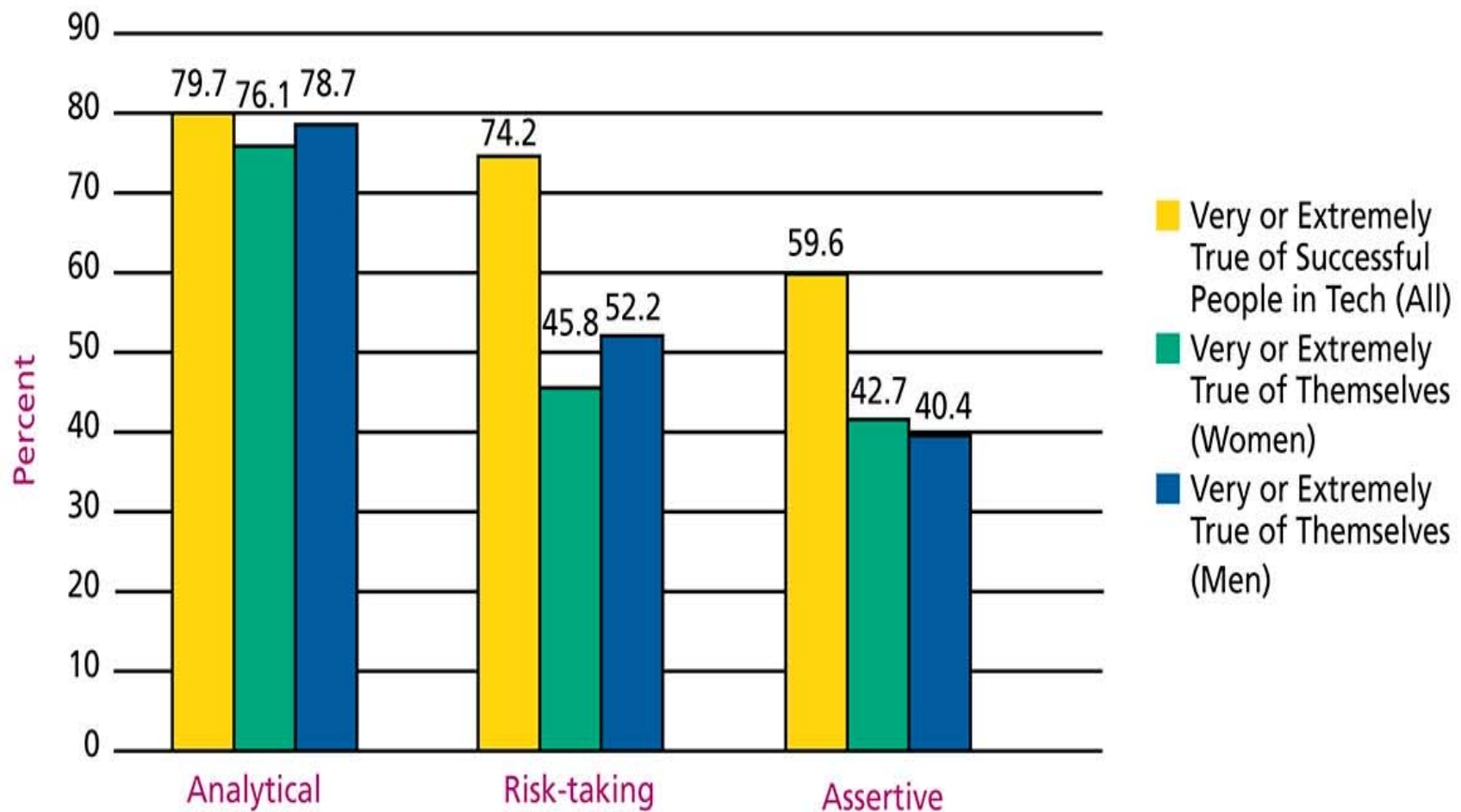


Chart 3b. Self-Perceptions of Mid-Level Technical Women and Men on Select "Top 7" Attributes: Analytical, Risk-Taking, and Assertive



Where technical women's self perceptions differ...

Chart 3c. Self-Perceptions of Mid-Level Technical Women and Men on Select "Top 7" Attributes: Innovator, Questioning, Entrepreneurial, and Collaborative

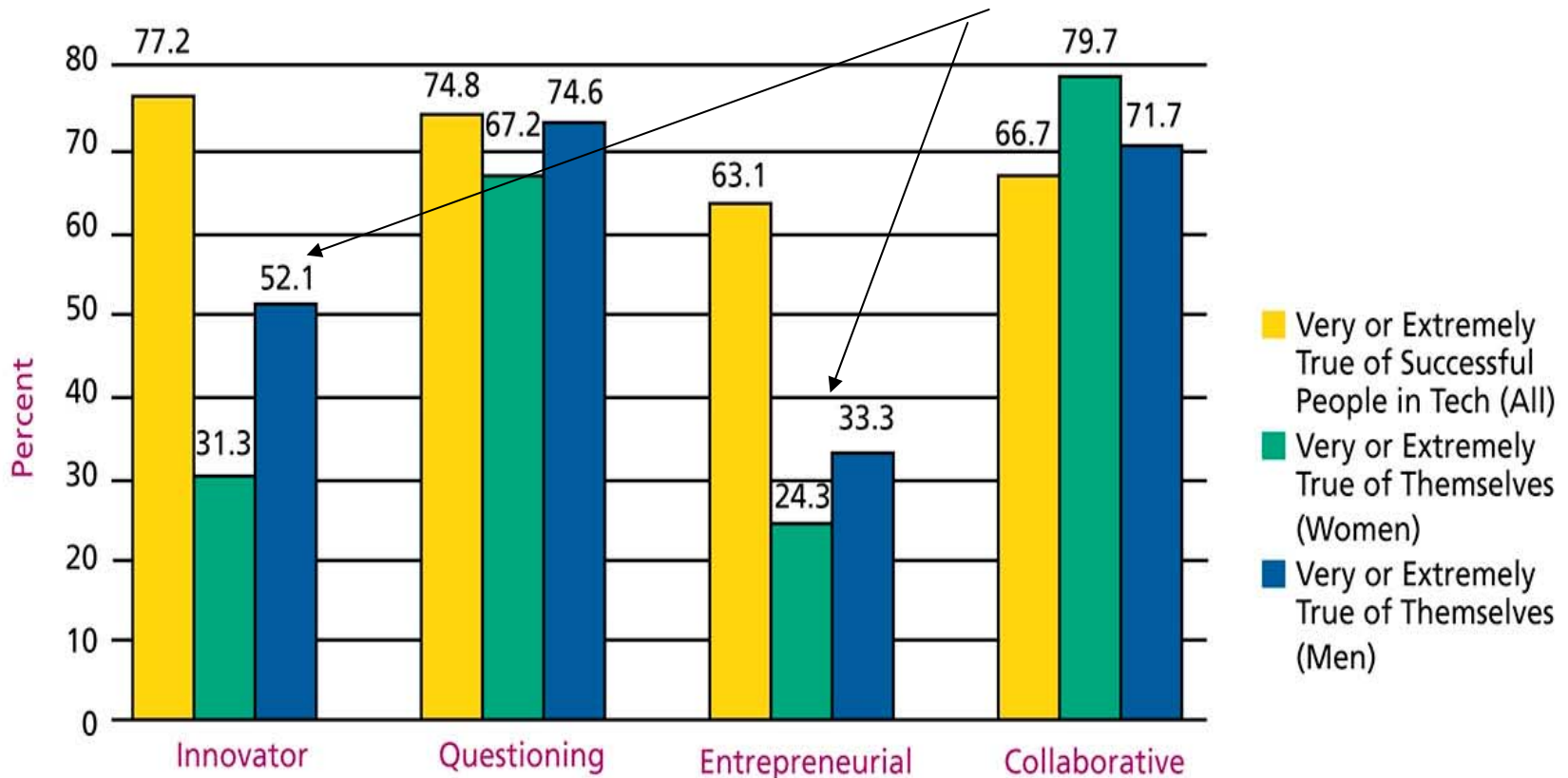
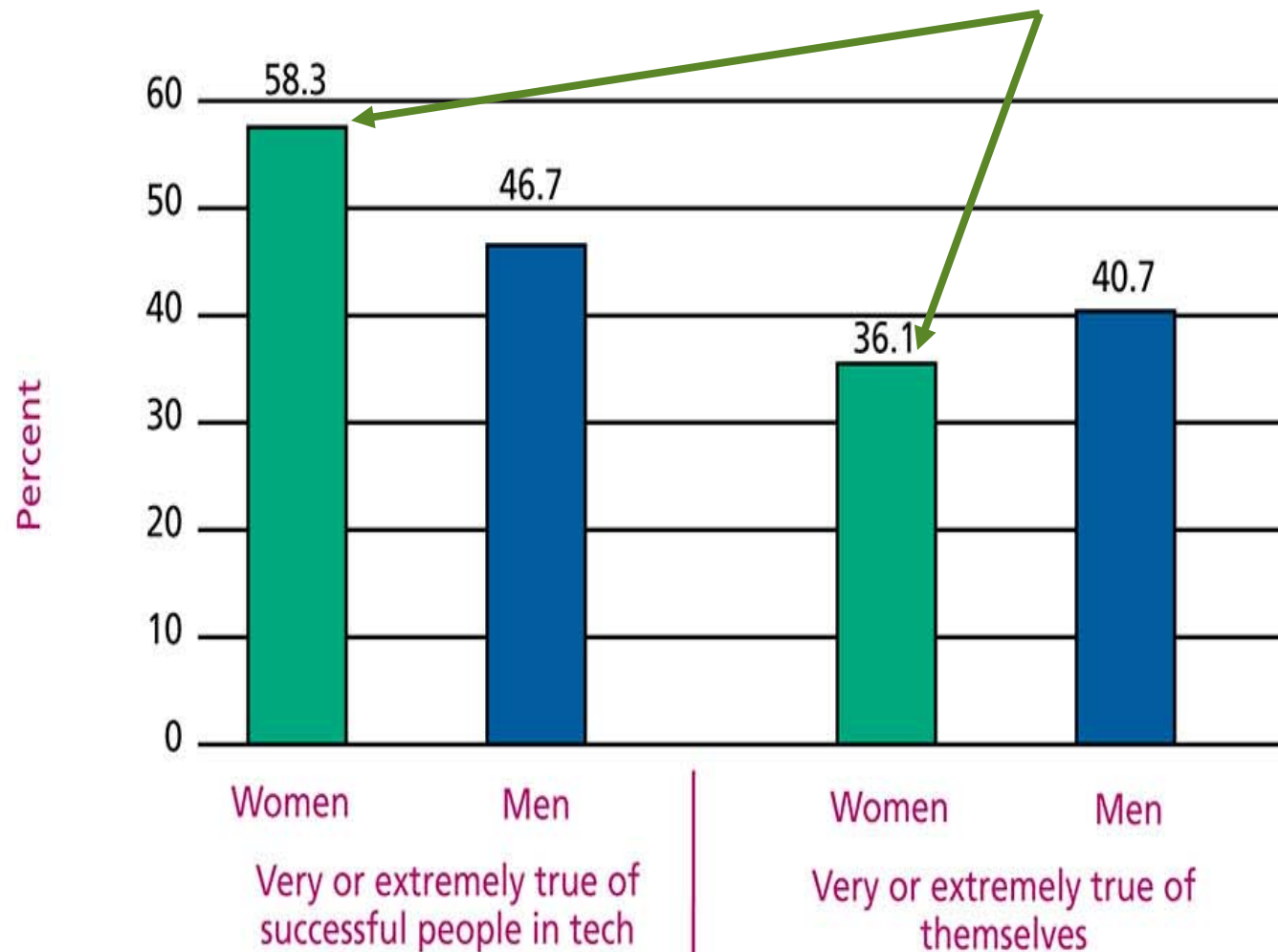
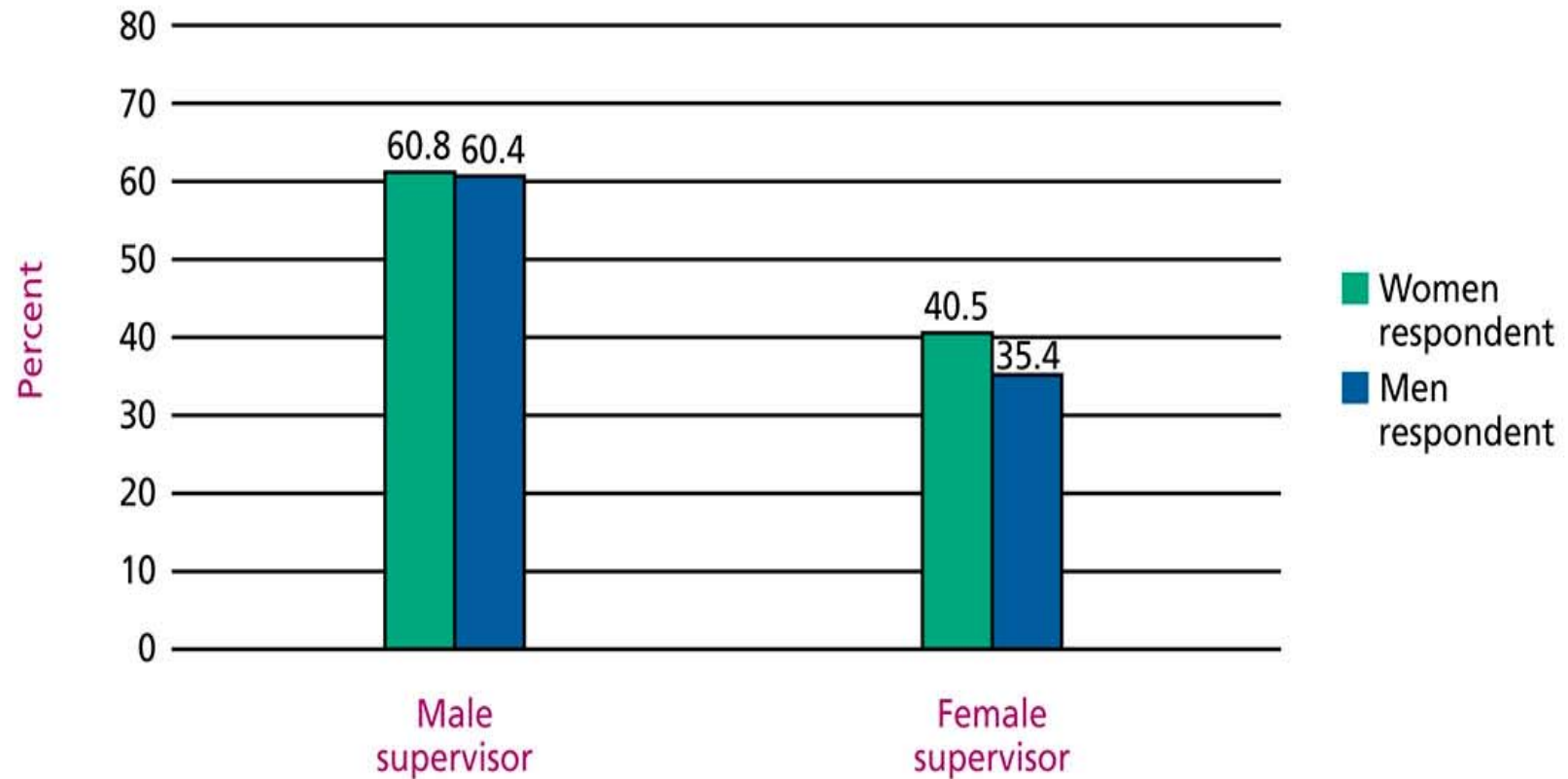


Chart 3d. "Long Working Hours": Attribute of Success Versus Self-Perception Among Mid-Level Technical Men and Women



If perceived technical competence is necessary to advancement, women are at disadvantage...

Chart 4e. Percentage of Mid-Level Technical Workers Who Agree that Their Supervisor Has Strong Technical Skills, by Gender of Respondent and Gender of Supervisor



Unconscious bias

“I notice that women in technical positions are not always taken very seriously or are not as respected as their male colleagues.” – mid-level technical woman

“I’ve had a couple of experiences where I’ve worked with guys and it was very hard for them to take me seriously until I proved myself” – high-level technical woman

Perceptions of success

- Discrepancy between women's self perceptions and what they believe is necessary to be successful in high tech:
 - Long working hours
 - Being entrepreneurial
 - Being an “innovator”
 - Combining family and success seems unlikely – this is especially true for technical women...



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Family

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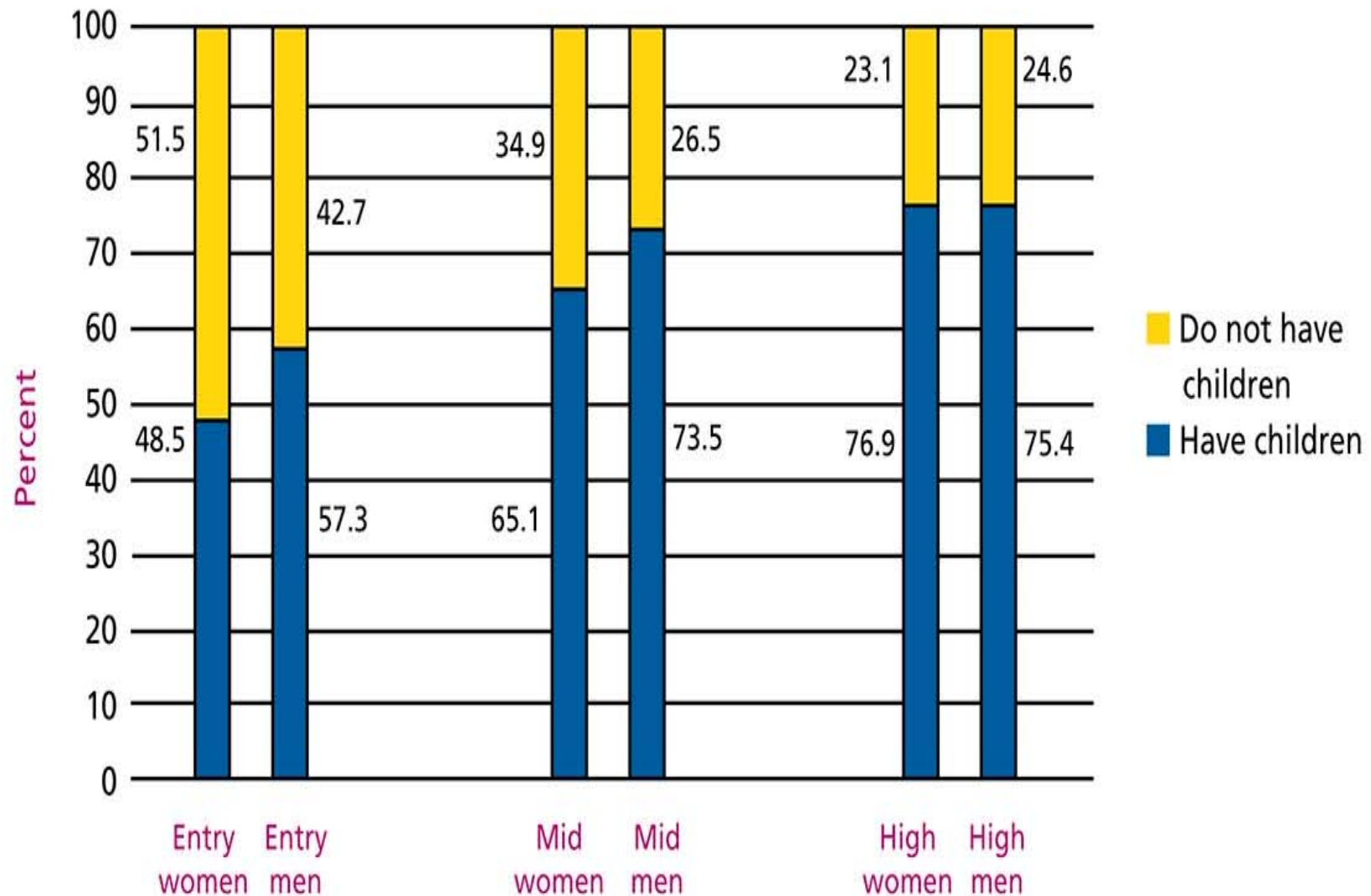
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Chart 2c. Percentage of Technical Workers Who Have Children, by Gender and Level



Silicon Valley family configurations do not reflect US reality

Chart 2e. Household Characteristics of Partnered Mid-Level Technical Workers, by Gender

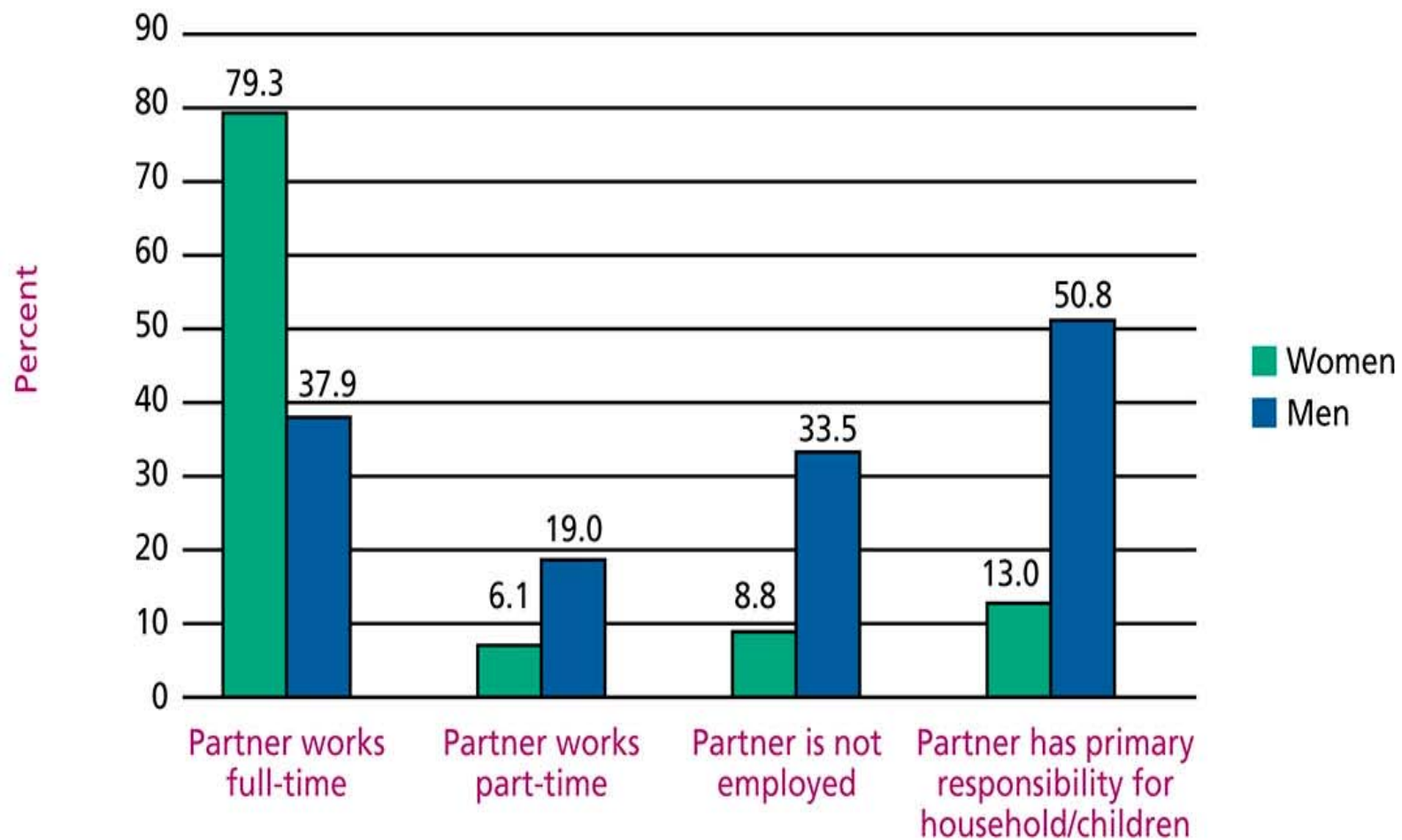


Chart 2f. Percentage of Partnered Respondents Who Report that their Partner Has Primary Responsibility for Household and Children, by Gender and Level

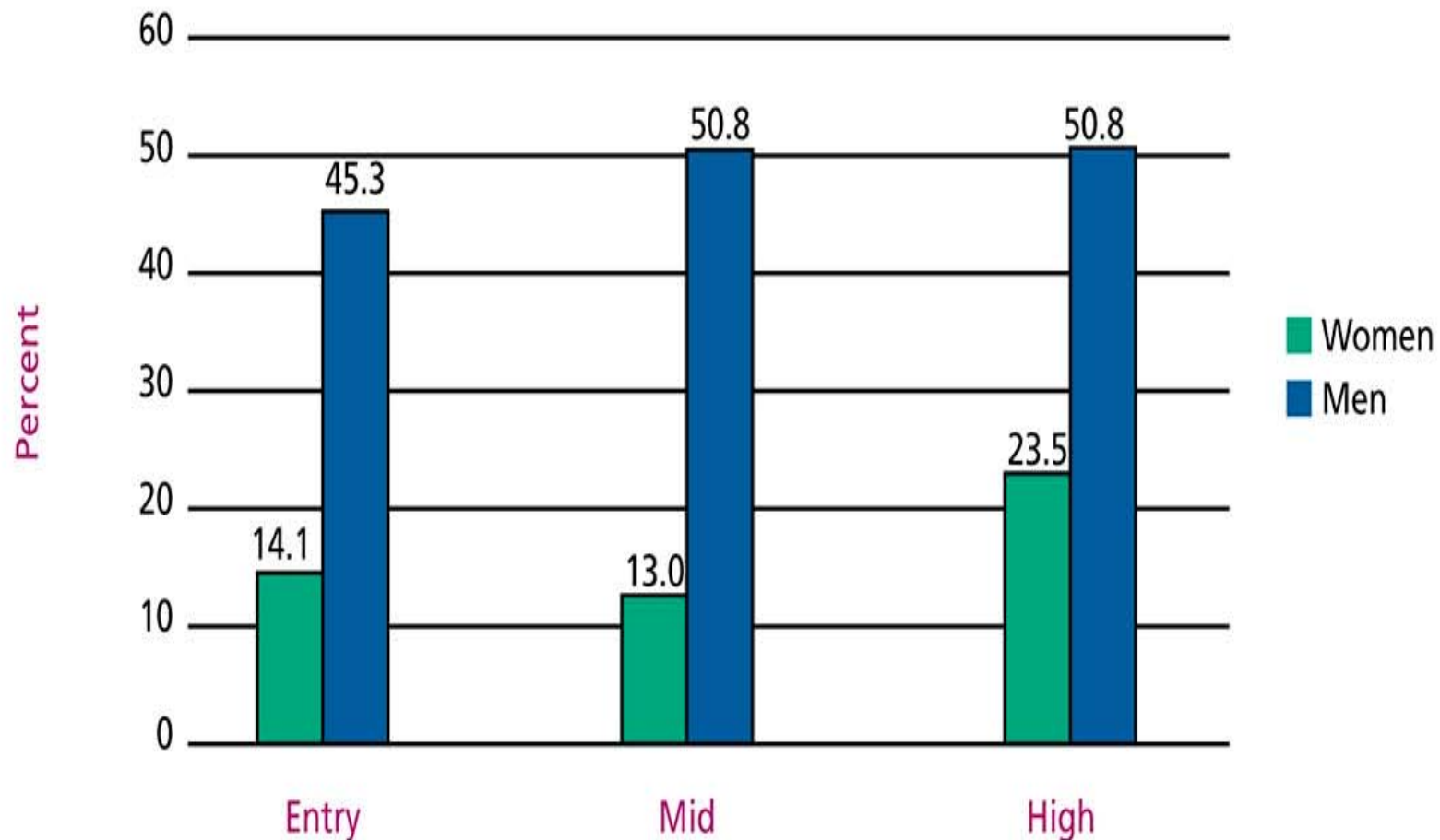
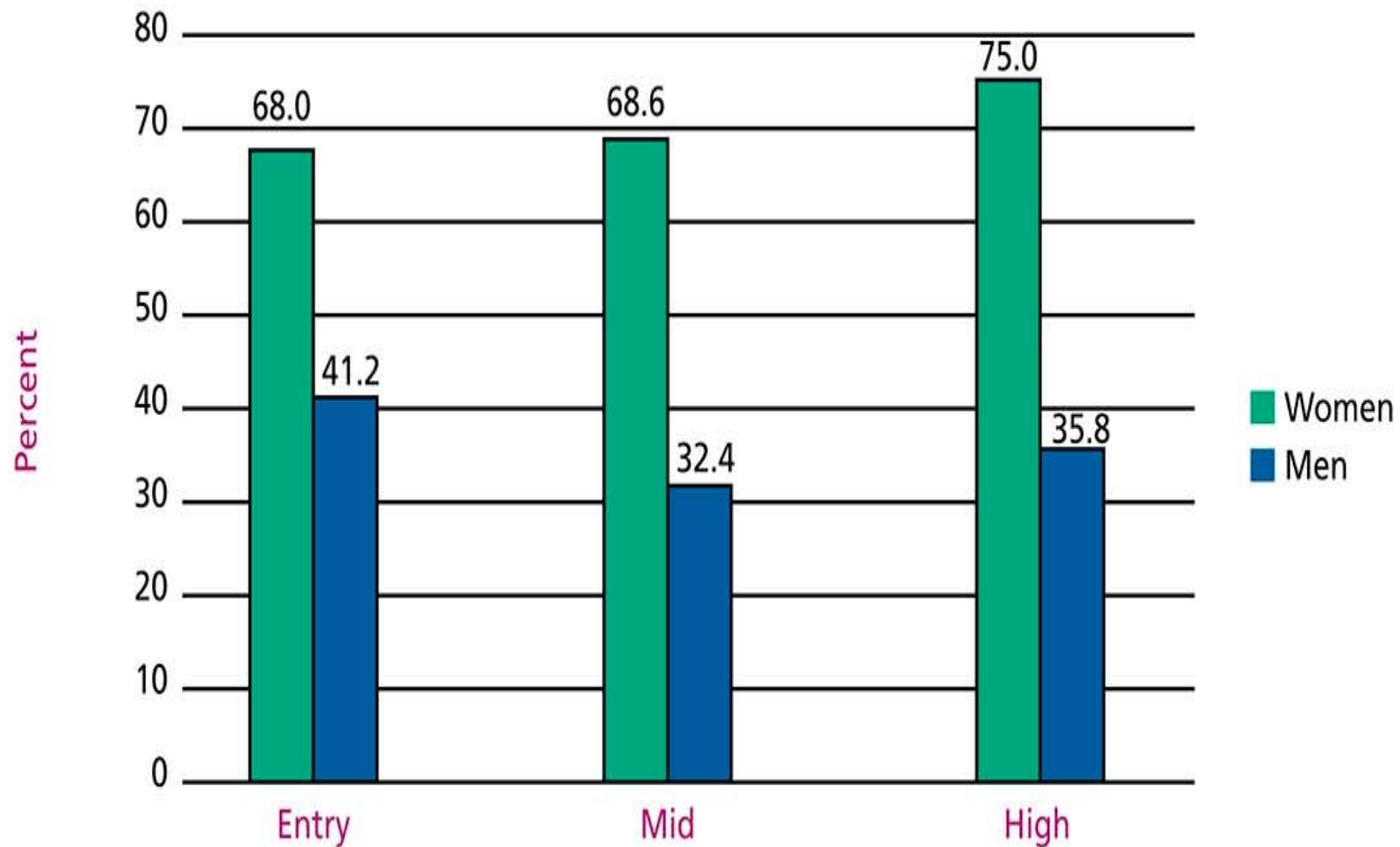
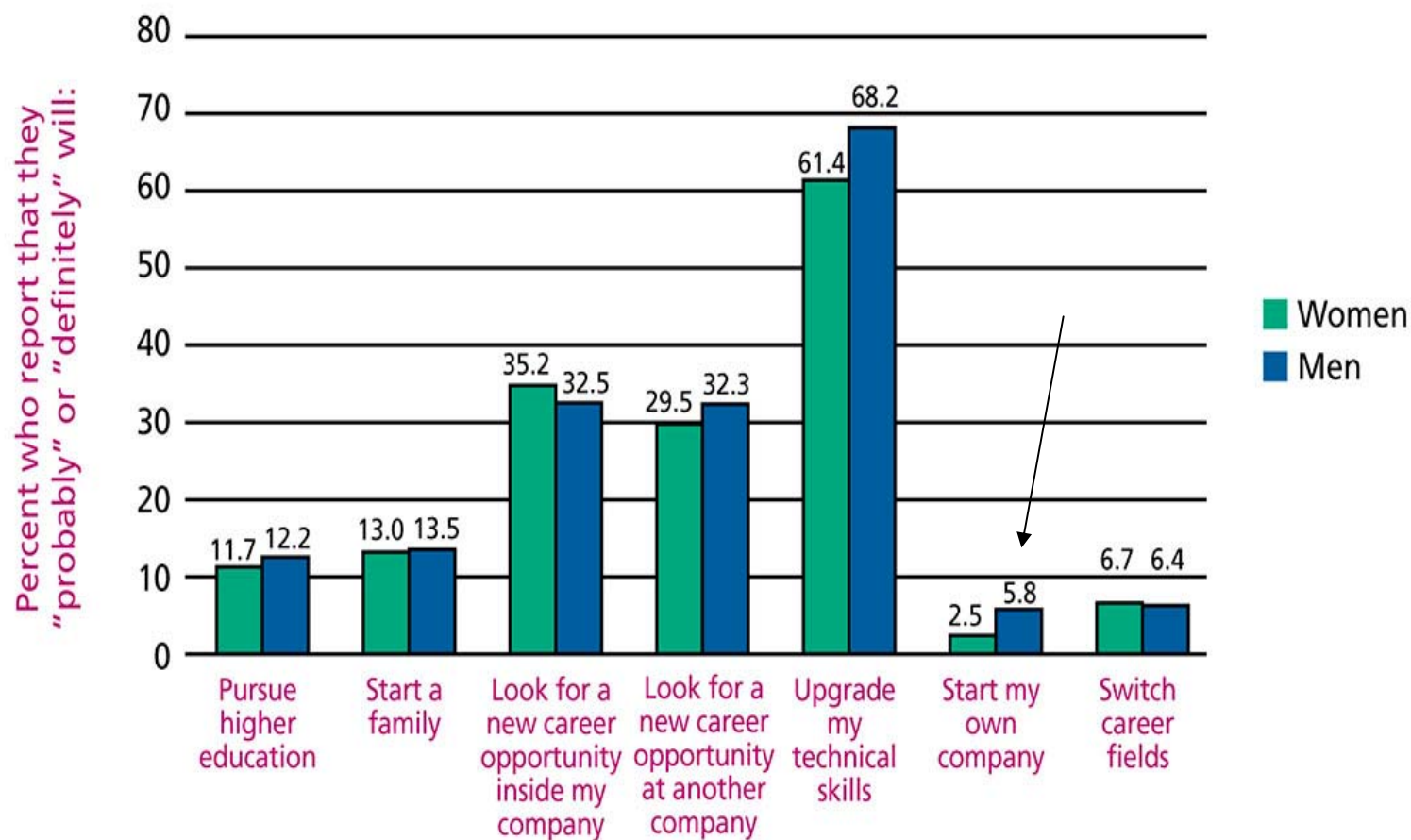


Chart 2g. Percentage of Partnered Respondents in Dual Technical Career Households, by Gender and Level



(see method note in Appendix B)

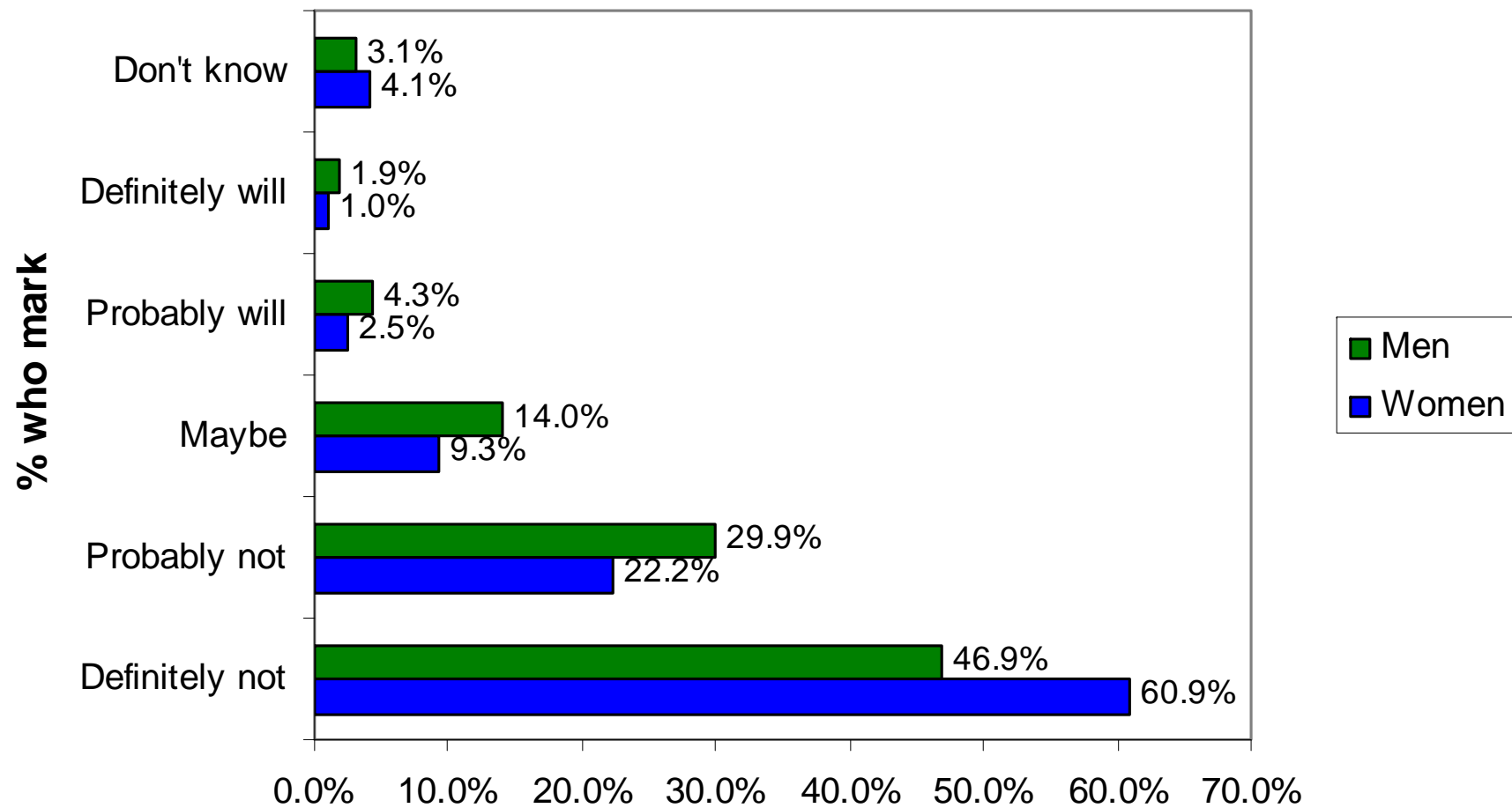
Chart 5g. Mid-Level Technical Workers' Plans for the Next 12 Months, by Gender



(see method note in Appendix B)

Plans for the next 12 months – start my own company (all respondents)

Plans for the next 12 months: "start my own company"
full sample of technical men and women, by gender



Linking self perceptions to entrepreneurship

- Attributes of success related to intention to start own company
- Men and women who ranked themselves higher on these attributes were more likely to intend starting a company:
 - Long working hours ($p=.027$)
 - Innovator ($p=.025$)
 - Entrepreneurial ($p=.000$)

By contrast, the following self-perceptions were associated with intentions to look for a new opportunity *within* the company

- Long working hours ($p=.001$)
- Good manager ($p=.003$)
- Questioning ($p=.018$)

Conclusion

- Technical women in industry: very similar work values to their male counterparts, and do not differ in their self-perceptions on multiple dimensions, but a transfer to entrepreneurship isn't occurring.
- Technical women's self-perceptions on the skills necessary to success in high-tech differ from men's on innovation, entrepreneurship, and working long hours
 - Those are the very attributes tied in our sample to intention to start a company
 - Previous research: entrepreneurial self-image is a predictor of founding firms (Verheul et al, 2004) and that women had lower self-perception of entrepreneurship
 - Differences in dual-career family configuration creates unequal structure of opportunity for technical women – perception that success is incompatible with family will act as a barrier
 - Previous research shows that women are more likely to become entrepreneurs with a desire for work-family balance – incompatible with the Silicon Valley high-tech VC model of rapid scaling.
- Interventions need to provide adequate support for dual-career family configuration of technical women, as well as a focus in increasing self (and others') perceptions on entrepreneurship, innovation, technical competence – gendered perceptions still prevail.





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Thank You

Report available online at:
http://anitaborg.org/files/Climbing_the_Technical_Ladder.pdf

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