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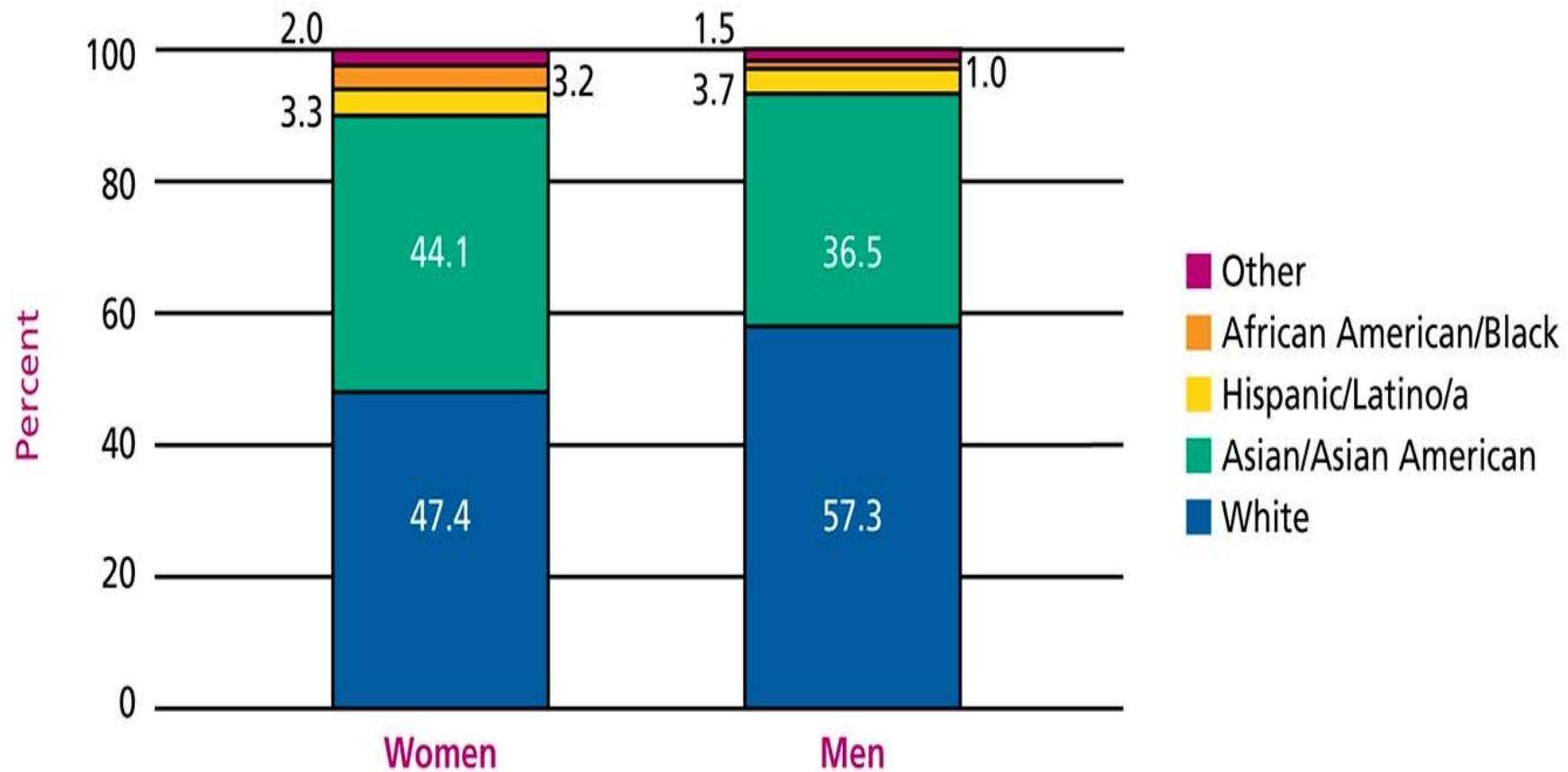
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Chart 1e. The Technical Ladder: Distribution of Female and Male Respondents Across Rank Levels



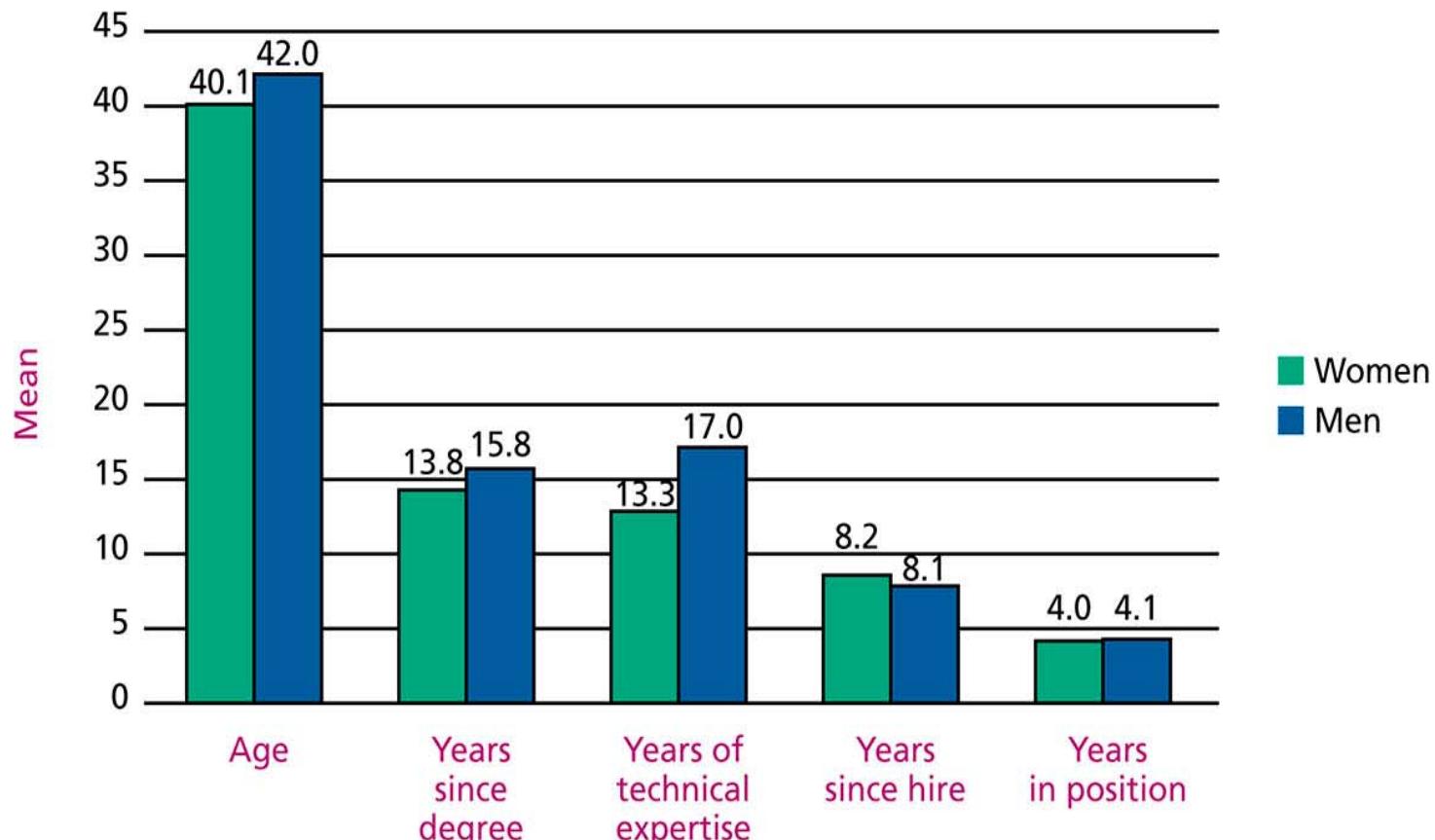
# A global workforce

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



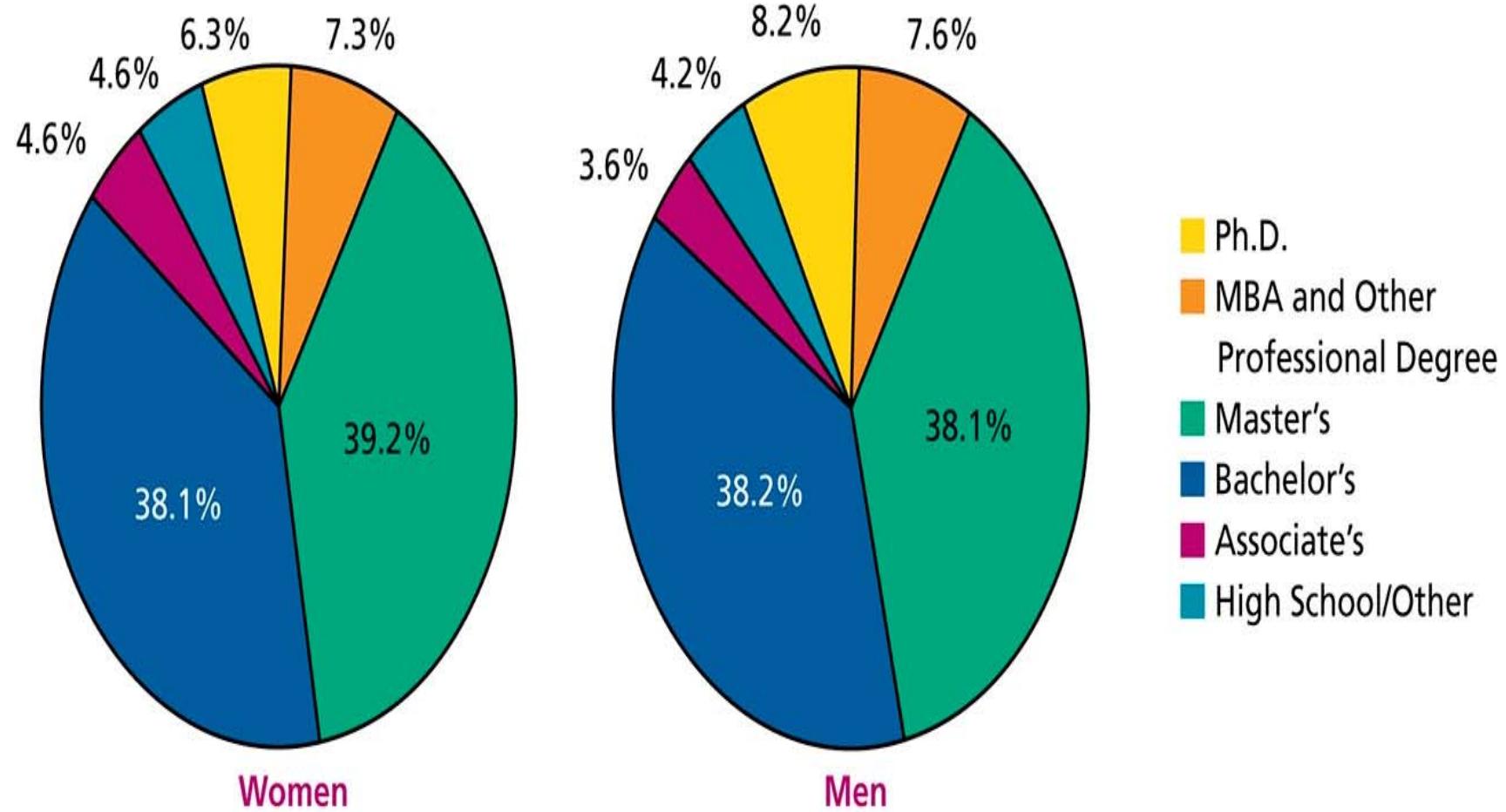
(see method note in Appendix B)

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

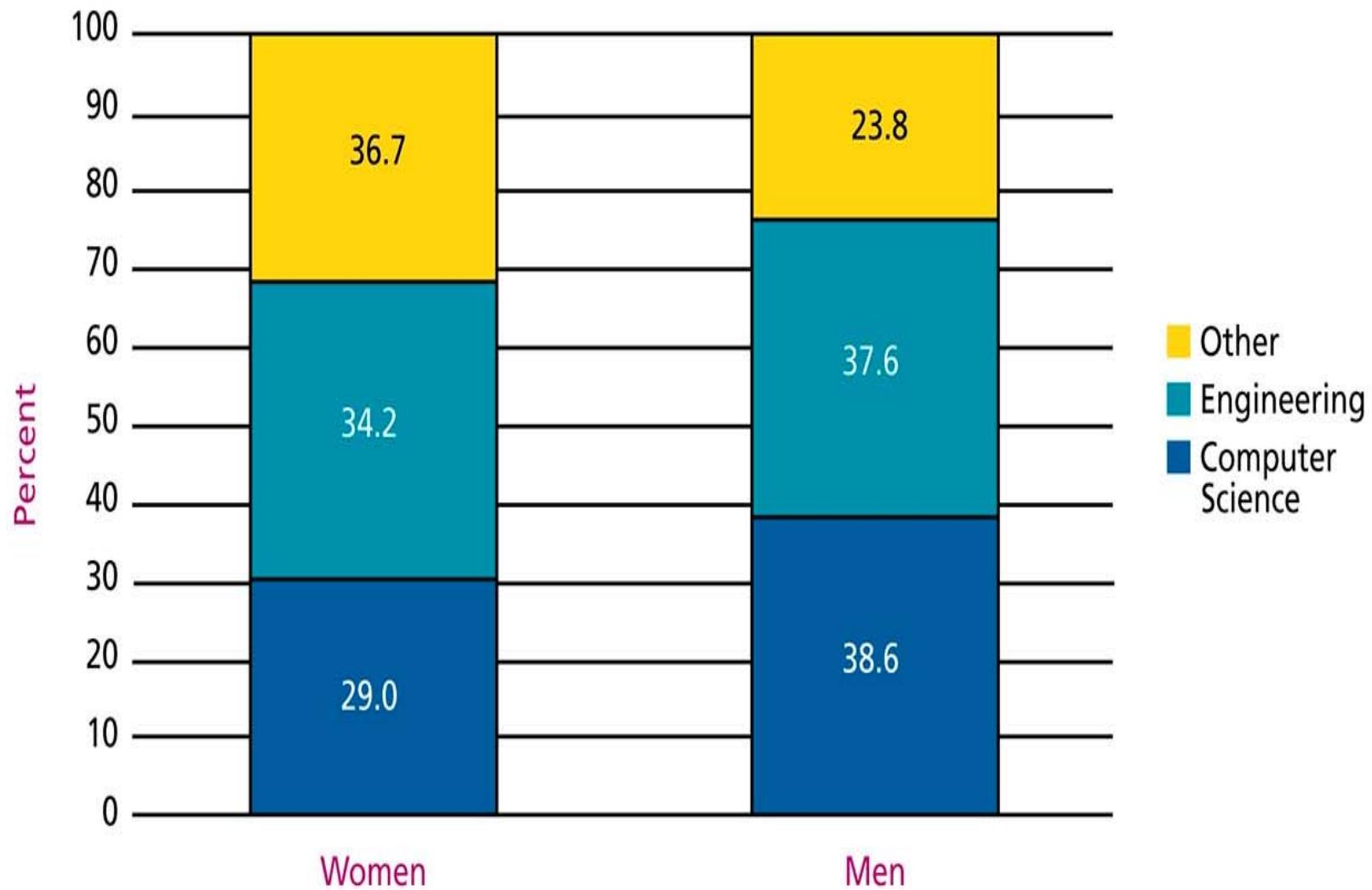


(see method note in Appendix B)

## 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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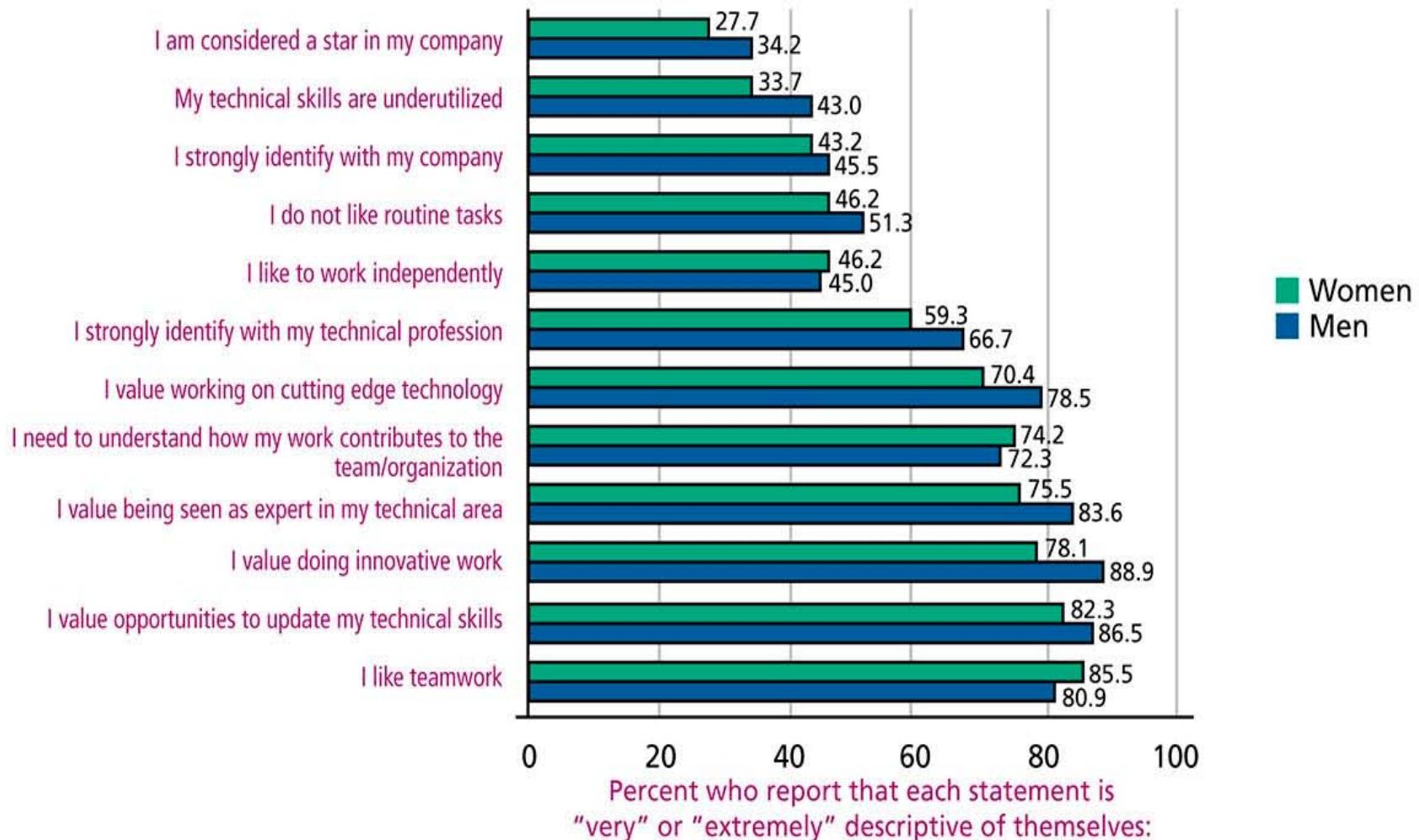
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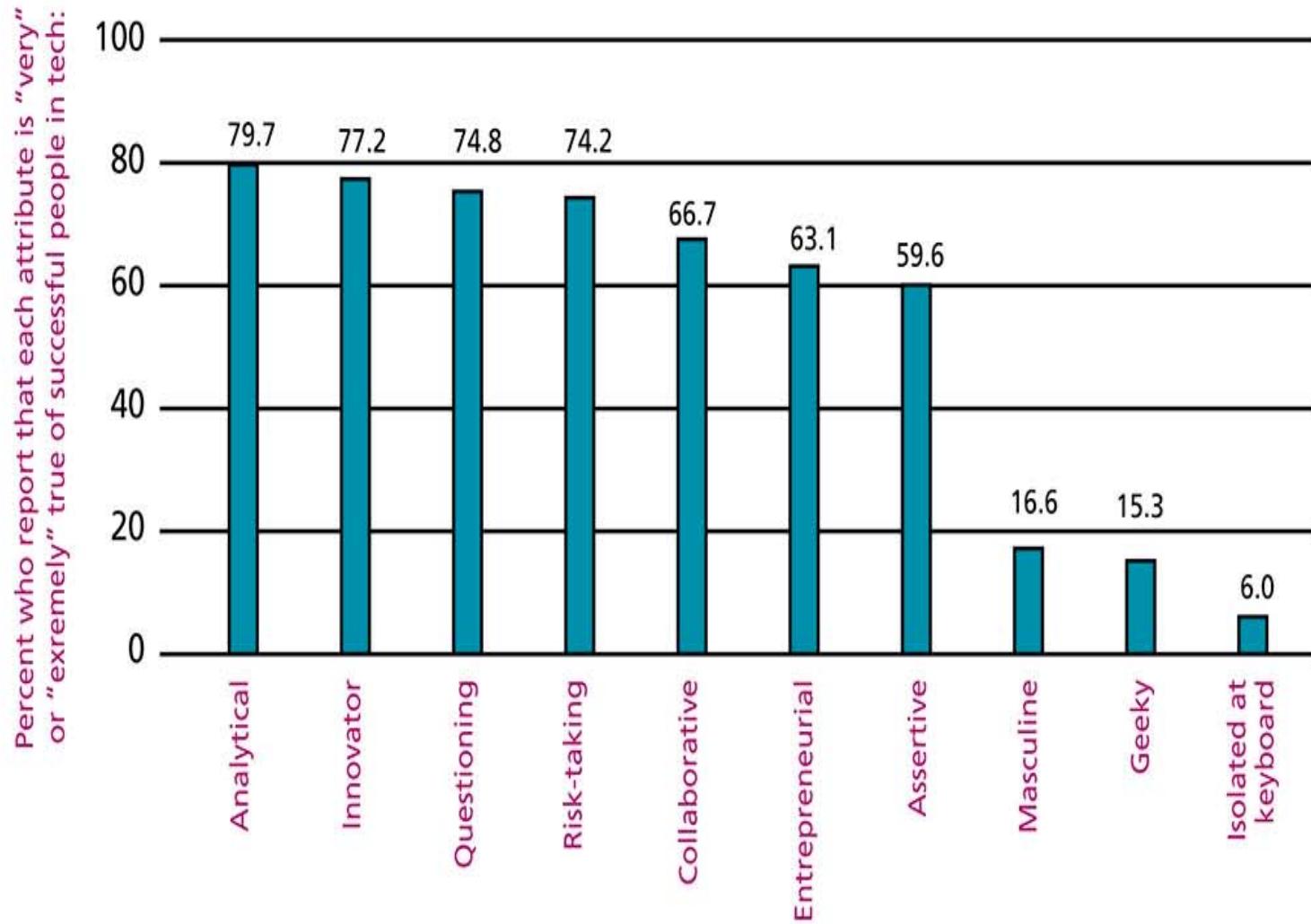
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# Work values

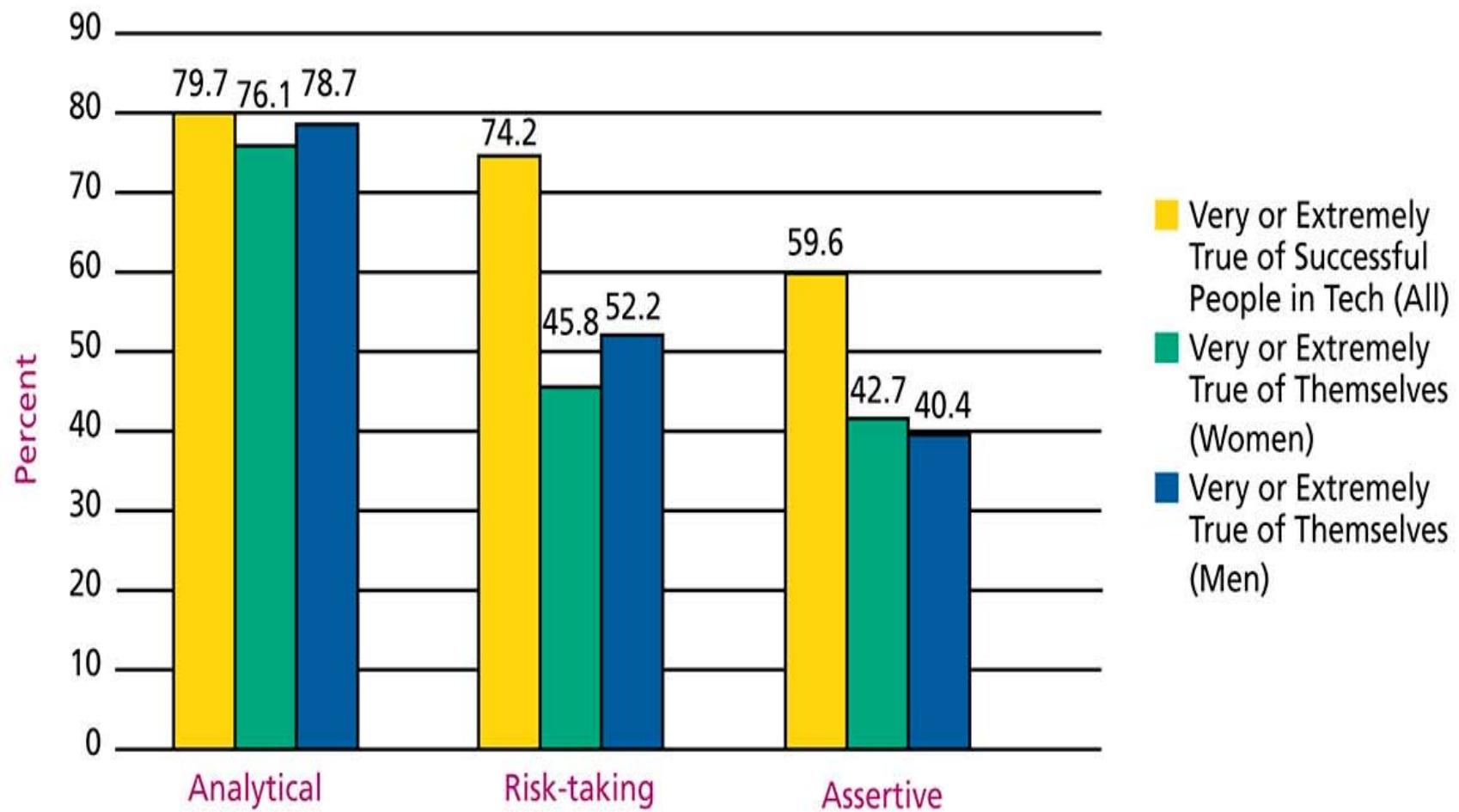
Chart 3f. Work Values of Mid-Level Technical Women and Men



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

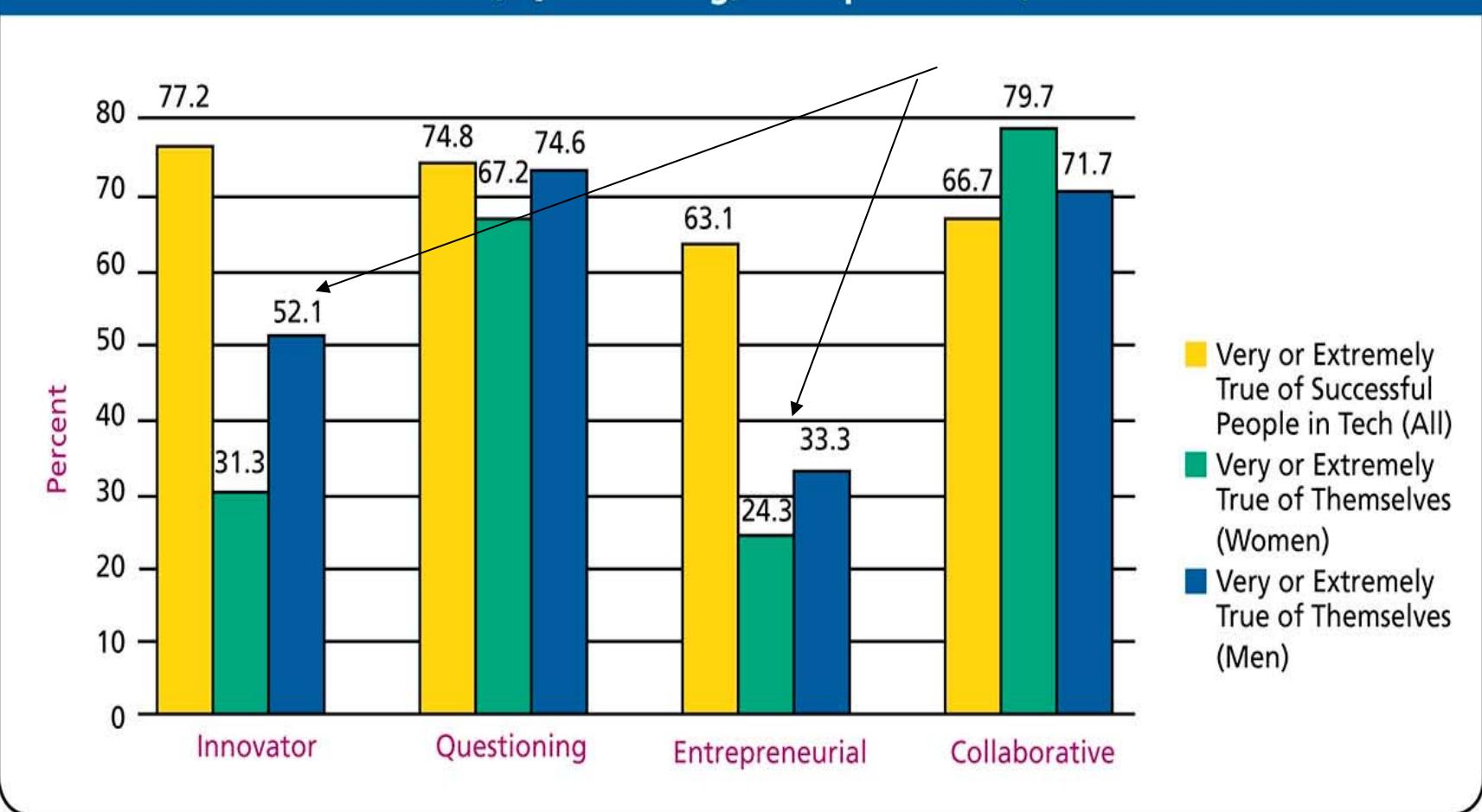


## Chart 3b. Self-Perceptions of Mid-Level Technical Women and Men on Select "Top 7" Attributes: Analytical, Risk-Taking, and Assertive

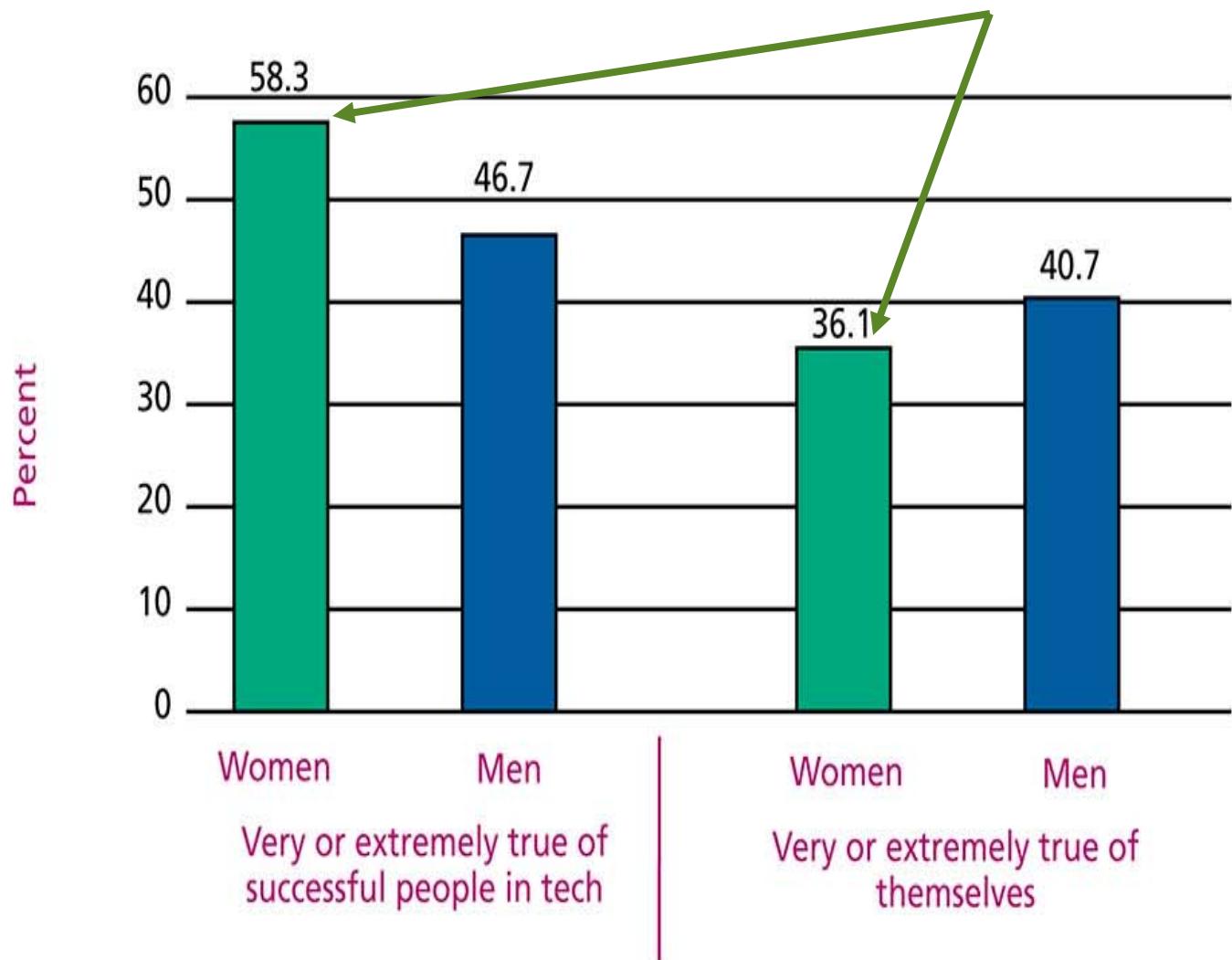


# Where technical women's self perceptions differ...

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

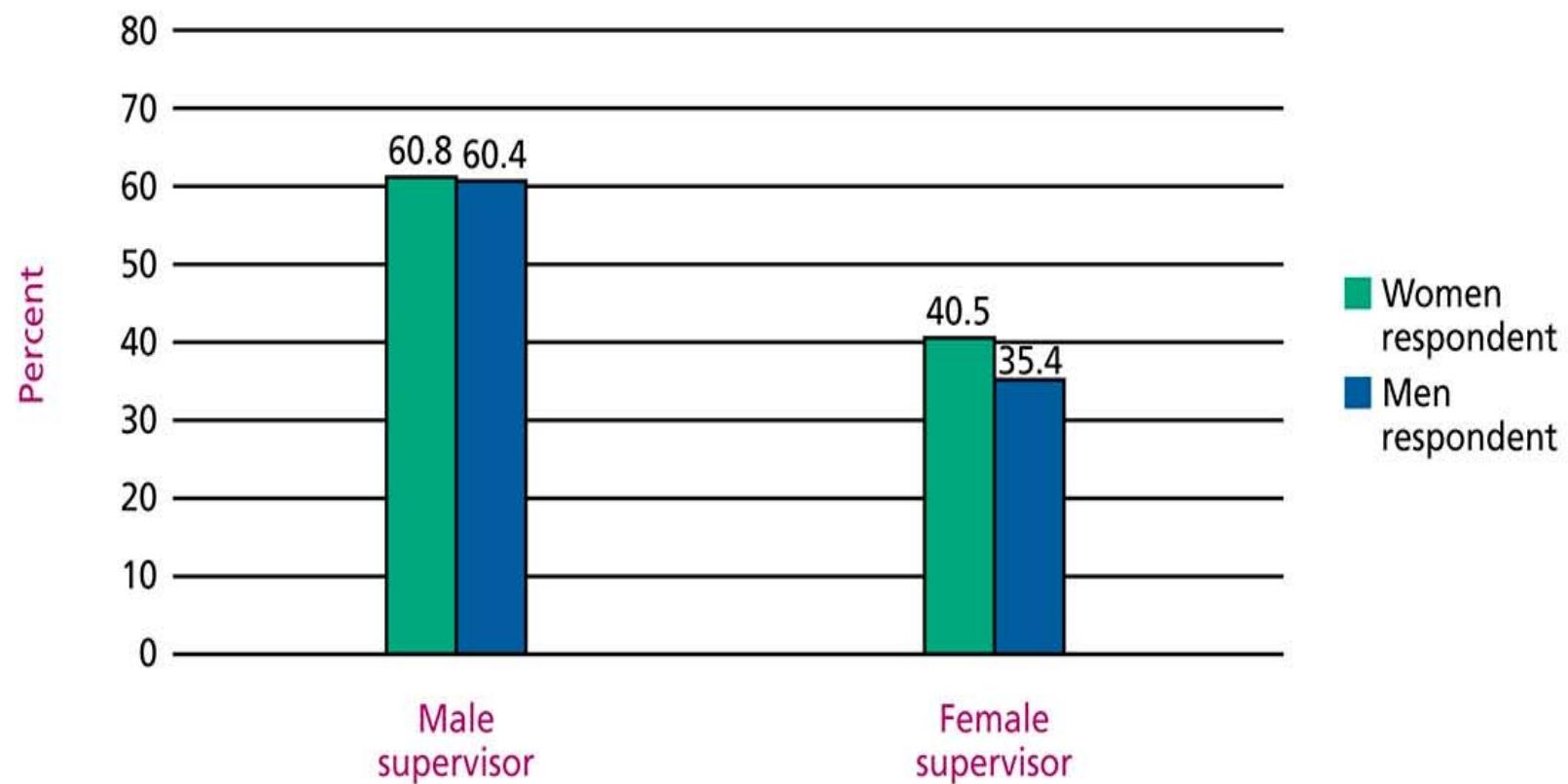


## Chart 3d. "Long Working Hours": Attribute of Success Versus Self-Perception Among Mid-Level Technical Men and Women



## 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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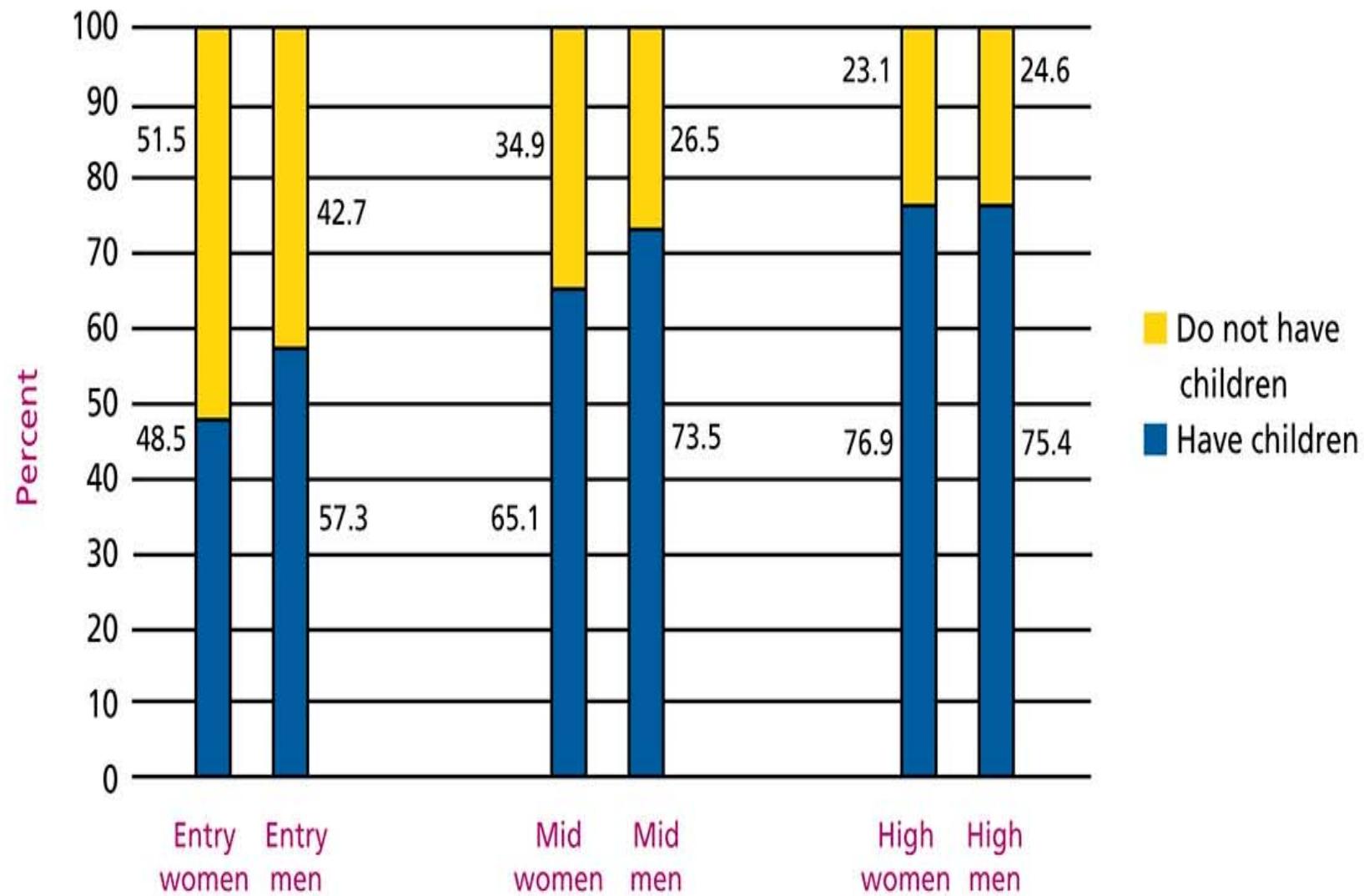


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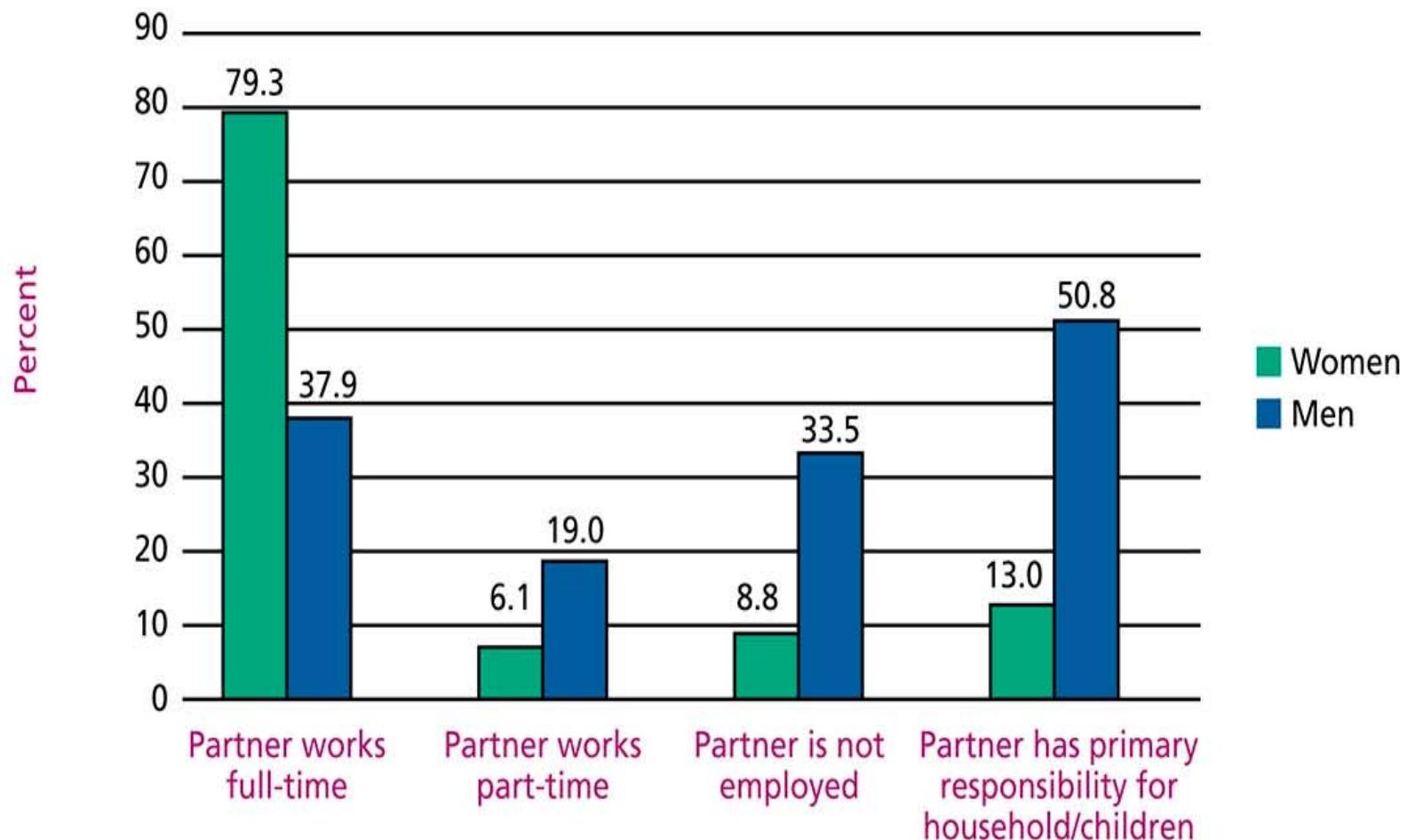
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## Chart 2c. Percentage of Technical Workers Who Have Children, by Gender and Level

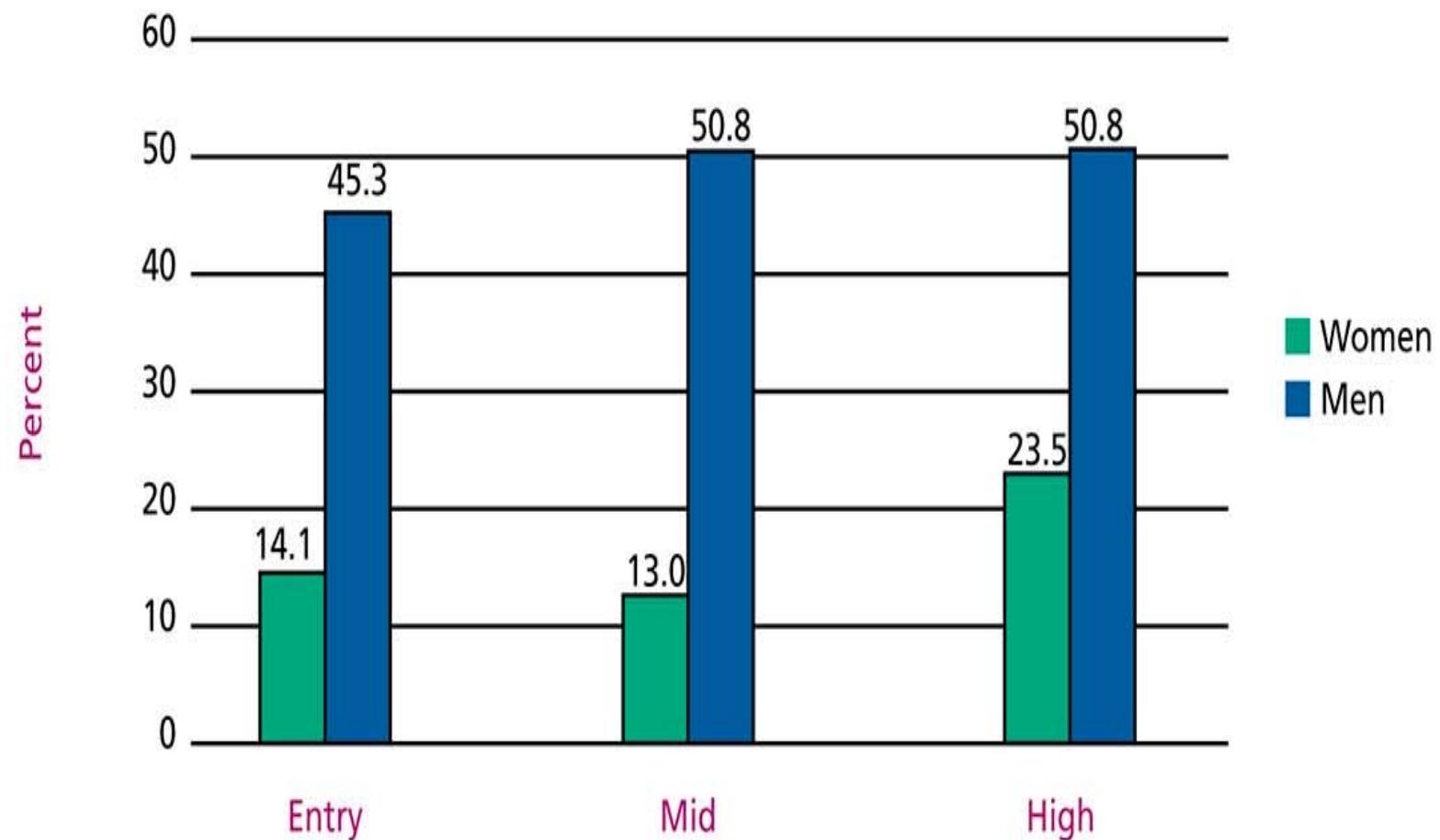


# Silicon Valley family configurations do not reflect US reality

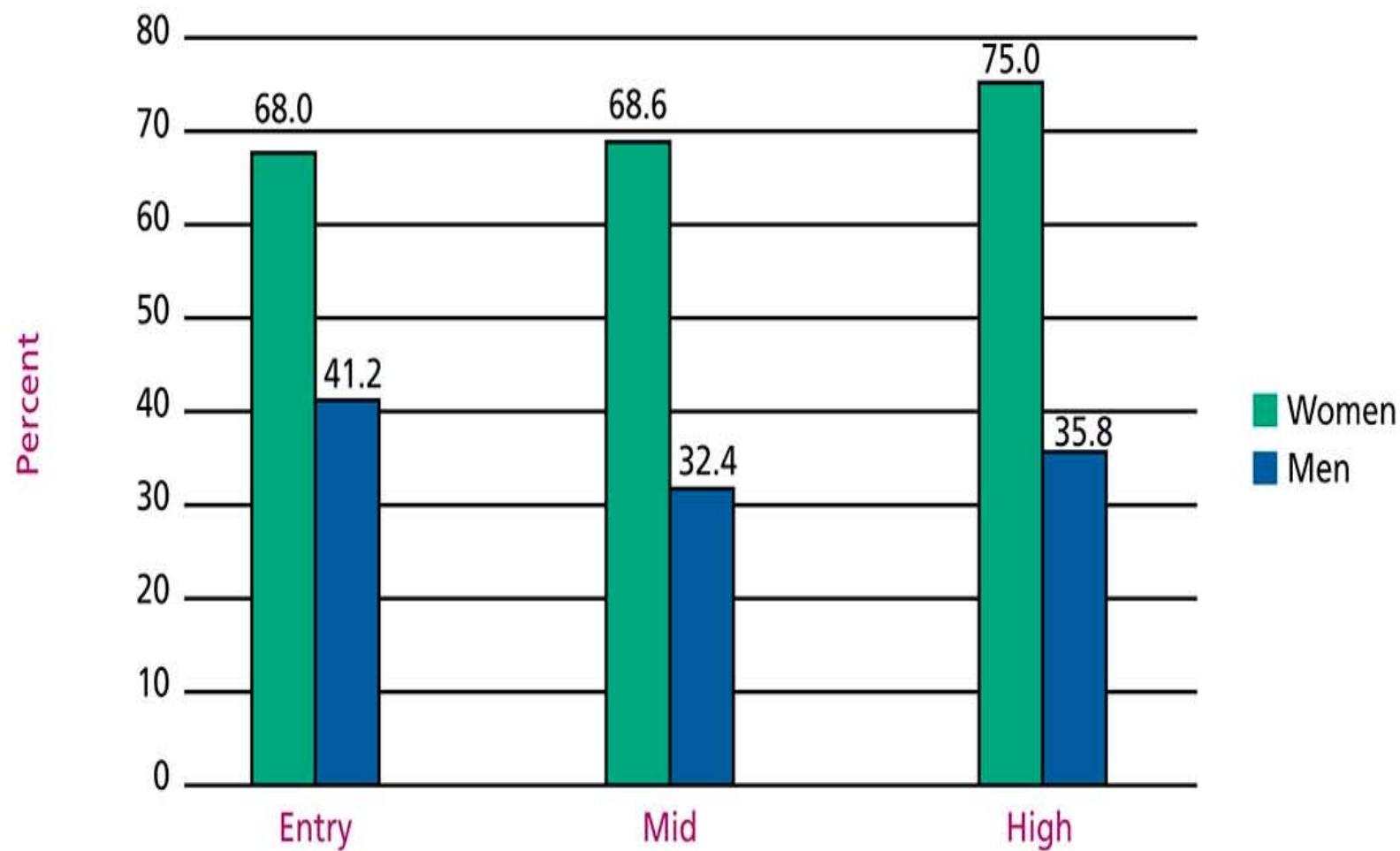
Chart 2e. Household Characteristics of Partnered Mid-Level Technical Workers, by Gender



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

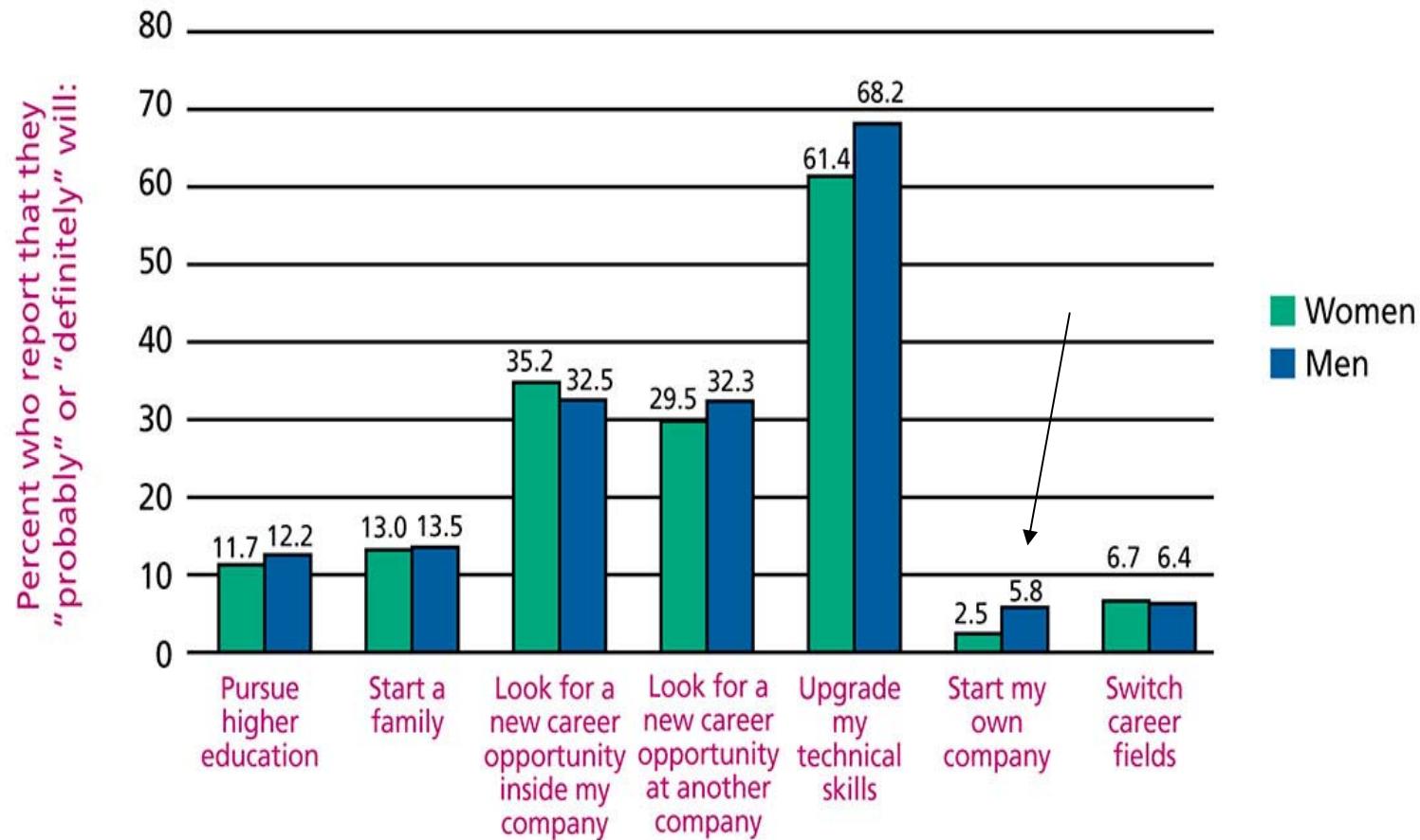


## Chart 2g. Percentage of Partnered Respondents in Dual Technical Career Households, by Gender and Level



*(see method note in Appendix B)*

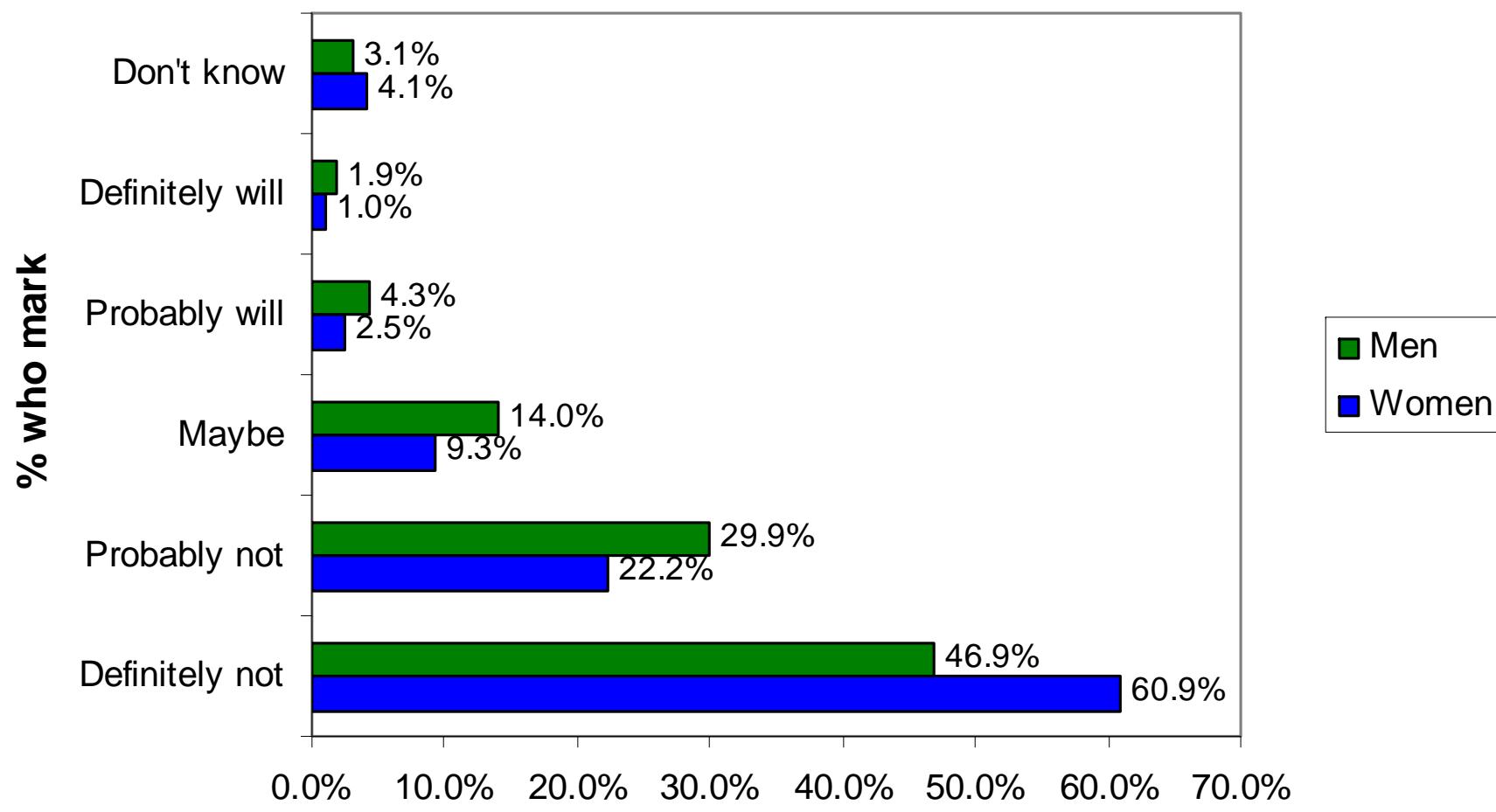
## Chart 5g. Mid-Level Technical Workers' Plans for the Next 12 Months, by Gender



(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](http://anitaborg.org/files/Climbing_the_Technical_Ladder.pdf)

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