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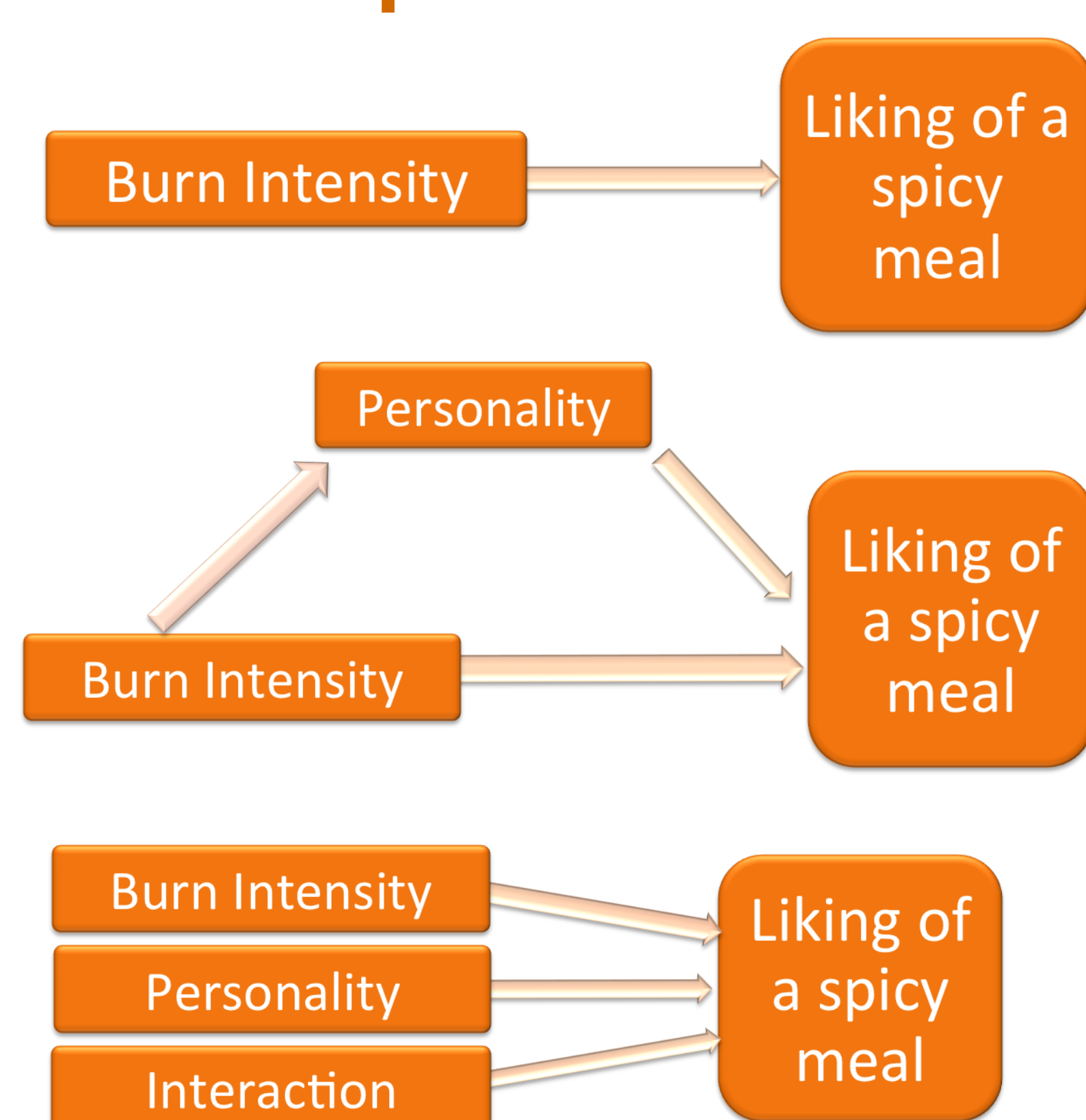
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Background

It has been proposed that personality variables play a role in determining an individual's preference for, sensitivity to, and ultimately, intake of, capsaicin containing foods.

- Chile consumption associates with a number of other masochistic and thrill seeking behaviors such as riding rollercoasters or gambling (Rozin 1980, 1990). Additionally, sensation seeking was associated with chile liking (Logue & Smith 1986), specifically the thrill and adventure seeking, and experience seeking subscales (Terasaki & Imada 1988). Recently, Ludy and Mattes (2011) found sensation seeking was higher in frequent chile users.
- Pilot data suggests individuals with high Private Body Consciousness (PBC) rate the burn of capsaicin as more intense than those with low PBC (Stevens 1990). PBC may also influence intake of chiles (Stevens 1990) and the perception of pain (Ferguson 1998).
- Numerous studies over a half century indicate liking is a good indicator of consumption (eg, Schutz 1957; Tuorila et al 2007; Duffy, Hayes et al 2009).
- Sensitivity to Punishment and Sensitivity to Reward traits found to influence the association between risk factors and dysfunctional eating and drinking (Loxton and Dawe 2004)
- Food-related personality traits, such as Food Neophobia, suggested to influence the relationship between food choice and intake (Eertmans et al 2005).
- Stevenson & Yeomans (1992) showed that frequent chile users like the burn of chiles more than non-users at low burn intensities, indicating that perceived intensity of capsaicin may alter liking patterns of spicy foods.

Specific Aims



Methods

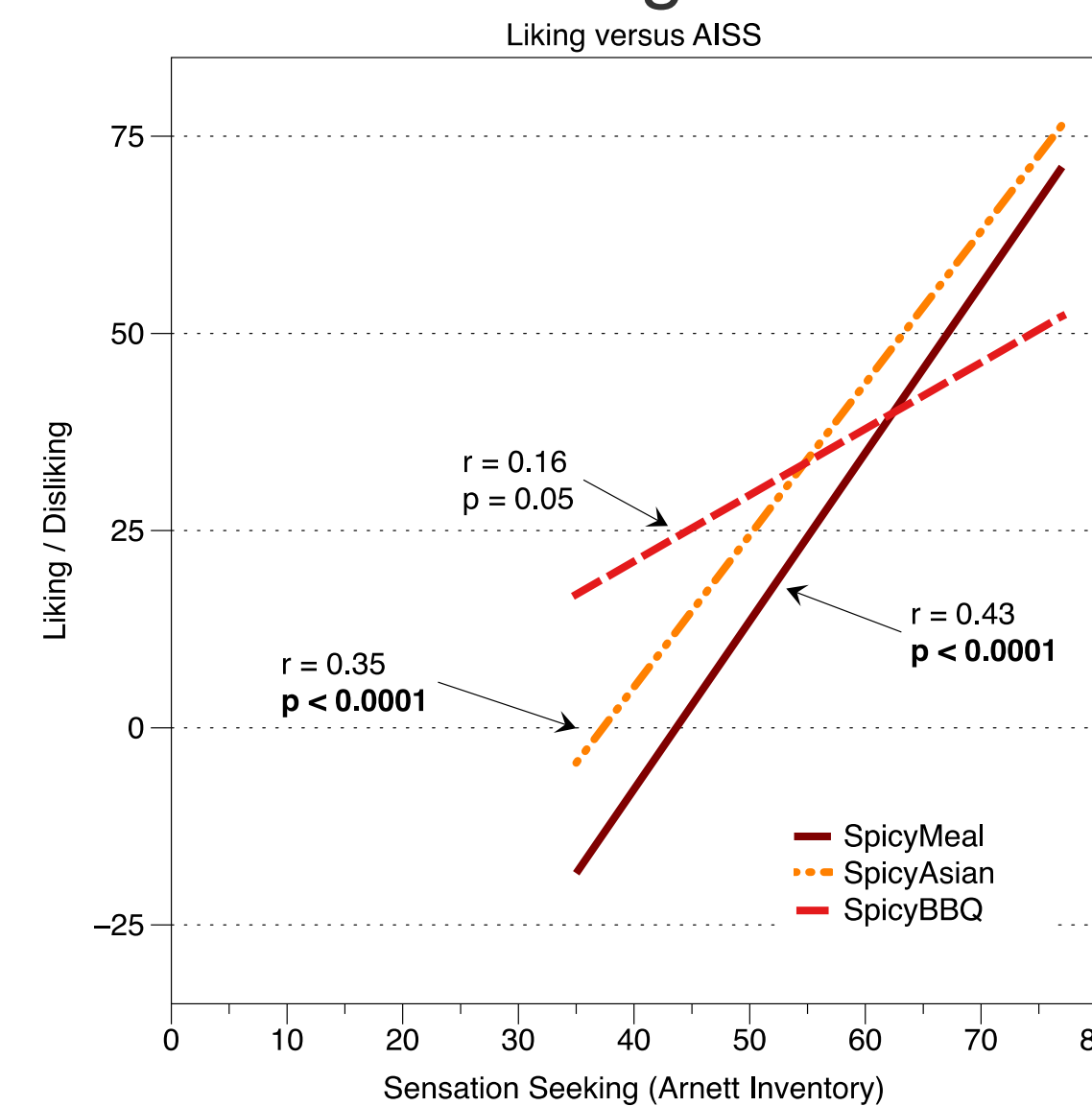
Overview – As part of a larger, ongoing study (Project GIANT-CS), participants complete a liking questionnaire of 82 food and non-food items. Ratings were made using a generalized hedonic scale. Participants received 10mL of 25uM capsaicin in a standard battery of tastants and irritants; they rated multiple sensations including “Burning/Stinging” on a generalized labeled magnitude scale (gLMS). Compusense *five* was used to collect liking and intensity data in one on one testing. After completing the first test session, participants completed a web-based personality survey that combined short TPQ-NS, PBC, AISS, and SPSRQ measures. Participants reported intake of chile containing foods using a frequency graded category scale (1= never, 2=once/month, ... 7= once /day, 8=twice/day). These data were annualized (once/month =12; once/day =365) prior to analysis.

Participants –Panelists were excluded if they had known defects of taste or smell, piercings of the lip, cheek, or tongue, had smoked in the past 30 days, had known difficulties swallowing, were taking medication for any chronic pain conditions, or had a history of thyroid irregularities.

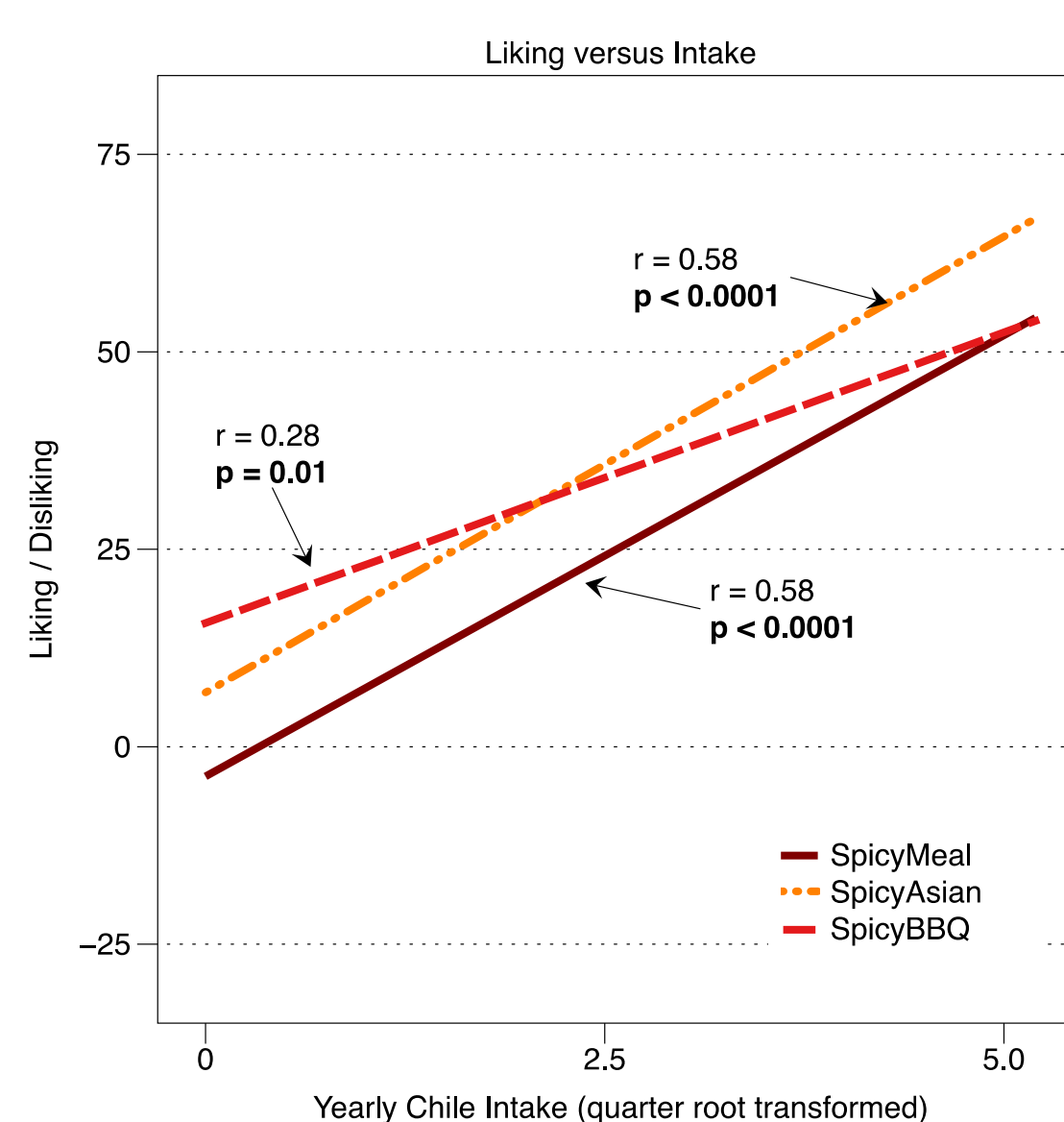
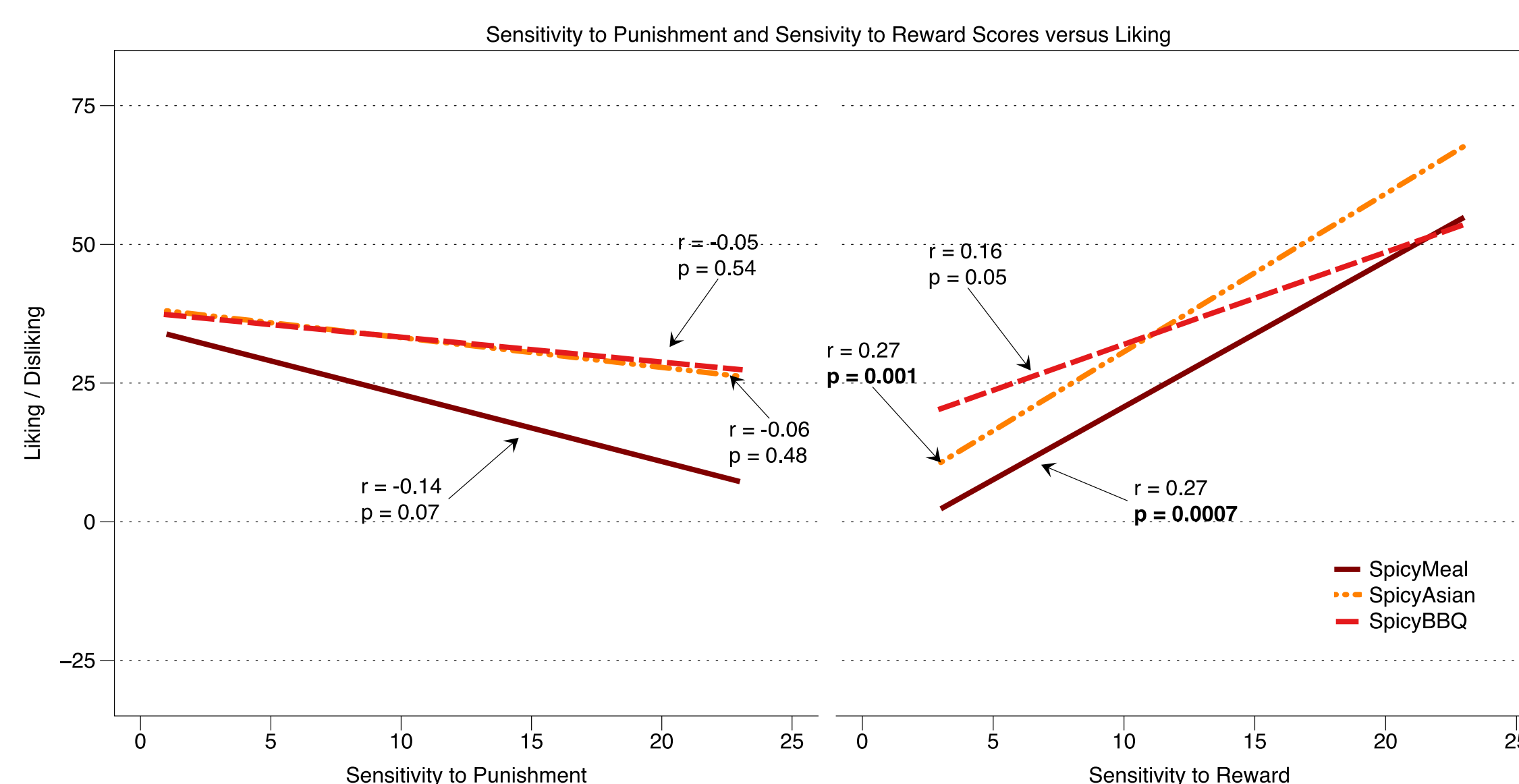
Results and Discussion

Finding 1. Burn intensity significantly associated with liking of a spicy meal ($r = -0.20$, $p = 0.006$). No desensitization observed in sample ($r = -0.02$, $p = 0.77$).

Finding 2. Sensation seeking associated with liking of spicy foods.

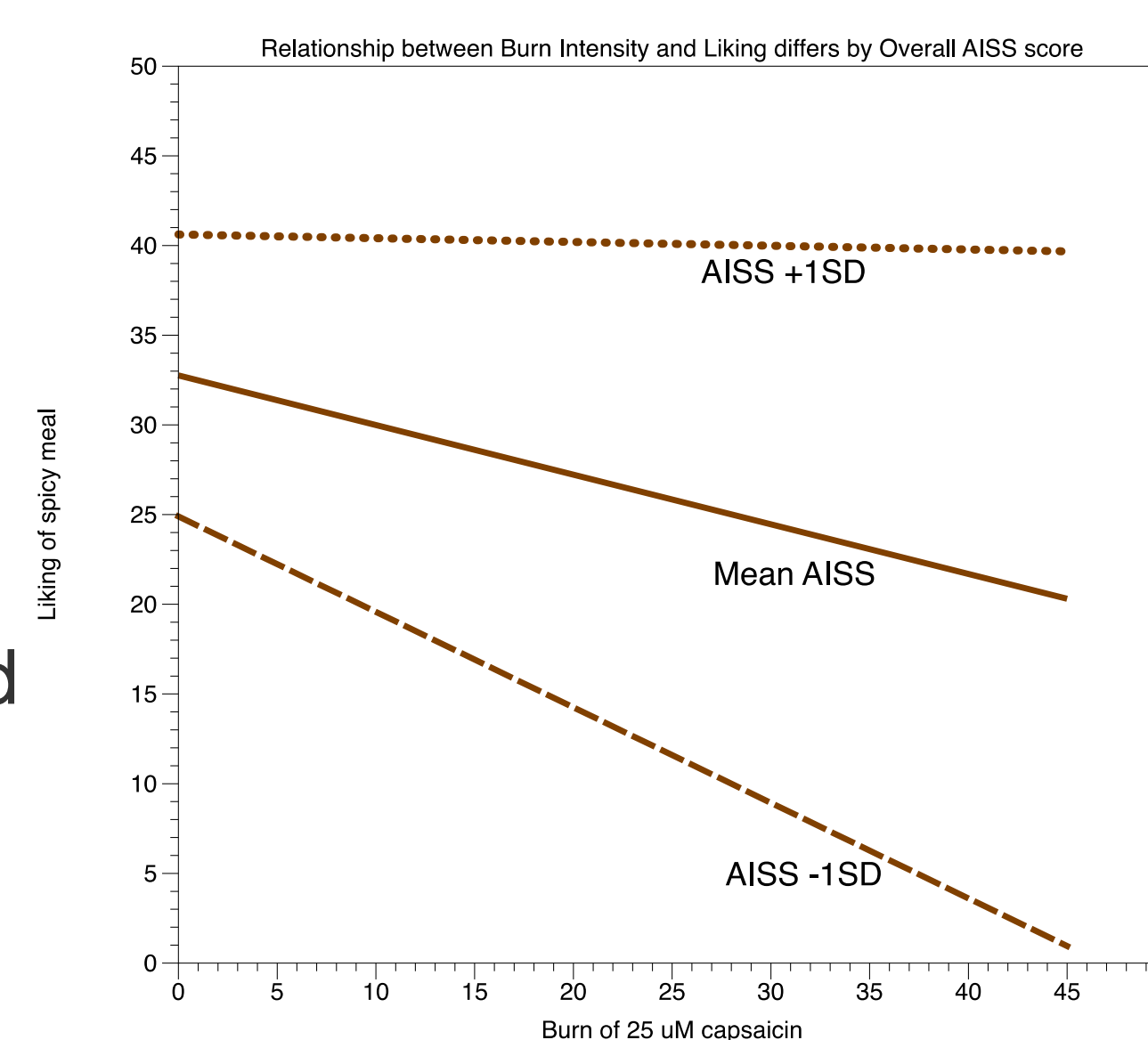


Finding 3. Individuals with higher Sensitivity to Punishment scores showed a general trend towards lower liking for spicy foods, while higher Sensitivity to Reward associated with high liking for spicy foods.



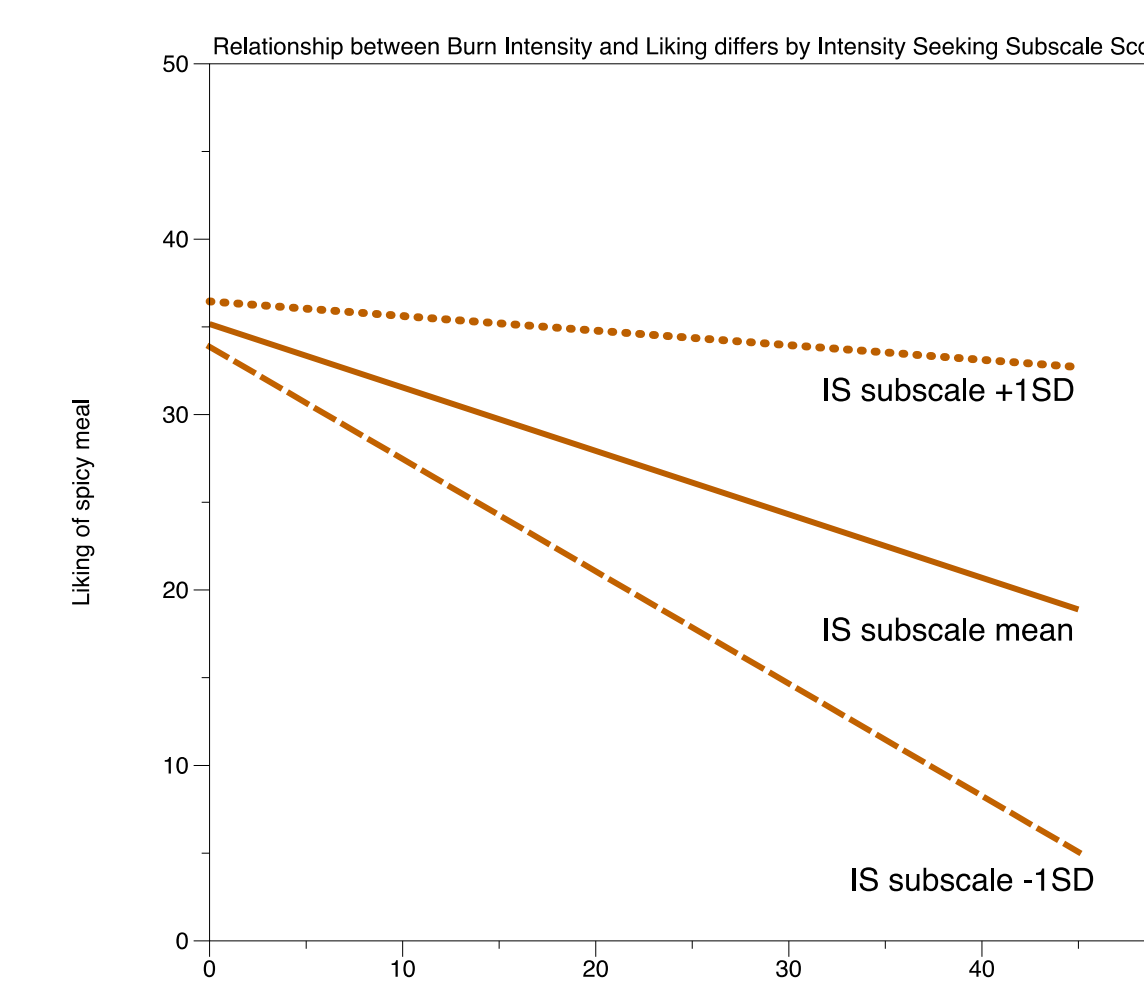
Finding 4. Liking for spicy foods showed a strong positive correlation with chile intake frequency.

Finding 5. AISS moderated and partially mediated relationship between burn intensity and liking of a spicy meal

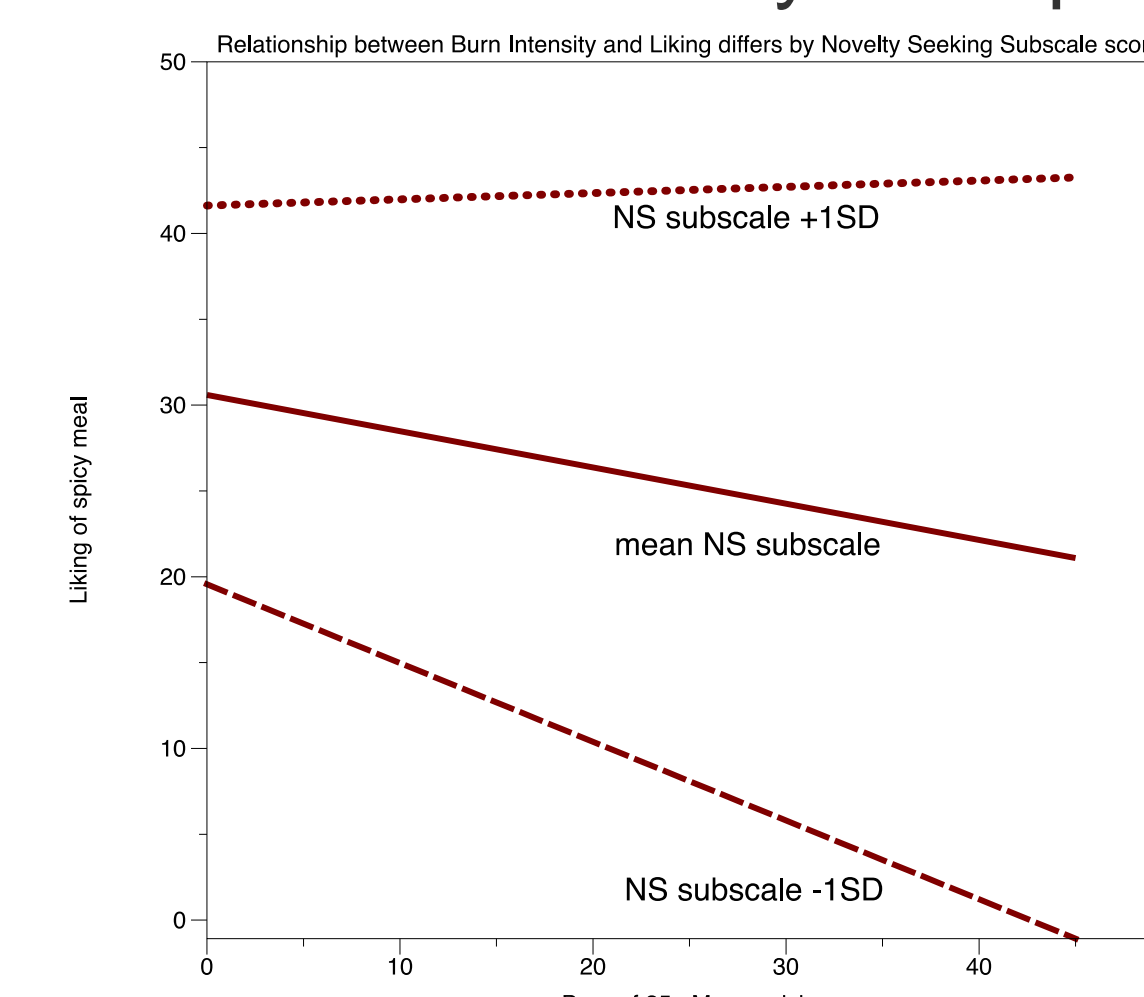


Results and Discussion

Finding 6. Intensity Seeking subscale of AISS moderates relationship between burn intensity and spicy meal liking.



Finding 7. Novelty Seeking subscale of AISS moderates relationship between burn intensity and spicy meal liking



Conclusions and Future Work

Of the personality variables we measured, only Sensation Seeking (AISS) and Sensitivity to Punishment and Reward (SPSRQ) associated significantly with liking of spicy foods or chile intake. Sensation Seeking and Sensitivity to Reward predicted liking of spicy meals and spicy Asian foods.

As expected, liking scores for the various spicy foods strongly correlated with annual chile intake. Surprisingly however, intake frequency did not associate with perceived burning/stinging of 25uM capsaicin. It is possible that in spite of frequent use, our participants did not reach the minimum dose or frequency of exposure required to elicit the chronic desensitization previously reported for chronic users. Future examination of minimum dosing and dosing frequency may provide additional insight.

In addition to the direct relationships observed between AISS and the SR subscale of the SPSRQ, mediator and moderator relationships were found for AISS. The relationship between burn intensity of 25 uM capsaicin and the liking of a spicy meal was partially mediated and moderated by the personality trait of Sensation Seeking (mediation not shown).

To further elucidate the factors driving the relationship between AISS, burn intensity, and the liking of spicy meals, the AISS was split into its component subscales, the Novelty Seeking and Intensity Seeking subscales. Both of these subscales showed partial mediation and moderation of the relationship between burn intensity of 25 uM capsaicin and the liking of spicy foods. However, the extent of moderation by these two subscales differs strikingly. It appears that the NS subscale shows a stronger moderator effect than the IS subscale. Further exploration into the factors driving this relationship, and the association between personality traits and orally irritating foods is warranted.

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