- [Why, When, and How Much to Entertain Consumers in Advertisements? A Web-Based Facial Tracking Field Study] **(2014) Market Science**
    - Using a "novel web-based" face tracking
    - "We contribute to the literature on entertainment in advertising by (i) showing the downside of using too much entertainment in ads, (ii) identifying the conditions under which advertisers, based on their goal to generate awareness, interest or purchases, should use more or less entertainment, and (iii) demonstrating the order effects between entertainment and first-brand exposure, which we show to ultimately impact entertainment's persuasiveness"
        - Effect of entertainment level on purchase intent
            - If too much entertainment can increase an interest in the advertisement yet be detrimental to persuasion

Table 2 Survey Measurements and Format of Collection

Measure	Type	Question	Type
Purchase intent	Dependent variable	How likely are you to purchase this brand?	11-point scale, anchored by "not at all likely" to "very likely"
Ad familiarity	Control	Have you ever seen this ad before (this study)?	Binary, "no" or "yes"
Age	Control	What is your age?	13 categories between "under 18" and "over 50"
Gender	Control	What is your gender?	Binary, "female" or "male"
Extraversion	Control	How extroverted are you?	5-point scale, anchored by "not at all" to "extremely"
Category frequency	Control	How often do you PURCHASE or CONSUME the following product categories?	5-point scale, anchored by "never" to "very often"
Category interest	Control	How INTERESTED are you in the brands in the following product categories?	5-point scale, anchored by "not at all interested" to "very interested"
Category knowledge	Control	How KNOWLEDGEABLE are you about the brands in the following product categories?	5-point scale, anchored by "not at all knowledgeable" to "very knowledgeable"
Prior brand consideration	Control	How likely are you to consider purchasing this brand?	Binary, "no" or "yes"
Prior brand entertainment	Control	How much FUN or ENTERTAINING do you consider these brands to be?	5-point scale, anchored by "not at all fun or entertaining" to "very fun and entertaining"

    - Measures
        - Purchase Intention
            - "Not at all likely" to "very likely "
        - Viewing Interest
            - whether a participant chooses to fully view a particular video or to press the skip button
        - Entertainment level
            - Software tracking how facial regions such as the mouth change in shape
                - But only worked to detect "smiles" not negative emotions
                - Entertainment content did not include "horror, violence, sexual content" that might insight different reaction
            - Over 90% accuracy when validated on datasets across web
        - Control Variables
            - Collected Via questionnaire
            - Assessed prior familiarity with ad, age, gender
            - Prior brand familiarity

                - Prior perception of brand's fun
                - Self-reported extraversion measure
            - "Level of creativity", level of information content
                - Coded by professional coders for ad agencies
    - Crowdsourcing Facial Responses to Online Videos
        - Results verifying and testing web-based smile detection
    - Looking at the viewer: analysing facial activity to detect personal highlights of multimedia contents
    - Another paper cited in previous work about the

- Optimal Feature Advertising Design Under Competitive Clutter **(2007) Management Science**
    - Centered on image-based analytics
        - Focused the design of on feature ads and how to handle competitive clutter
    - Used "more complicated" eye-tracking software on images (not web-based but lab-based)
    - (Tracked Pupil-Corneal Reflection) → not feasible simply over a web platform
        - Divided metrics into "attention selection" and "attention engagement"
            - Attention selection is the percentage of consumers who fixated on the feature ad at least once.
            - Attention engagement is the average time spent on the feature ad by consumers who had fixated on
            - Surface area of the different advertisements was also taken into account
                - Is definitely something that we should feed into models when determining how much a person's attention is drawn to an advertisement

        - May not apply bc the participants were shown multiple images of advertisements on the same page
            - Participants "page through newspaper at their own pace" within a natural settings (not specified to look at feature ads)

- Information Acquisition tion During Online Decision Making: A Model-Based Exploration Using Eye-Tracking Data
- Shining in the Center: Central Gaze Cascade Effect on Product Choice **Journal of Consumer Research (2012)**

    - Tobii 1750 eye tracker
        - Eye Tracking screen (older tech)
    - Therefore, the current project investigates whether horizontal centrality affects (1) how much attention a brand gets, (2) the inferences made about the brand, and (3) whether these factors are related to the impact of horizontal shelf location on choice.
    - Participants reviewed 3x3 matrix of 'products' made a choice and responded to questionnaire
        - Created fictitious brands to eliminate brand familiarity
        - Questionnaire evaluated 'inference about brand'
            - Attraction measures:
                - Asked about how much market share each brand had in product category
                - How much retail space they would allocate if participant was store manager
                - Additional self-report of attraction
            - Memory
                - Asked to recall name of brand selected
                - Asked to recognize/select from list the same name
    - Study 1A revealed that horizontal centrality is a predictor of brand choice. The effect is related to increased visual attention that the brands in the horizontal center get as opposed to inferences made about them.
        - visual attention measures did not converge with the memory-based attention measures
- Eye Fixations on Advertisements and Memory for Brands: A Model and Findings **(2000) Marketing Science**
    - Infrared eye-tracking methodology (Verify International) is used to record eye fixations and a perceptual identification task is used to assess brand memory
        - It is assumed that the number of fixations, not their duration, is related to the amount of information a consumer extracts from an ad
    - We model the eye-fixations to advertisements and their effect on subsequent memory for the brand
    - We accommodate the influence of ad design variables (for example, the size of key ad elements, brand, pictorial, and text) on attention and of media planning
    - Given 2 magazines to page through (the ads placed naturally within actual content)
        - Record the frequencies of fixations on three ad elements: brand, pictorial, and text
        - During the memory task, the accuracy and latency of memory → tested 'indirect perceptual memory' as opposed to explicit memory
            - rPixelated images of the advertisements were shown asked to identify from 4 brand names the correct one
    - As predicted, the largest effect of the surface of the ad elements is observed for the brand. The text receives less fixations per surface area, the pictorial the least.

The disproportionately high unit-fixation frequencies on the brand relative to the other two ad elements is striking
    - BUT… First, in our study most attention in an absolute sense went to the pictorial of the ads, and the textual element also received more attention than the brand element did. Second, the pictorial element had an effect not to be ignored, on brand memory.

Summarizing Points:

- Many of these studies chose to split up their interactions into pre-video survey → video → post-video survey
- Pre-Survey
    - Control for confounding variables
        - Basic information (age, gender, 'extraversion' measure → could impact the frequency of reactions, etc.)
        - Prior ad/brand familiarity
            - Preconceptions of ad/brand
- Video
    - Web-based eye tracking (a given)
        - Attention selection
            - percentage of consumers who fixated on the feature at least once
        - Attention engagement
            - average time spent on the feature by consumers who had fixated on
        - Entertainment level
            - Facial tracking to determine the participant's emotion
    - Viewing interest Features
        - whether a participant chooses to fully view a particular video or to press the skip button
        - Maybe including a selection of Advertisements on the same page (having viewers choose between several options)
    - Have the video in its 'native' environment
        - If target is instagram ads, have it embedded between other 'typical' posts
        - Could be useful if wanting to test the user's brand memory
    - Record the attributes of feature
        - brand, pictorial, and text
        - Surface area of the different features in frame
            - Ex: proportional surface area of car/brand\
        - Color/contrast
- Post-survey
    - Purchase Intention
    - Brand-memory test
    - Attraction measures:

- Asked about how much market share each brand had in product category
- How much retail space they would allocate if participant was store manager
- Additional self-report of attraction
- Which was personal favorite