Varied Facial Expressions Can Win Pitches

A wide range of emotional expression pays off for more effective presentations.

Most entrepreneurs have never been told that "your face is your fortune"—a phrase usually reserved for models, actors, or social influencers. Recent research shows, however, that entrepreneurs who display emotional range through facial expressions have a real advantage in pitching business ideas to obtain funding.

A fascinating study authored by Benjamin Warnick, Blakley Davis, and TCU Neeley School of Business researchers Thomas Allison and Aaron Anglin, found a strong correlation between the range of facial expressions displayed by entrepreneurs during pitches and the resulting funding awarded. The study, published in the *Journal of Business Venturing* in 2021, applies new facial expression analysis techniques to hundreds of funding pitches, to arrive at some startling conclusions. Among them: entrepreneurs who express only positive emotions may be less successful at investment pitching than those with a wider range of expression, including what we might call "negative" emotions like fear or anger.

This study is grounded in basic emotion theory, which shows how complex emotional experiences have roots in four distinct, basic emotions. The theory also emphasizes how facial expressions influence others. This study also expands the "dual threshold" model of anger in organizations to include other emotions. Foundational as well is evolutionary psychology research showing that visual changes—in this case, from one expression to another—require different modes of viewer attention, depending on the emotional significance of the change.

Human beings have evolved to communicate emotional meanings through facial expression, and to interpret them quickly, often unconsciously. Studying the results of these exchanges is instructive not just for entrepreneurs seeking funding, but for a better grasp of effective communication in general.

Improving on incomplete pictures

Our new findings arrive in a context of research that has consistently shown correlations between entrepreneurial passion and confidence expressed in pitches and favorable evaluations by angel investors, crowdfunders, and informal investor audiences. Research has been selective, often focusing on the effect of a single emotion per study, rather than the change from one emotion to another. No prior research exists on the effect of expressing fear, anger, or sadness in entrepreneurial funding pitches.

There has also been considerable variability in methods of analyzing emotional affect. Emotions are, after all, inner states for the person experiencing them, and in interpreting their outer expression, to use a familiar phrase from marketing, "your results may vary." Methods of measurement matter a great deal.

The analytical standard for decades has been the Facial Action Coding System (FACS) developed by Ekman and Friesen. The system identifies and analyzes "action units" on the face, defined as the position of one or more facial muscles. Most of us heard as children that "it takes more muscles to frown than to smile." This is a simple physiological fact, but emotion is not a toggle switch. The complexity of "reading emotions" demands more than an either-or pinpointing of facial muscle position or movement.

Recent advances in technology have allowed for a new level of consistency and specificity in what we might call emotional metrics. To analyze the broad range of facial expressions, researchers used Emotient FACET software. Unlike earlier facial expression algorithms (e.g., FaceReader or Affectiva AFFDEX), Emotient FACET combines FACS analysis of 44 action points in facial muscle movement with "patterns of wrinkles and crevices that are created by facial expressions," correlating this complex interplay to one of four basic emotional states, along with a neutral or "rest" state—resulting in a significantly more accurate system than pure facial-point-based architecture.

These analytics have been validated against the Extended Cohn-Kanade (CK+) database of facial expressions, recognized as the standard for researchers in the field. Emotient FACET software has also proven reliable across categories of gender and race.

More faces, less bias
Filming live funding pitches brings with it serious impediments to close facial study, and presents formidable production challenges. Fortunately, a wide swath of humanity has put a face to their entrepreneurial needs through online crowdfunding platforms. The pitch video is the centerpiece of most campaigns, and many of these videos include footage of entrepreneurs making direct appeals to potential investors in an idea, product, or venture of some kind.

The audience for crowdfunding pitches is as varied as Internet users worldwide, but most potential funders lack expertise in evaluating business ventures, invest little time in

pitch analysis, and commit relatively small contributions to projects they choose to fund. Subjective information and emotional appeals are especially relevant in crowdfunding. From a sampling frame that included all Kickstarter campaigns from 2009 - 2016, researchers narrowed to an initial random sample of 1000 pitch videos, with selection criteria narrowing further to 489 videos that featured a human face or faces talking to camera. From there, screening for the highest frequency of each of the four "basic" emotions—happiness, anger, fear, and sadness—identified four sets of 50 funding pitches. These 200 videos formed the final study sample, analyzed frame by frame.
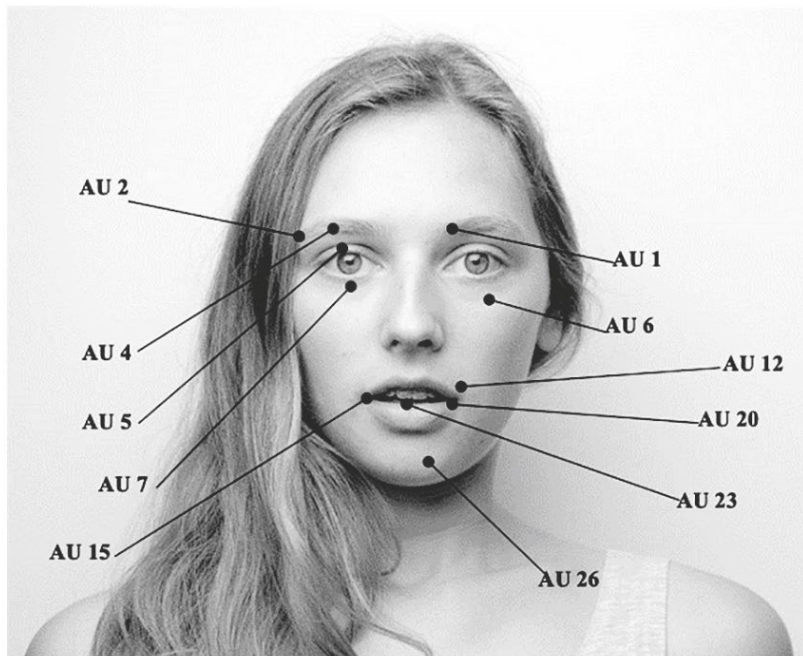
AU	Description	Facial Muscle
1	Inner brow raiser	*Frontalis, pars medialis*
2	Outer Brow Raiser (unilateral, right side)	*Frontalis, pars lateralis*
4	Brow Lowerer	*Depressor Glabellae, Depressor Supercilli, Currugator*
5	Upper Lid Raiser	*Levator palpebrae superioris*
6	Cheek Raiser	*Orbicularis oculi, pars orbitalis*
7	Lid Tightener	*Orbicularis oculi, pars palpebralis*
12	Lip Corner Puller	*Zygomatic Major*
15	Lip Corner Depressor	*Depressor anguli oris (Triangularis)*
20	Lip stretcher	*Risorius*
23	Lip Tightener	*Orbicularis oris*
26	Jaw Drop	*Masetter; Temporal and Internal Pterygoid relaxed*

Fig. 1. Action units (AU; adapted from the Facial Action Coding System; Ekman et al., 2002).
Note: The measurement of each basic emotion is comprised of the following AUs: happiness (AU6 + AU12), anger (AU4 + AU5 + AU7 + AU23), fear (AU1 + AU2 + AU4 + AU5 + AU7 + AU20 + AU26), and sadness (AU1 + AU4 + AU15).

Historically, this kind of work would be done manually by trained experts, coding facial action points according to FACS analysis. But the combination of fatigue and the coders' own affective states can introduce error and bias of many kinds into the data.

Emotient FACET software analyzes each frame of video, delivering an "evidence score" that calculates the odds of expressions being present, moment by moment.

Objects, codes, and themes

If basic emotion theory, the dual threshold theory, and evolutionary theory give us a framework for understanding the connection between facial expressions and four fundamental emotions, there is a further connection to make with the "objects" of emotional response. In the case of funding pitches, these objects are the words describing entrepreneurs' ideas and needs.

Facial expressions in a pitch are often coincident with speech specific to a pitch topic (e.g., customer problem/pain, product description, need for funding). These topics provide insight into the object(s) of each expression.

Working independently, the authors of the Neeley study analyzed the set of 50 videos identified for each emotion, transcribing the words concurrent to each facial expression, as well as the words before and after, to aid contextual understanding. Codes were assigned to specific statements (as objects of facial expression). The coded language was then grouped into larger themes, all aggregated as "objects" of facial expression of the four basic emotions.

The authors met regularly to compare codes and reach full consensus, as each worked through all 200 source videos. This collaborative review is both a check on subjectivity and an acknowledgement of its inevitability in the study of human emotion.

A range of emotions and findings

The technical complexity of the study, with its "first-order codes" and "second-order themes," distilled and clarified a vast amount of data about emotional expression into some strong but surprising conclusions. Its usefulness will need to be further clarified, but there is much to learn from the findings themselves.

The research shows, as we might expect, that the basic "positive" emotion, happiness—encompassing other emotional themes such as passion, team pride, communality, etc.—is by far the most prevalent object of facial expression among the entrepreneurial subjects studied. More unexpected, however, were the study's insights into the effect of "negative" emotions.

Fear was the object of the next-most frequently displayed facial expressions in these pitch videos, showing up when entrepreneurs discussed funding needs or concerns,

past or potential threats to their projects, or the uncertainty of successfully realizing their goals or dreams.
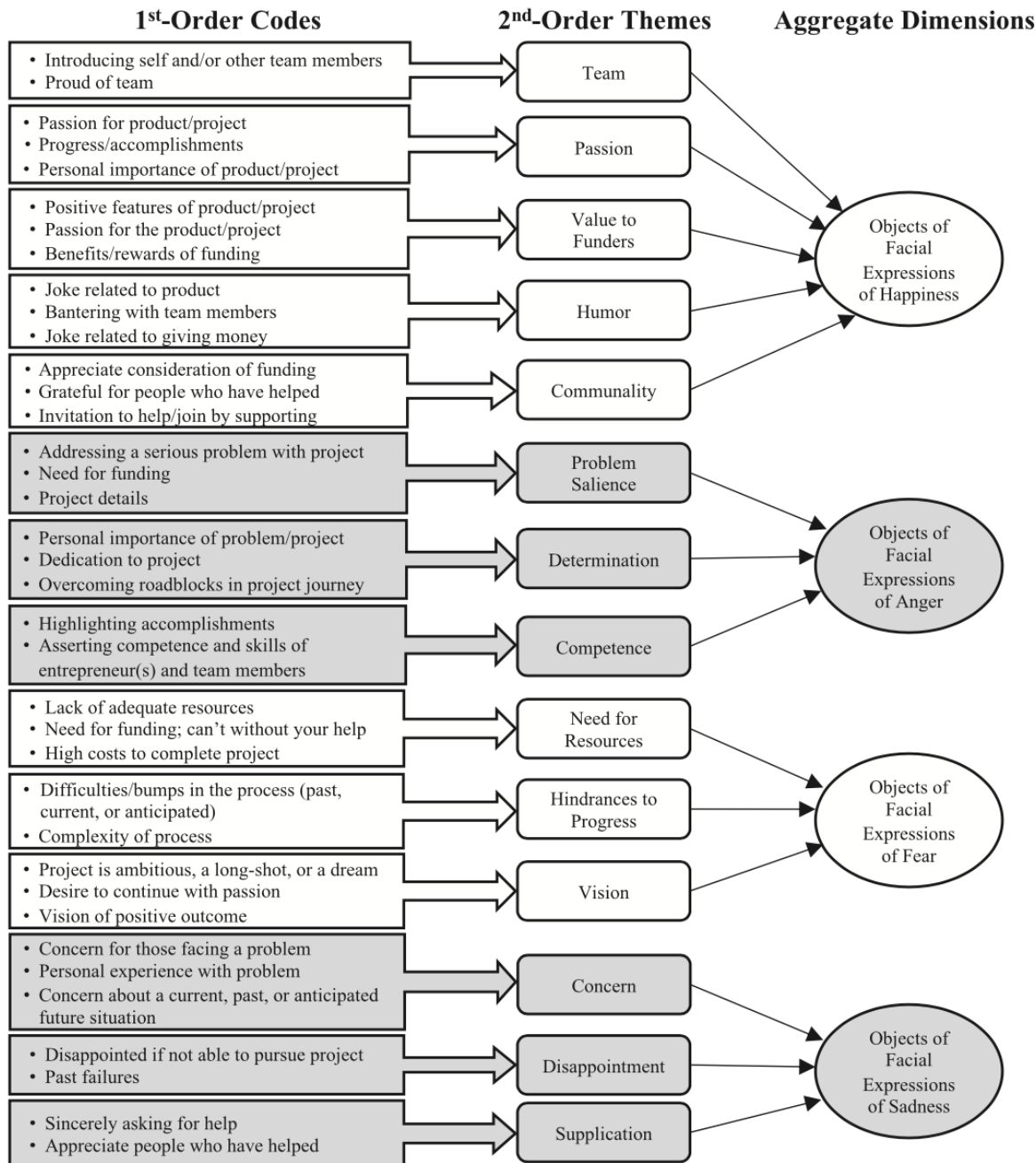

Fig. 2. Qualitative study of entrepreneurs' facial expressions of emotion in funding pitches: Data structure.

Anger, though less commonly expressed than fear, was widely in evidence during descriptions of problems that entrepreneurs were combatting. For example, a filmmaker pitching a documentary about child brides in Yemen expressed anger when describing

the problem as well as the challenges of making the film. Facial expressions of anger also accompanied less emotionally clear statements, grouped under such themes as determination or competence, when entrepreneurs stressed their resolve or capabilities as worthy of viewer support.

Less often expressed, but still seen in more than 120 of the 200 pitch videos, were facial expressions of sadness. These were displayed while communicating concerns, disappointments, or the gravity of a sincere need for help. It may be no spoiler alert for some readers to learn that sadness, uniquely among the four basic emotions, delivered less effective results, even correlating to lower-than-average funding.

Anger and fear, however, especially in naturally-occurring shifts of mood over the course of a presentation, both correlate to higher-than-average funding. These are simplifications of the data (e.g., the study found limitations in change-of-expression frequency as well as other mitigating factors). But the general point is clear: express yourself, entrepreneur.

From affect to effect

A simple summary of these findings might be: for entrepreneurs pitching investors, a wider range of emotional *affects* can produce a bigger range of financial *effects.* As noted, that range extends on either side of average. Too frequent changes in expression, or too-heavy reliance on facial expressions that read as sad, and funding pitch results may come up short. Or so the early data suggests.

It seems obvious that, in a desire to win people to a cause, what we think of as positive emotions would be expressed more often than what we think of as negative ones. But this is where the Neeley study breaks from previous research on the role of emotional expression in business presentations. No prior study has applied basic emotion theory across this range of facial expressions (or the frequency of change between them) in pitch presentations. This is also the first study to draw a clear correlation between a wider range of emotional expression in pitches and success in securing funding.

More to come

As with all good science, the territory opened up here offers a wide horizon for further investigation. The methodology of this study built in controls for many variables (age, gender, length of video, etc.), but other variables suggest new directions for research into human emotion. For example, the study design here was strictly focused on the facial expression of emotion, not whether that expression is a true reflection of emotions experienced by the subjects. A study on emotional authenticity vs. more performative "impression management" might reveal some very different, useful findings.

This kind of research, like facial expressions reflecting emotional states, is expressive of inner imperatives. The Neeley School of Business has organized itself around principles of human potential, leadership, and making innovation personal. Other business schools and research organizations are exploring these imperatives as well. New and deeper insights from the human, emotive aspects of business are sure to follow.