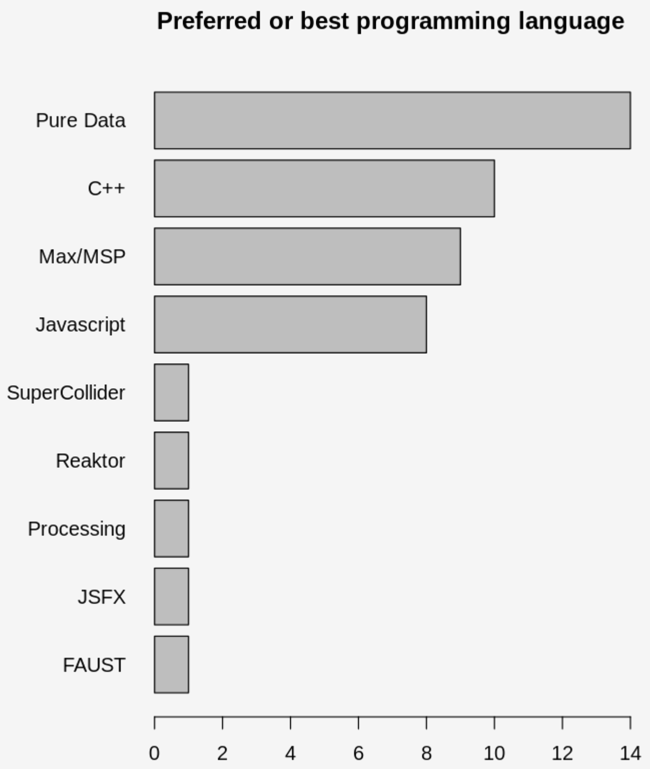
Programming Practices Among *Interactive Audio Software* Developers

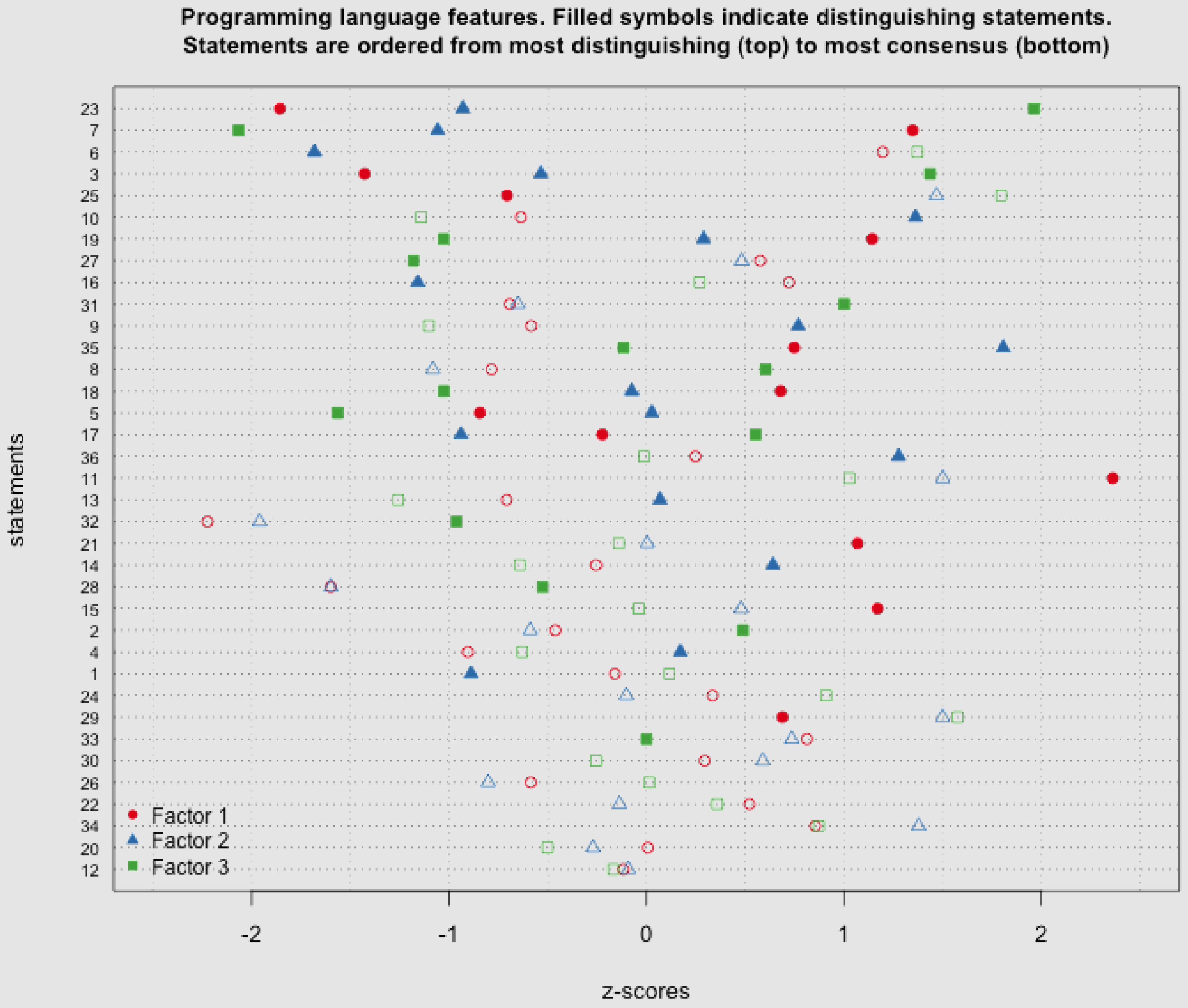
Andrew Thompson, Gyorgy Fazekas & Geraint Wiggins

Development of domain specific languages for creating music and audio applications has been motivated by some technical challenge as in the case of SuperCollider's efficient garbage collector or ChucK's time-based operations. What is now becoming common is the consideration for the human factors that affect both a language's design and its users.

We present a survey that seeks to uncover what programming practices exist among **interactive audio software developers** by designing a Likert scale to determine tendency towards exploratory programming or software engineering practice, and a *Q methodological study* to discover which language features are most impactful to that practice.

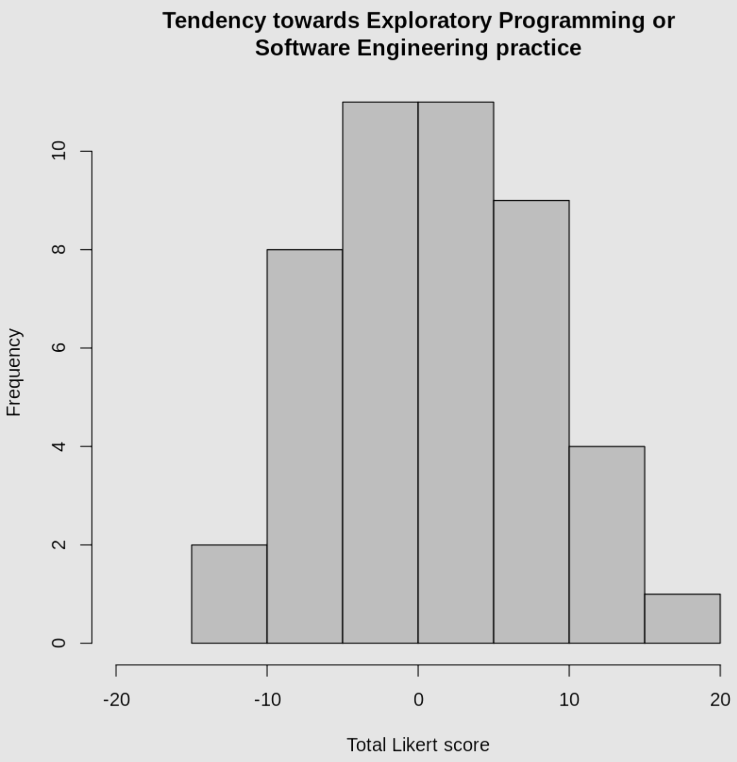
Our findings support the idea that programmers wear many "hats" while programming. The results from the Likert scale show **programmers are adopting a multi-practice approach**, and that this occurs regardless of language choice or experience. The results of our Q factor analysis show **programmers choose different languages and features to support this multi-practice development.**


Preferred or best programming language


Programming language features. Filled symbols indicate distinguishing statements. Statements are ordered from most distinguishing (top) to most consensus (bottom)

Features such as **immutability**, **undefined/null**, and **static typing** appear to be divsive among participants, with some factors strongly favouring them and others finding them very negatively impactful to their practice.

The 36 Q-sort items can be found here: b.link/prog-practice-q-sort


Tendency towards Exploratory Programming or Software Engineering practice

A lower total Likert score indicates a preference towards exploratory and bricolage programming practices, while a higher total score indicates a preference toward software engineering practice.

The 21 Likert items can be found here: b.link/prog-practice-likert

MEDIA & ARTS TECHNOLOGY

EPSRC+AHRC Centre for Doctoral Training in Media and Arts Technology EP/L01632X/1

Arts & Humanities Research Council

EPSRC Engineering and Physical Sciences Research Council

Queen Mary University of London