Iconicity in Suprasegmental Variables: The Case of Archetypal Hollywood Characters of the 1940s-50s

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Introduction

• The Golden age of Hollywood (1927-1963) and the classic Hollywood style: narrative clichés and archetypes

• Distinctive film genres and archetypal female characters: femme fatales in film noir, independent brunettes in screwball comedy, and dumb blondes in musical/romantic comedies

• The interaction between linguistic variables and other semiotic resources in the visual media
Main Argument

• Many of the suprasegmental variables (pitch, prosody, voice quality) in classic Hollywood cinema iconically and sound-symbolically represent the major archetypes of the era
• Other visual, cinematic devices worked to actively develop and fortify this iconic relation
• Due to this ‘iconization’ process, the underlying ideologies behind the linguistic variables were more easily naturalized, enabling their wider dissemination
Methodology

• Acoustic and statistical analyses of pitch and voice quality variables produced by actresses portraying the three archetypes in 15 films (5 from each of the 3 genres)

• Additional qualitative analyses of relevant pitch contours and film scenes
Roadmap

• Iconicity and the notion of ‘iconization’
• Selection of data
• Analysis of data and results
• Iconicity in film noirs, screwball comedies, and musical comedies
• Conclusion
Iconicity and iconization

- Peircean tripartite distinction of signs (icons, indices, symbols)
- Iconicity in language: diagrammatic, imagic, metaphoric
- Iconicity in sounds: works on sound symbolism such as the bouba-kiki phenomenon (e.g. Maurer et al. 2006), the Frequency code (Ohala 1994) – mostly deals with imagic iconicity (although see Fischer 1999 for instances of diagrammatic iconicity in sounds)
Iconicity and iconization

• Iconicity in sociolinguistic variation (e.g. Eckert 2010, Zhang 2008)
• The ideological underpinnings of iconicity
• Iconization: ‘linguistic features that index social groups or activities’ come to be perceived as ‘iconic representations of them, as if a linguistic feature somehow depicted or displayed a social group’s inherent nature or essence (Irvine and Gal 2000: 37).’
Iconicity and iconization

• The iconization process binds the linguistic image and the social image ‘together in a linkage that *appears to be* inherent (Irvine and Gal 2000: 38)’

• The metadiscursive activity of finding inherent similarity between a social persona and a set of linguistic variables
Iconicity and iconization

• In cinema, the linkage between the linguistic and the social image can be more consciously initiated, mediated, and fortified by the actual imagery on screen.

• Various visual, cinematic devices such as mis-en-scene, shot compositions, lighting, etc., can work to naturalize the potential link between the linguistic cues and the characters/personalities of the archetypes that they index.
Selection of the data

- Between 1940s-50s
- Archetypes determined by the film studies literature (e.g. Kuhn and Radstone 1990)
- Actresses amenable to the study of intra-speaker variation

<table>
<thead>
<tr>
<th>dumb blonde</th>
<th>femme fatale</th>
<th>independent</th>
<th>brunette</th>
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<tbody>
<tr>
<td>Marilyn Monroe</td>
<td>Rosalind Russel</td>
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<td>Kim Novak</td>
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<td>Myrna Loy</td>
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<td>Jayne Mansfield</td>
<td>Barbara Stanwyck</td>
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### Selection of the data

#### Final list of films

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<td>Marilyn Monroe</td>
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<td><em>Some like it hot</em> (1959)</td>
<td><em>Niagra</em> (1953)</td>
<td><em>His girl Friday</em> (1940)</td>
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<td>Myrna Loy</td>
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<td><em>Slightly Dangerous</em> (1943)</td>
<td><em>The Postman Always Rings Twice</em> (1946)</td>
<td><em>The Bachelor and the Bobby-Soxer</em> (1947)</td>
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<td>Jayne Mansfield</td>
<td>Lauren Bacall</td>
<td>Lauren Bacall</td>
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<td><em>Kiss them for me</em> (1957)</td>
<td><em>The Big Sleep</em> (1946)</td>
<td><em>Designing Woman</em> (1957)</td>
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<tr>
<td>Marie Wilson</td>
<td>Barbara Stanwyck</td>
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</tr>
<tr>
<td><em>My Friend Irma</em> (1949)</td>
<td><em>Double Indemnity</em> (1944)</td>
<td><em>Ball of Fire</em> (1941)</td>
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Selection of the data

• Extracting 30 to 50 utterances (exhaustive extraction, provided that the sound quality was optimal) per film for each actress portraying a single archetype (total of 50 * 15 = around 750 tokens)

• The sound extraction was done using the DVD Audio Extracter, with a 22050Hz sampling rate and 16-bit quantization

• Praat scripts + manual inspection
Measurements

• Pitch and prosody related variables
  – Maximum F0 value of the utterance
  – Minimum F0 value of the utterance
  – F0 standard deviation value of the utterance

• Voice quality related variable
  – H1-H2 value of each vowels in the utterance

• Additional qualitative inspections of pitch/intensity contours and spectrograms
Statistical results: Max F0

- Dumb blonde > independent brunette > femme fatale
- Mixed effects linear regression model with Max F0 as the dependent variable, archetypes and sentence types (declarative, yes/no question, wh-question, exclamation) as independent variables and actresses as a random effect
- The dumb blonde has the highest pitch threshold in a given utterance, the independent brunette the second highest, and the femme fatale the lowest
- The difference between all three archetypes were significant (at least $p < 0.05$)
Statistical results: Min F0

- Dumb blonde > femme fatale > independent
- Mixed effects linear regression model with Min F0 as the dependent variable, archetypes and sentence as independent variables and actresses as a random effect
- The difference between the dumb blonde and the other two archetypes were significant (p < 0.01 and p < 0.001 respectively)
- Independent brunette has the lowest pitch drop in a given utterance, the femme fatale the second lowest, and the dumb blonde the highest
Statistical results: F0 standard deviation

- Dumb blonde > independent brunette > femme fatale

- Mixed effects linear regression model with Min F0 as the dependent variable, archetypes and sentence types as independent variables and actresses as a random effect

- Femme fatale had significantly lower pitch variability than the other two archetypes
Statistical results: H1-H2

• The H1-H2 value calculates the difference in amplitude between the first harmonic and the second harmonic of a sound, and is a measure of the spectral tilt of a given sound (Gordon and Ladefoged 2001)

• Higher H1-H2 value is correlated with breathiness, lower H1-H2 value is correlated with creakiness, and modal voice is situated in between (breathy: 🎧 creaky: 🎧)

• Other factors included: utterance position of the vowels, F1, F0, and log duration of the vowels
Statistical results: H1-H2

- Dumb blonde had the highest H1-H2 value (most breathy), femme fatale the second highest (quite breathy) and independent brunette the lowest value (modal to creaky voice)

- The difference between the independent brunette and the two other archetypes were significant (p < 0.01 and p<0.01 respectively), but the difference between the femme fatale and the dumb blonde were not significant

- Mixed effects linear regression models with H1-H2 as the dependent variable, F1, F0, log duration, and utterance position of the vowels and independent variables, and actresses as random effect
Summary of the results

• Dumb blonde has the highest pitch
• Independent brunette has the lowest pitch drops and uses creaky voice
• Femme fatale has lowest pitch variability (monotonous intonation) and low pitch
Intersection of the variables

- **Femme Fatale**
  - monotonous intonational contour
    - (low F0 standard deviation)

- **Screwball Heroine**
  - modal to creaky voice
    - (low H1-H2)

- **Dumb Blonde**
  - fluctuating intonational contour
    - (high F0 st. dev.)

- **breathy voice**
  - high pitch
    - (high Max F0) (high Min F0)
Intra-speaker variation

e.g. F0 standard deviation
Iconicity in film noir and femme fatale

• Femme fatales ‘are central to the intrigue of the films (in film noir), and are furthermore usually not placed safely in any of the familiar (female) roles (Kaplan 1998: 16)’

• Film noir is more interested in style than theme

• Film noir as a genre is tightly defined by stylistic conventions rather than thematic conventions
Iconicity in film noir and femme fatale

• Heavily influenced by its cinematic precursor, German expressionism
• Monochromatic lighting
• The preference of straight lines (Shrader 1986) or striations over curves (compositions made out of vertical or horizontal stripes from train tracks, window blinds, grocery aisles, street lamp posts, etc. often figure in film noir scenes)
Iconicity in film noir and femme fatale 

• The majority of the scenes are lit for night 
• Compositional tension is preferred to physical action, as opposed to a related film genre, namely, ganster film, that prefers dynamic physical actions 
• Various plays with shadows
Low pitch and shadows

• Femme fatale’s low pitch iconically represents her dominance, dark nature, and her non-normative femininity
• This potential link is strengthened in various film noir scenes with shadows and dark alleyways

Double Indemnity
Low pitch and shadows

The Postman Always Rings Twice

Double Indemnity
Scenes from *The Big Sleep*, another film noir canon
Low pitch variability and straight lines

• Low pitch variability (cf) quantitative analysis) correlated with flat, monotonous intonational contour without salient pitch accents

• This non-undulating intonational contour is iconically linked to the calm, unperturbed character of femme fatale

• This link is again fortified by the persistent imagery of straight lines (as opposed to curves)
Low pitch variability and straight lines

We can make manhattan.

But I don’t want to bore you.

Marilyn Monroe as a dumb blonde in *Some Like it Hot*

Marilyn Monroe as a femme fatale in *Niagara*
Low pitch variability and straight lines

Horizontal striations in *Double Indemnity*
Low pitch variability and straight lines

Niagara

Double Indemnity
Low pitch variability: Barbara Stanwyck

Barbara Stanwyck as a femme fatale in *Double Indemnity*

Barbara Stanwyck as an independent brunette in *Ball of Fire*
Low pitch variability and straight lines

The Big Sleep

Double Indemnity

The Big Sleep
The absence of declination

- Declination refers to the gradual lowering of F0 within an intonational phrase.
- The universality of such declination pattern in speech has been frequently noted in works such as Pierrehumbert (1979).
- The utterances produced by the femme fatale archetypes seem to have highly attenuated declination slopes.
The absence of declination

But I like the way you said it better.

No, it’s never happened before.

Novak as a dumb blonde in *Phffft!*

Novak as a femme fatale in *Vertigo*
Violation of linguistically natural tendencies

• There is a clear violation of linguistic expectations in femme fatale that mirrors her violation of social conventions

• This is again reflected, developed and further fortified in the eerie and non-normative compositions of the mis-en-scenes in film noir
Iconicity in musical comedy and dumb blonde

• The dumb blondes figure quite prominently in several seminal musical comedies (e.g. Marilyn Monroe in *Gentlemen Prefer Blondes*)

• They are most unambiguously defined by ‘their combination of overt “natural” sexuality (of which they may or may not be aware) with a profound ignorance and innocence manifest in an inability to understand even the most elementary facts of everyday life (Kuhn and Radstone 1990: 47)

• Musical comedies: scintillating lightings and the profusion of bright colors
High pitch and bright lighting/color

• High pitch and small size/child-like behavior
  – high pitch is correlated with smaller vocal folds and subsequently, smaller size: e.g. children
  – iconically linked to her elated mood and childlike behavior

• High pitch and upper body area
  – whereas the sexuality of the femme fatale is mostly represented by the imagery of her lean and straight ankles and legs, that of the dumb blonde is predominantly represented by the imagery of her bouncy and curvy bust section
High pitch and bright lightings/ warm colors

Monroe as a dumb blonde in *Some Like It Hot*  
Monroe as a femme fatale in *Niagara*
(top) Jayne Mansfield as a dumb blonde in *Kiss Them for Me*

(right) Barbara Stanwyck as a femme fatale in *Double Indemnity*
Fluctuating intonational contour and scintillating lightings

• Dumb blondes have highly fluctuating intonational contours

• Just as in the case of femme fatales in film noirs, the undulating pitch contour of the dumb blonde is again directly and iconically linked to her naively enthusiastic and buoyant character and the scintillating lightings of musical comedies
Fluctuating intonational contour and scintillating lightings

On a day like this it’s lovely out!

Marilyn Monroe as a dumb blonde in *Some Like It Hot*
Fluctuating intonational contour and scintillating lightings
Iconicity in screwball comedies and independent brunettes

- Independent brunettes are also non-conventional female characters, characterized by independence, high intelligence, and verbal wit.
- The screwball comedy as a distinctive genre is characterized by a female that dominates the relationship with the male central character, whose masculinity is challenged (Gehring 1986: 85) – however, emotionality is involved.
- The two protagonists usually engage in what is often called ‘a humorous battle of the sexes’.
Battle of sexes in screwball comedy

Who wears the pants in your family?

Trailer for Adam’s Rib
Low pitch, creak, and non-normative femininity

• Femme fatales and independent brunettes both deviate from normative femininity (one version of this normative femininity is perhaps well represented by the dumb blonde archetype)

• This may explain their shared usage of low pitch (as manifested by their significantly lower Max F0 and Min F0 values)

• Independent brunette also frequently uses creak, usually associated with masculinity
Juxtaposition of comparable pitch ranges

• The use of low pitch by the independent brunePe is quite often juxtaposed with the use of relatively high pitch by the male protagonist

• The independent brunePe’s egalitarian ideals

• Many scene compositions where the two characters are butting heads with each other and their silouettes are juxtaposed in equal size and standing
Dyad configurations

Katharine Hepburn as an independent brunette in *Adam’s Rib*
Equal stature

Barbara Stanwyck in *Ball of Fire*
Rosalind Russel As an Independent brunette in *His Girl Friday*
Conclusion

• Actresses used systematically different suprasegmental variables in order to index pivotal archetypal characters of the era, such as the dumb blonde, the femme fatale, and the screwball heroine

• The tendency for suprasegmental cues to correlate with archetypes was shown to hold both at the level of intra-speaker variation and also at the level of inter-speaker variation
Conclusion

- The dumb blonde archetype is characterized by high pitch, high degree of fluctuation in intonational contour and breathy voice.
- The femme fatale archetype is characterized by low pitch, low degree of fluctuation in intonational contour (reflected by her monotonous intonation lacking a declination pattern) and breathy voice.
- The screwball heroine archetype is characterized by low pitch, high degree of fluctuation in intonational contour, and modal to creaky voice.
Conclusion

• The choice of linguistic variables depending on the archetype is not arbitrary in that it creates an iconic tie with the character of the archetype and the visual imagery on screen

• Via this process of iconization, linguistic variation comes to be situated within the broader semiotic system of the film, and the implicit ideological message it conveys is fortified by the film imagery
Conclusion

• These iconized linguistic variables have a great impact on the construction of style in real life communication as well, due to their greater potential to develop into more stable registers (in the sense of Agha 2003)

• Classic archetypes such as femme fatales and screwball heroines are also progenitors of influential contemporary archetypes such as cougars and urban career women, and the linguistic variables of the progenitors are often inherited by the contemporary descendants in interesting packages
References

References

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