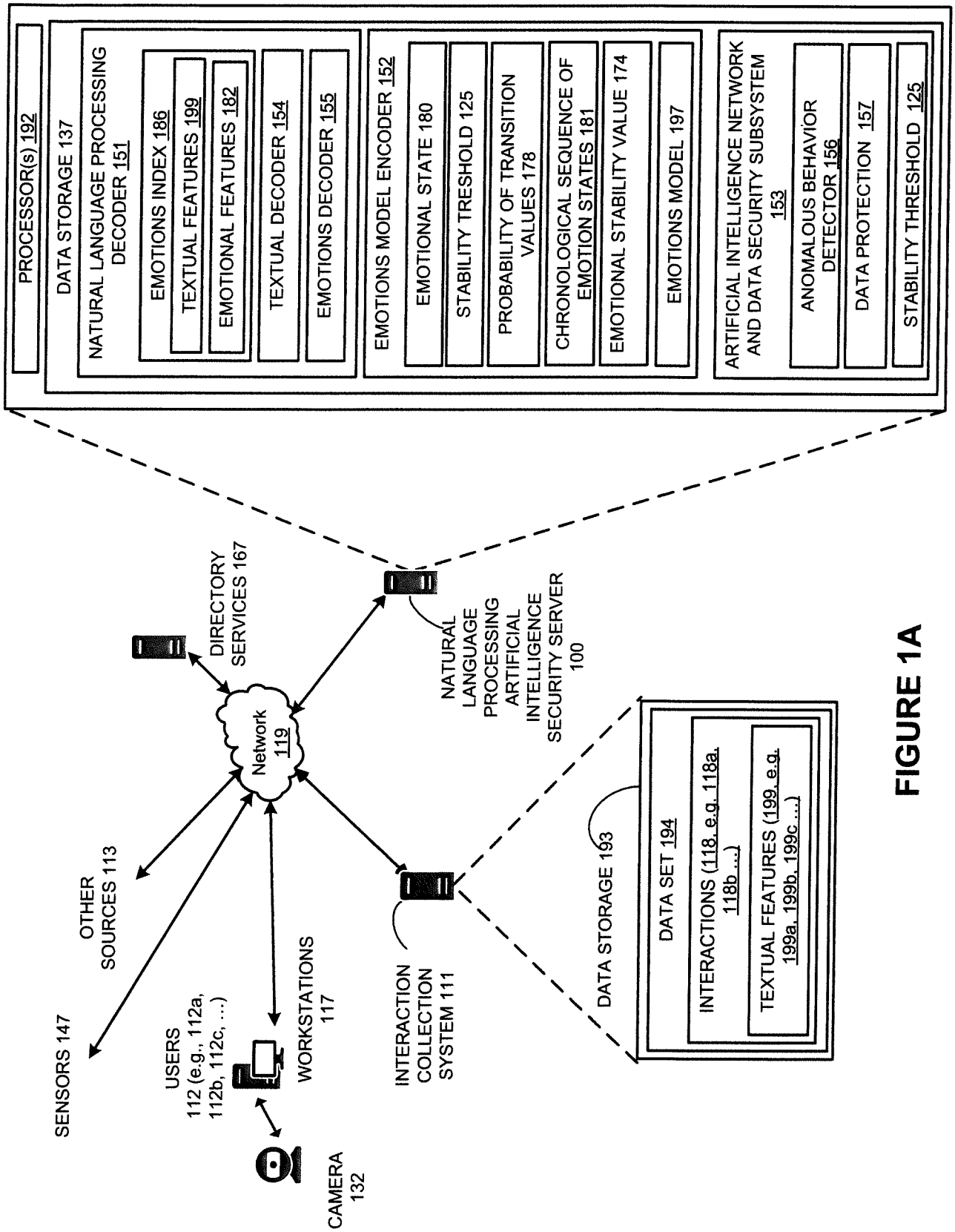

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NATURAL LANGUAGE PROCESSING DECODER 151
EMOTIONS INDEX 186
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EMOTIONAL FEATURES 182
TEXTUAL DECODER 154
EMOTIONS DECODER 155
EMOTIONS MODEL ENCODER 152
EMOTIONAL STATE 180
STABILITY TRESHOLD 125
PROBABILITY OF TRANSITION VALUES 178
CHRONOLOGICAL SEQUENCE OF EMOTION STATES 181
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OTHER SOURCES 113
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CAMERA 132
INTERACTION COLLECTION SYSTEM 111
DATA STORAGE 193
DATA SET 194
INTERACTIONS (118, e.g. 118a, 118b ...)
TEXTUAL FEATURES (199, e.g. 199a, 199b, 199c ...)

FIGURE 1A

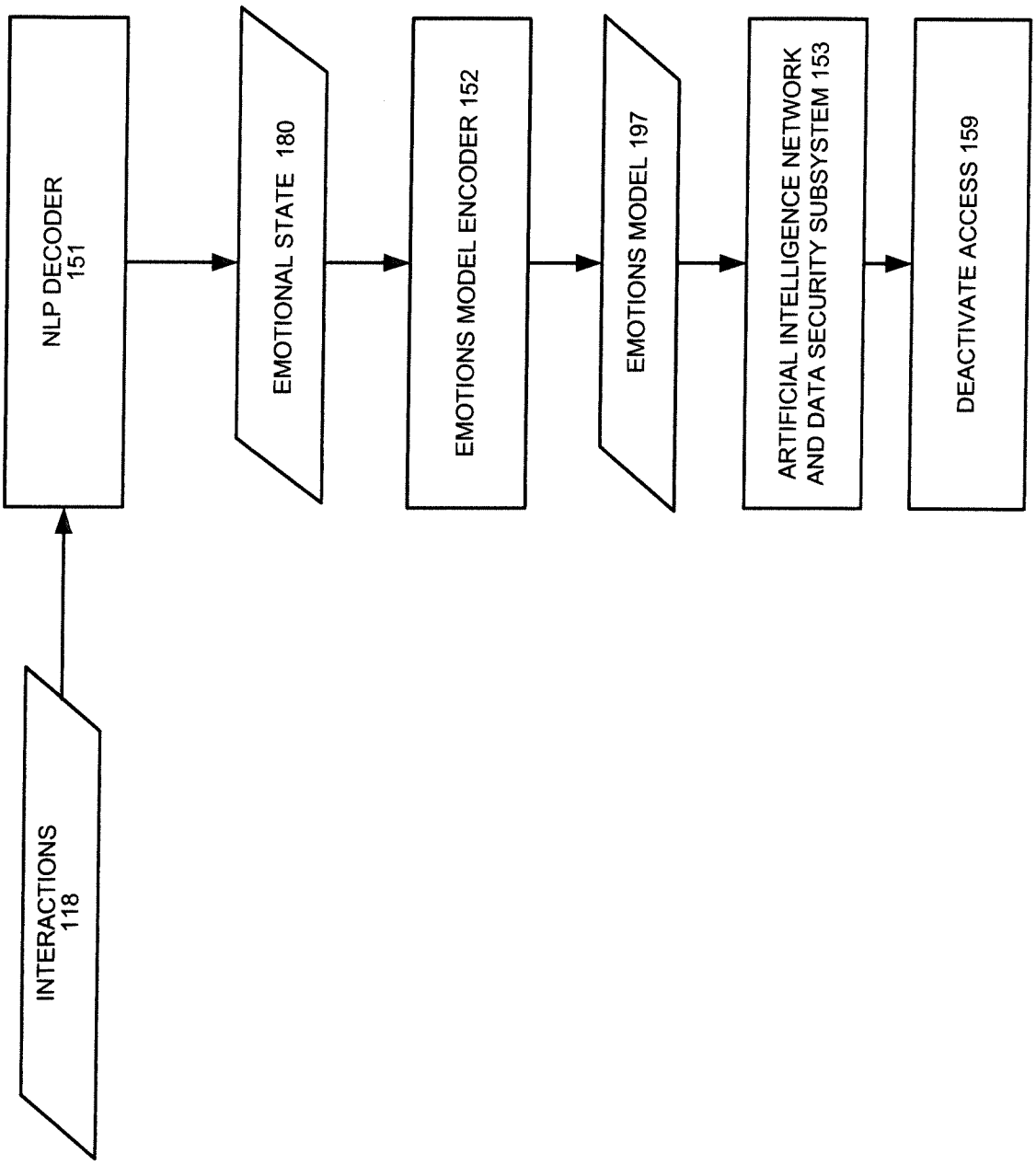

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NLP DECODER 151
EMOTIONAL STATE 180
EMOTIONS MODEL ENCODER 152
EMOTIONS MODEL 197
ARTIFICIAL INTELLIGENCE NETWORK AND DATA SECURITY SUBSYSTEM 153
DEACTIVATE ACCESS 159

FIGURE 1B

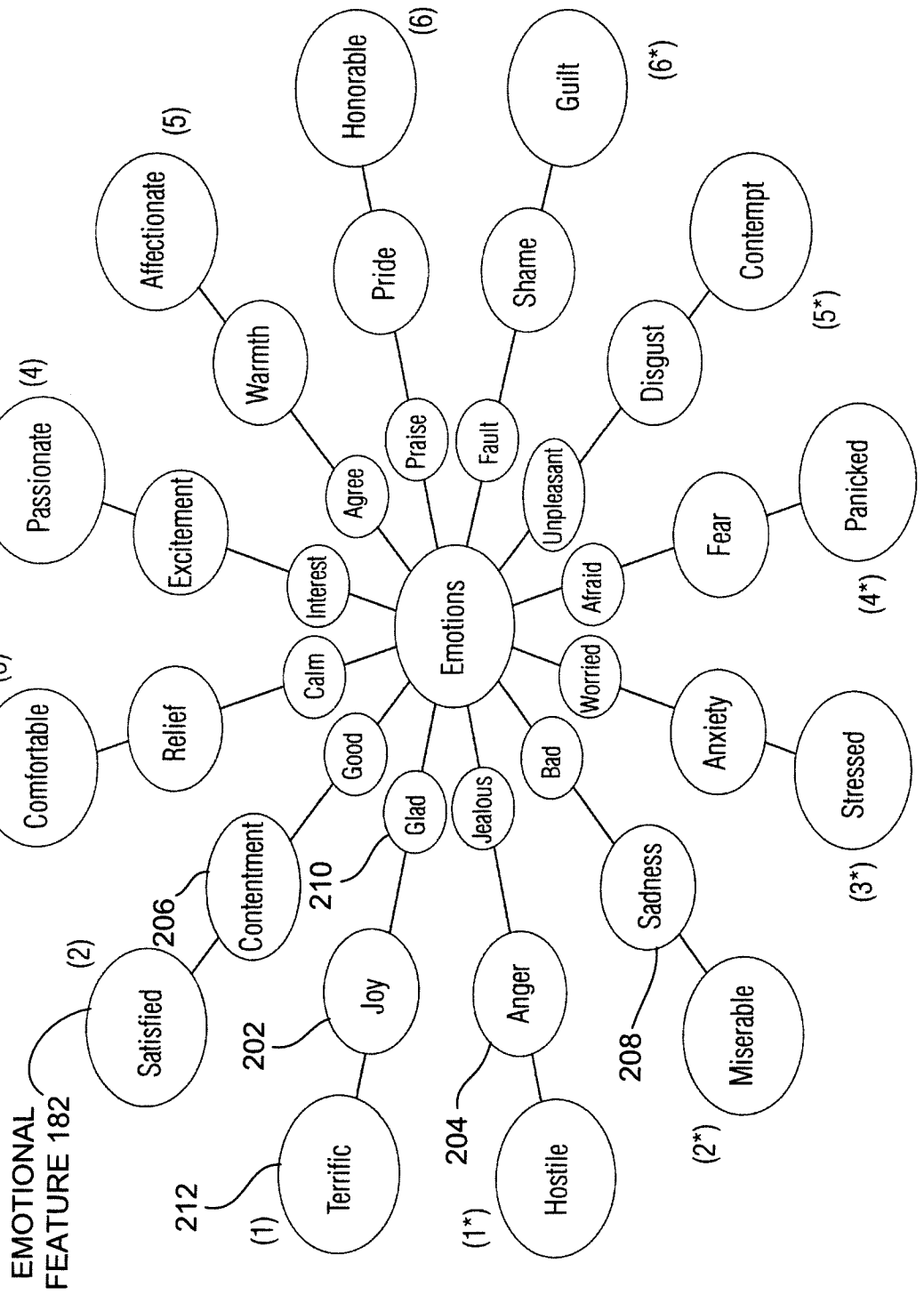

EMOTIONAL FEATURE 182
Emotions
Interest
Calm
Good
Glad
Jealous
Bad
Worried
Afraid
Unpleasant
Fault
Praise
Agree
Excitement
Relief
Contentment
Joy
Anger
Sadness
Anxiety
Fear
Disgust
Shame
Pride
Warmth
Passionate
Comfortable
Satisfied
Terrific
Hostile
Miserable
Stressed
Panicked
Contempt
Guilt
Honorable
Affectionate
(1)
(1*)
(2)
(2*)
(3)
(3*)
(4)
(4*)
(5)
(5*)
(6)
(6*)
202
204
206
208
210
212

FIGURE 2

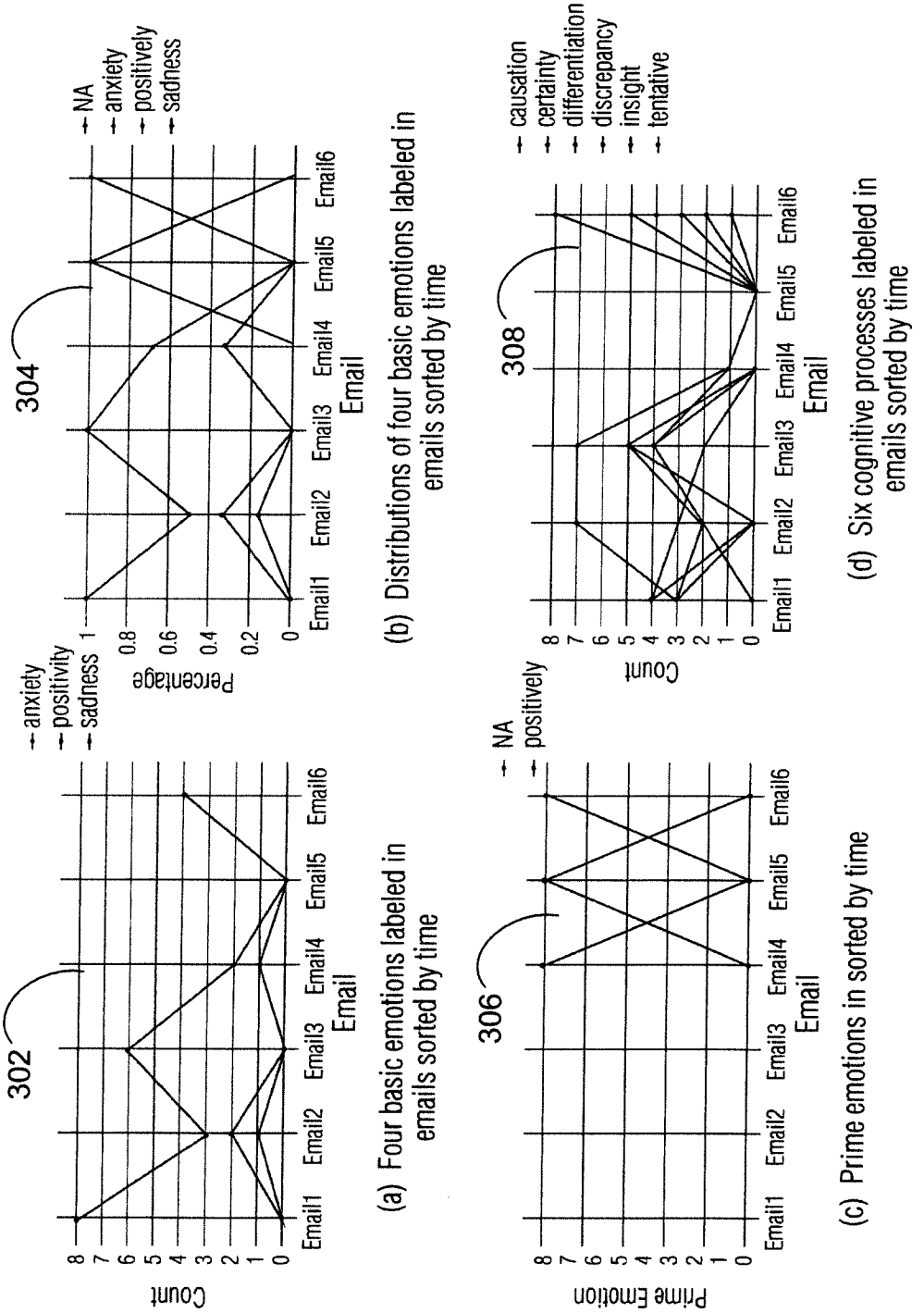
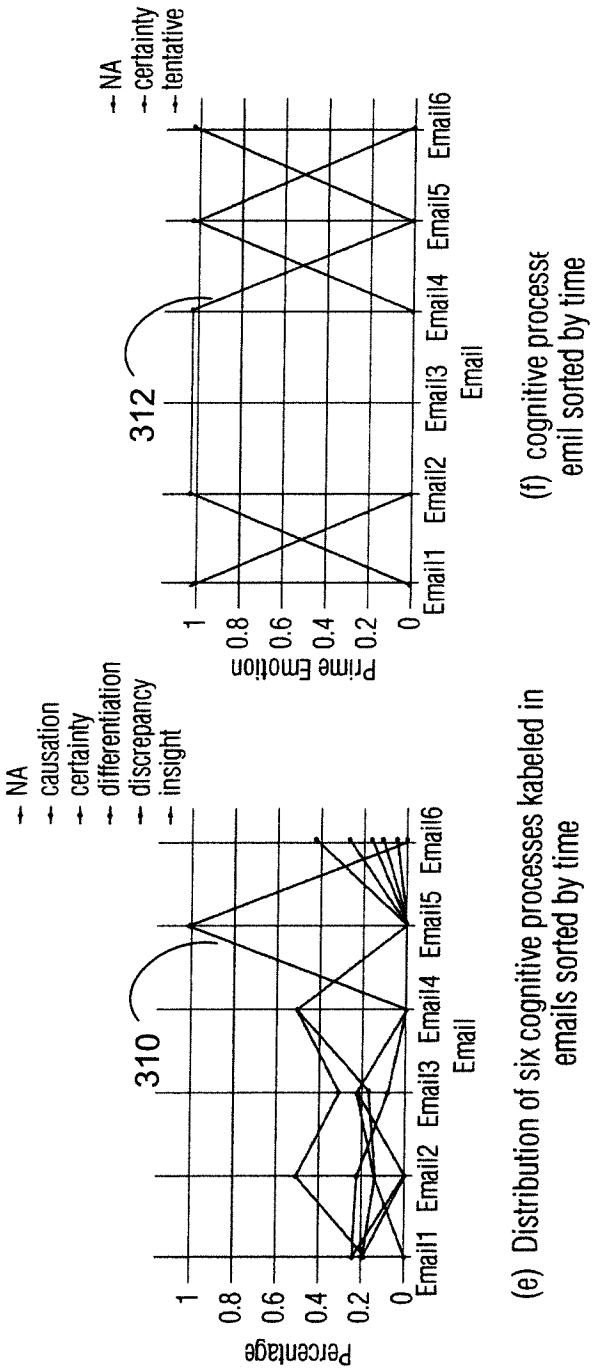

302
anxiety
positivity
sadness
Count
Email1
Email2
Email3
Email4
Email5
Email6
Email
(a) Four basic emotions labeled in emails sorted by time
304
NA
anxiety
positively
sadness
Percentage
(b) Distributions of four basic emotions labeled in emails sorted by time
306
NA
positively
Prime Emotion
(c) Prime emotions in sorted by time
308
causation
certainty
differentiation
discrepancy
insight
tentative
Count
(d) Six cognitive processes labeled in emails sorted by time

FIGURE 3A



(e) Distribution of six cognitive processes kabeled in emails sorted by time

(f) cognitive processt emil sorted by time

FIGURE 3B

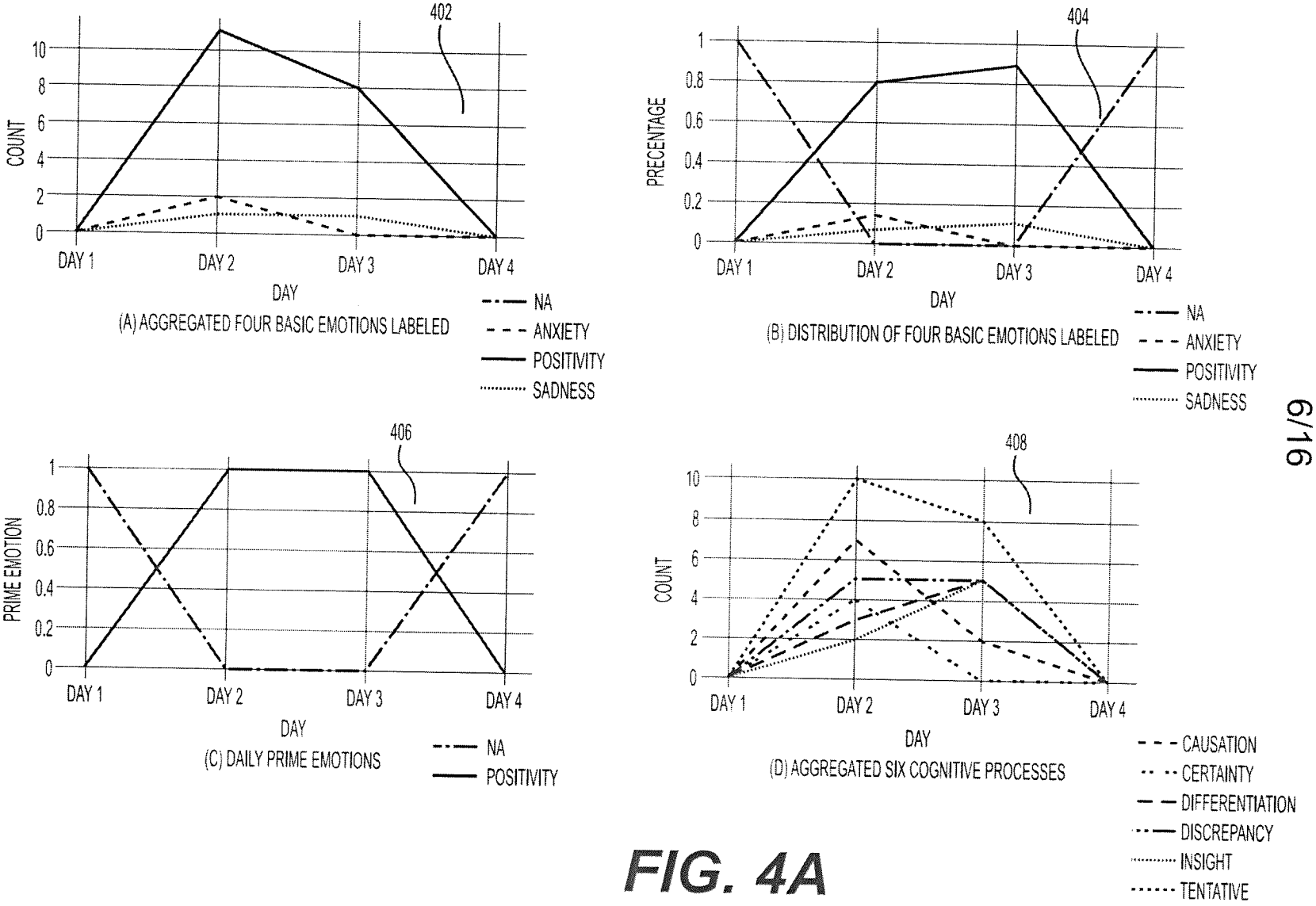
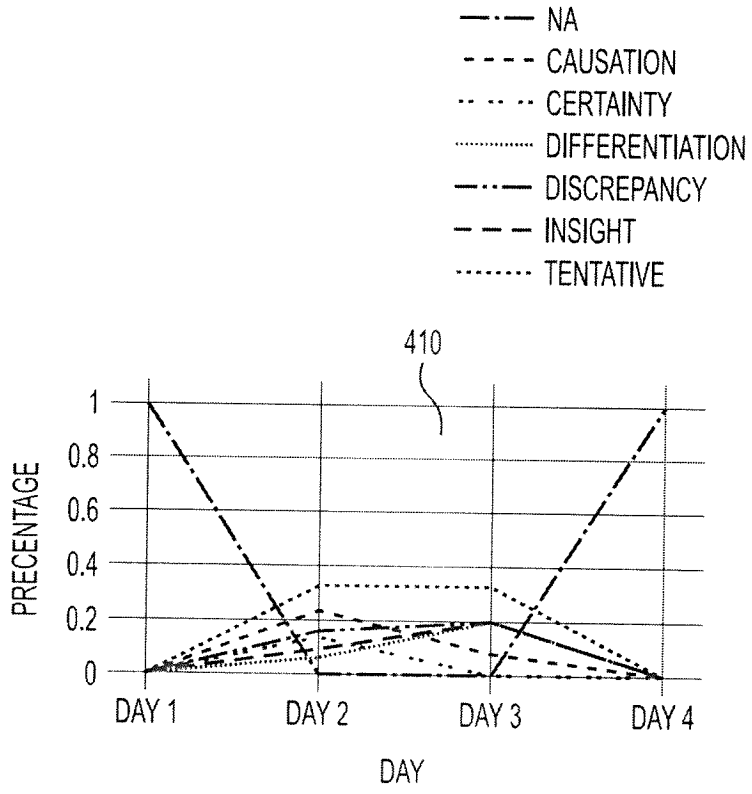
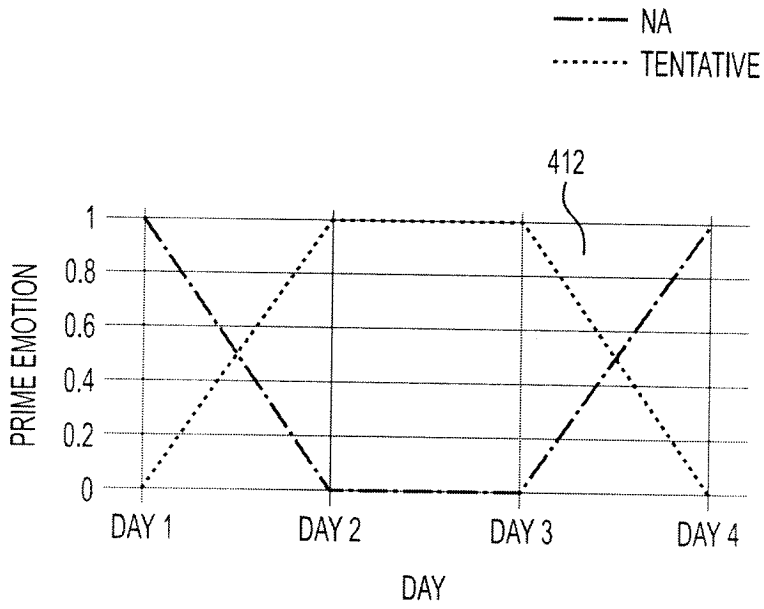

402
COUNT
10
8
6
4
2
0
DAY 1
DAY 2
DAY 3
DAY 4
DAY
(A) AGGREGATED FOUR BASIC EMOTIONS LABELED
NA
ANXIETY
POSITIVITY
SADNESS
404
PRECENTAGE
1
0.8
0.6
0.4
0.2
0
DAY 1
DAY 2
DAY 3
DAY 4
DAY
(B) DISTRIBUTION OF FOUR BASIC EMOTIONS LABELED
NA
ANXIETY
POSITIVITY
SADNESS
406
PRIME EMOTION
1
0.8
0.6
0.4
0.2
0
DAY 1
DAY 2
DAY 3
DAY 4
DAY
(C) DAILY PRIME EMOTIONS
NA
POSITIVITY
408
COUNT
10
8
6
4
2
0
DAY 1
DAY 2
DAY 3
DAY 4
DAY
(D) AGGREGATED SIX COGNITIVE PROCESSES
CAUSATION
CERTAINTY
DIFFERENTIATION
DISCREPANCY
INSIGHT
TENTATIVE

FIG. 4A



(E) DISTRIBUTION OF SIX COGNITIVE PROCESSES LABELED



(F) DAILY PRIME COGNITIVE PROCESSES

FIG. 4B

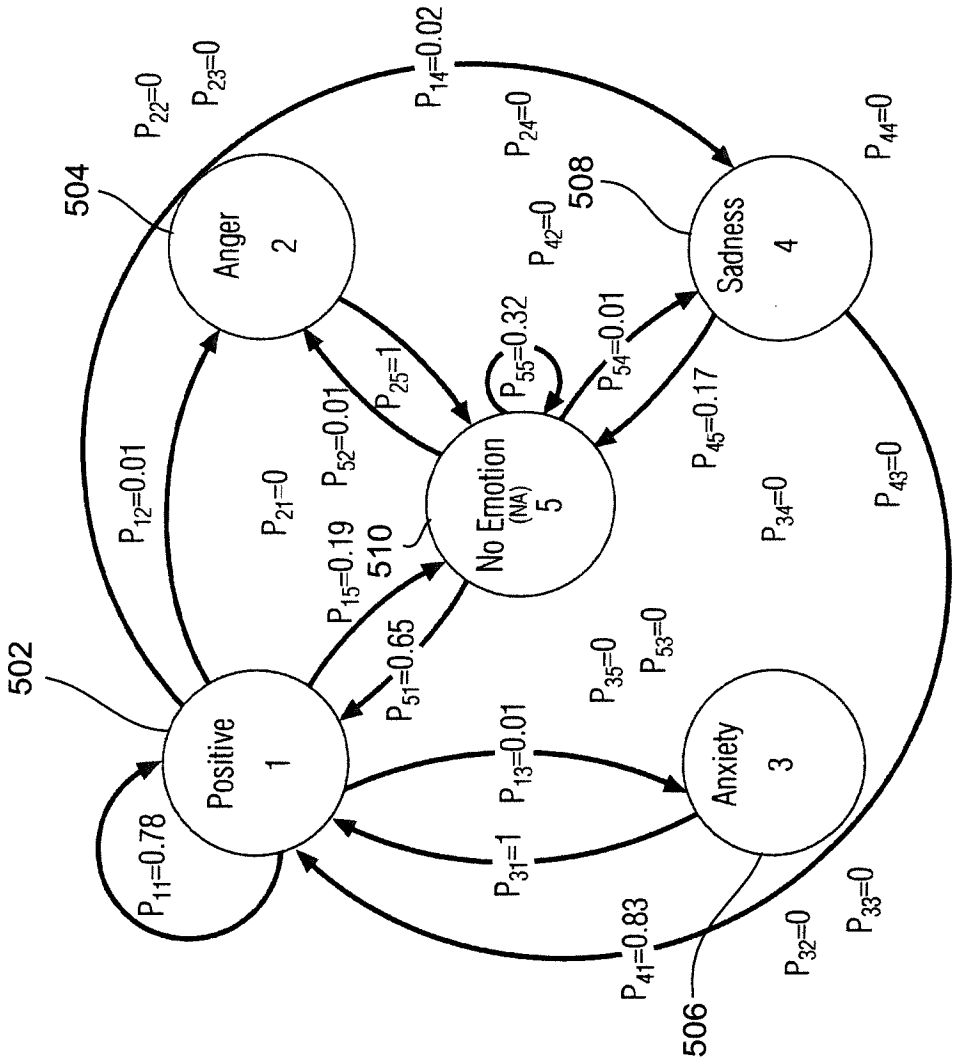
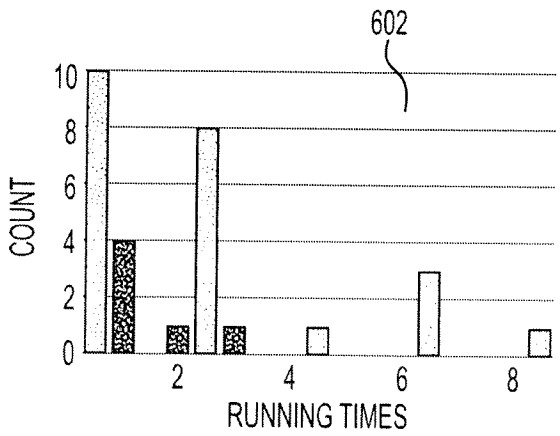
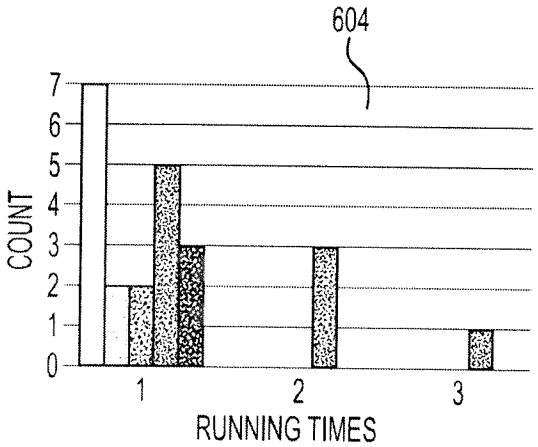

Positive
1
Anger
2
Anxiety
3
Sadness
4
No Emotion
(NA)
5
502
504
506
508
510
P_{11}=0.78
P_{12}=0.01
P_{13}=0.01
P_{14}=0.02
P_{15}=0.19
P_{21}=0
P_{22}=0
P_{23}=0
P_{24}=0
P_{25}=1
P_{31}=1
P_{32}=0
P_{33}=0
P_{34}=0
P_{35}=0
P_{41}=0.83
P_{42}=0
P_{43}=0
P_{44}=0
P_{45}=0.17
P_{51}=0.65
P_{52}=0.01
P_{53}=0
P_{54}=0.01
P_{55}=0.32

FIGURE 5



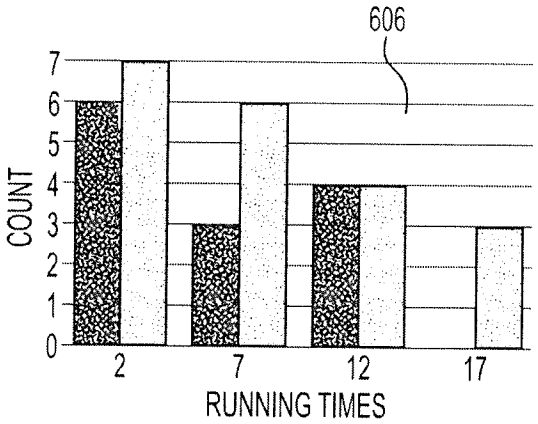
(A) DISTRIBUTION OF BASIC-EMOTION RUNNING TIMES IN EMAILS

NA
POSITIVITY



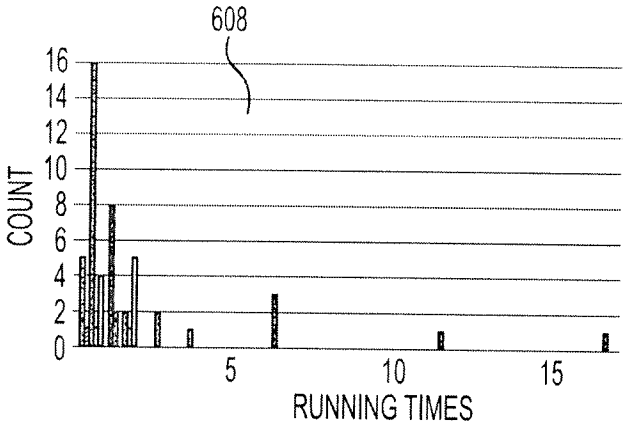
(B) DISTRIBUTION OF COGNITIVE-PROCESS RUNNING TIMES IN EMAILS

INSIGHT
DISCREPANCY
DIFFERENTIATION
TENTATIVE
NA



(C) DISTRIBUTION OF BASIC-EMOTION RUNNING TIMES IN EMAILS

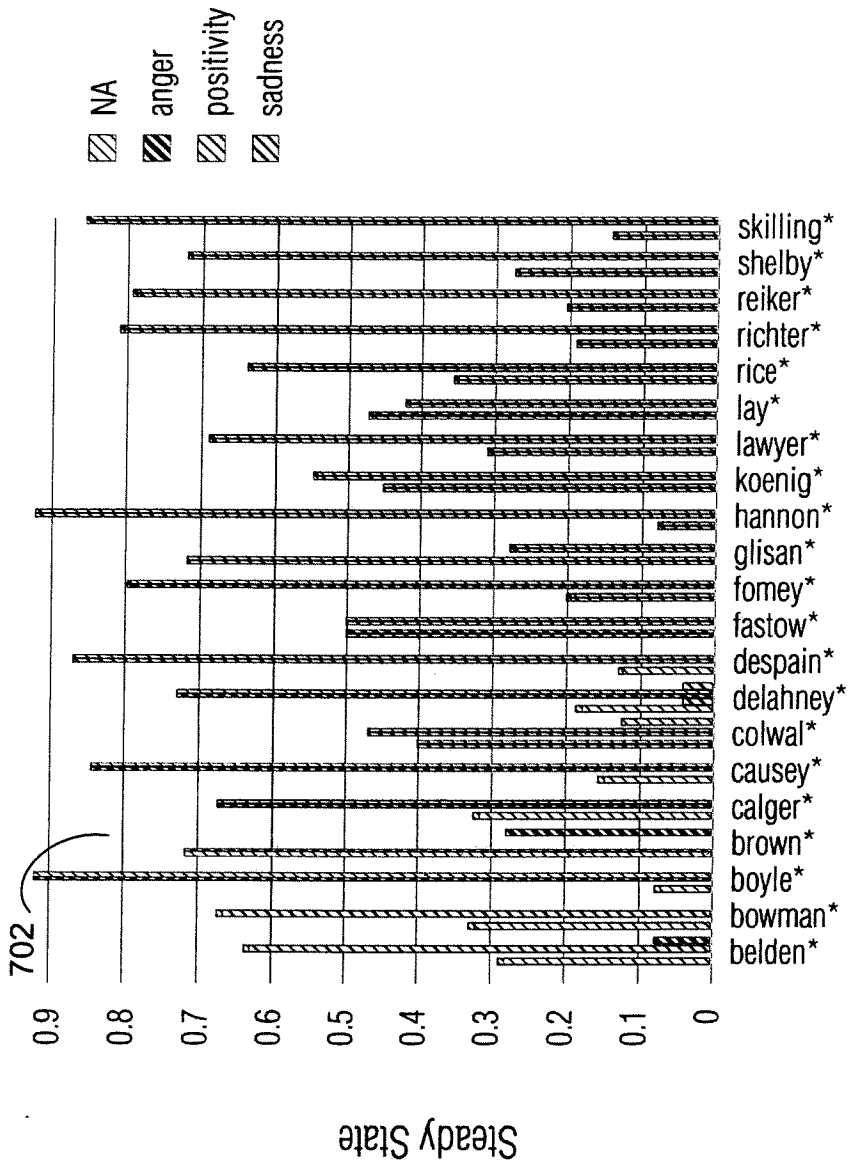
NA
POSITIVITY



(D) DISTRIBUTION OF COGNITIVE-PROCESS RUNNING TIMES IN EMAILS

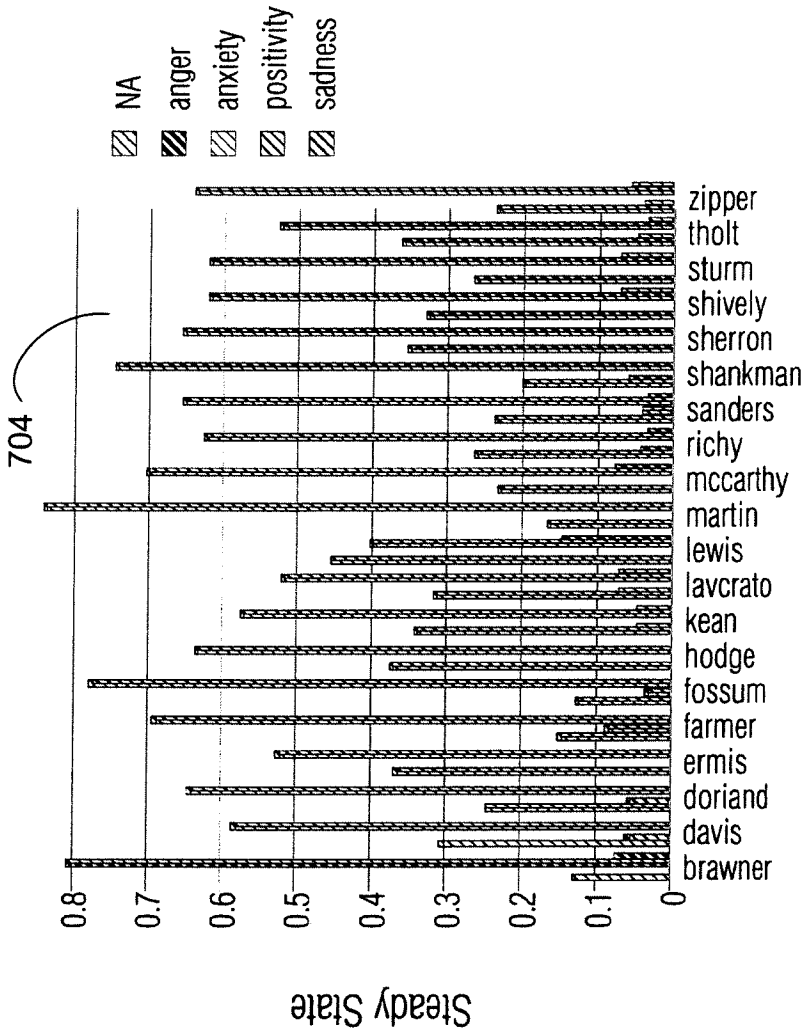
NA
DIFFERENTIATION
CAUSATION
TENTATIVE
DISCREPANCY
INSIGHT

FIG. 6



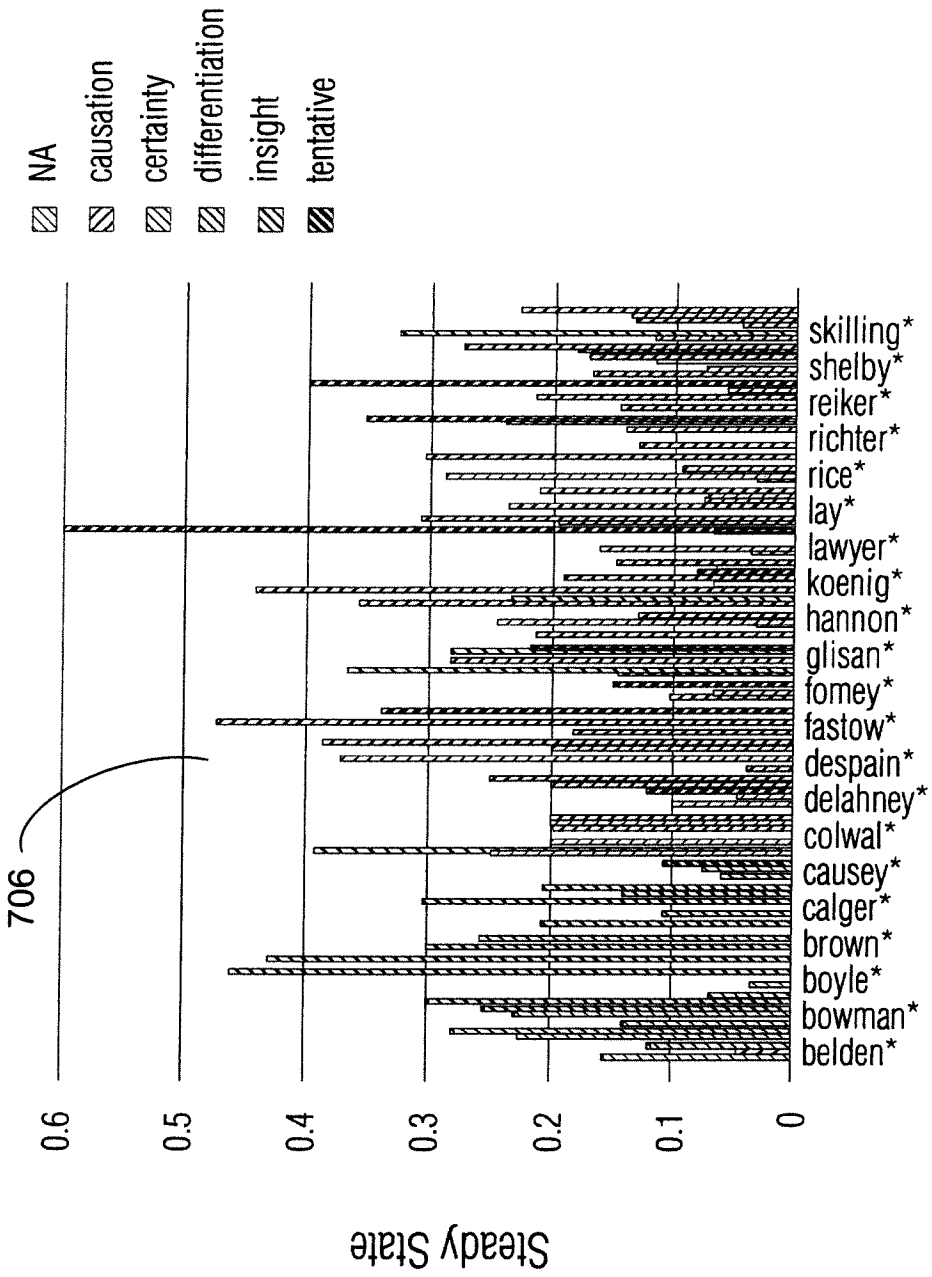
(a) Steady state probability distribution of guilty players

FIGURE 7A



(b) Steady states probability distribution of non-guilty

FIGURE 7B



(c) Steady state probability distribution of non-guilty

FIGURE 7C

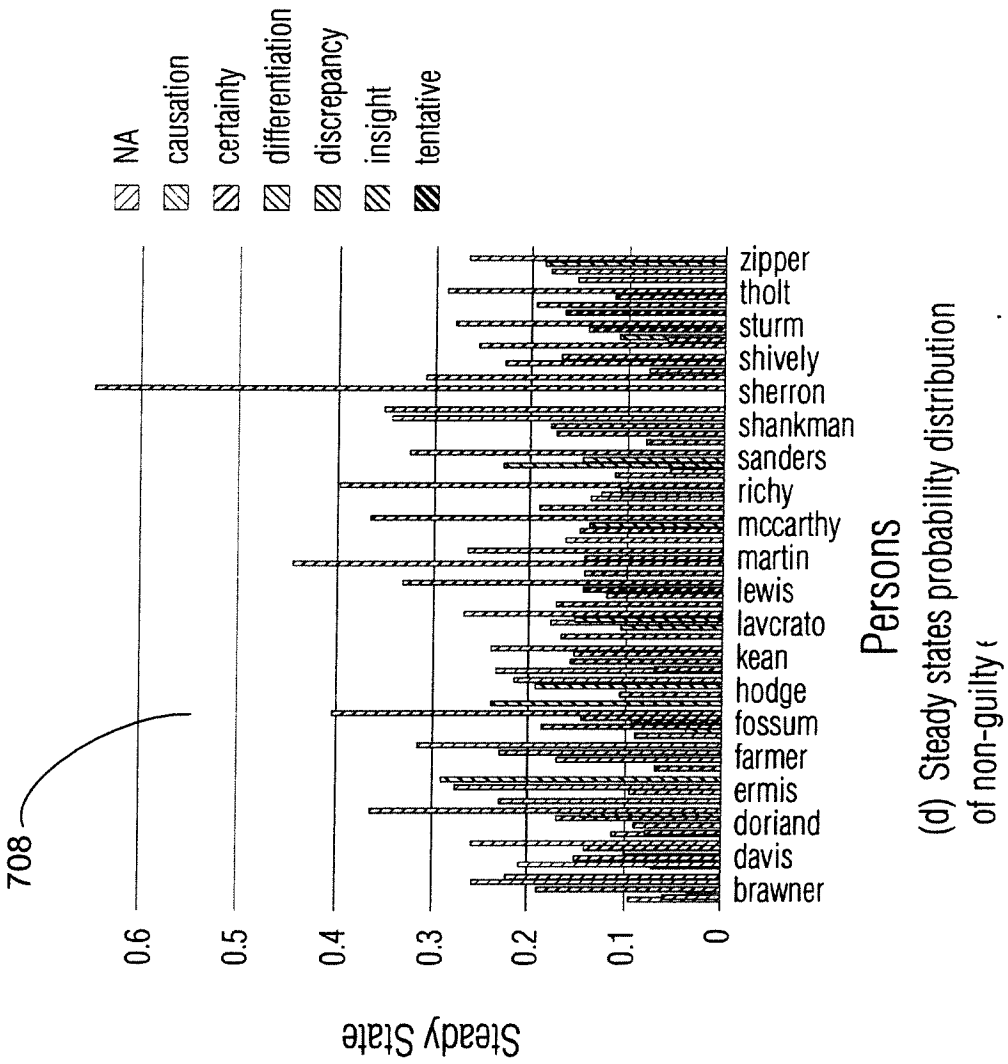
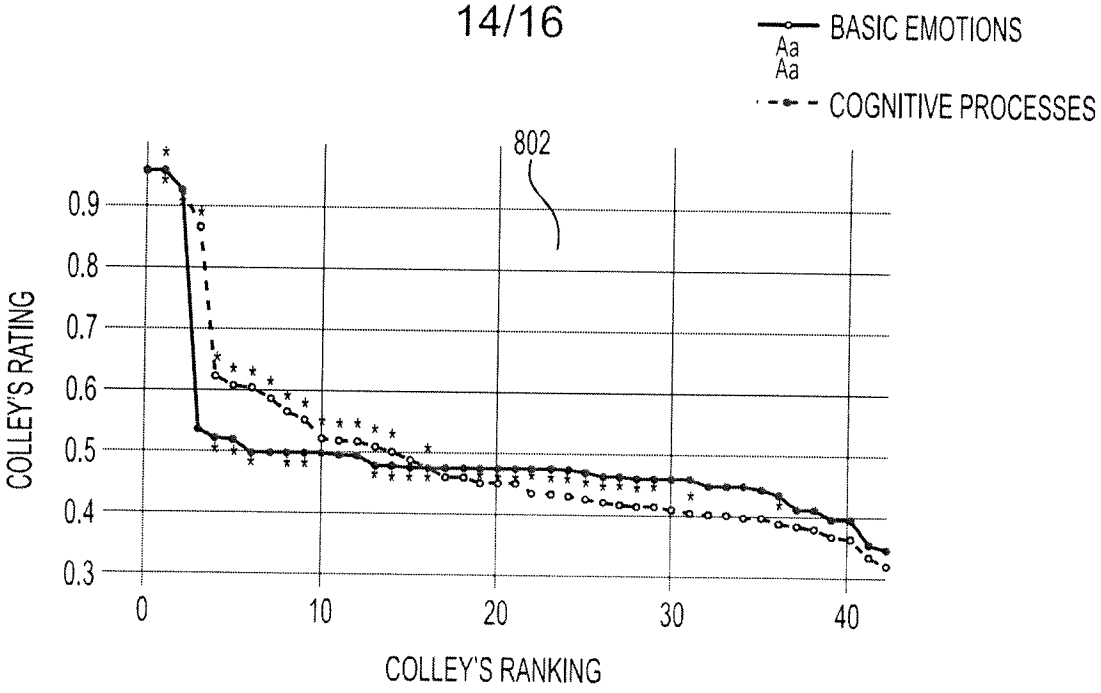
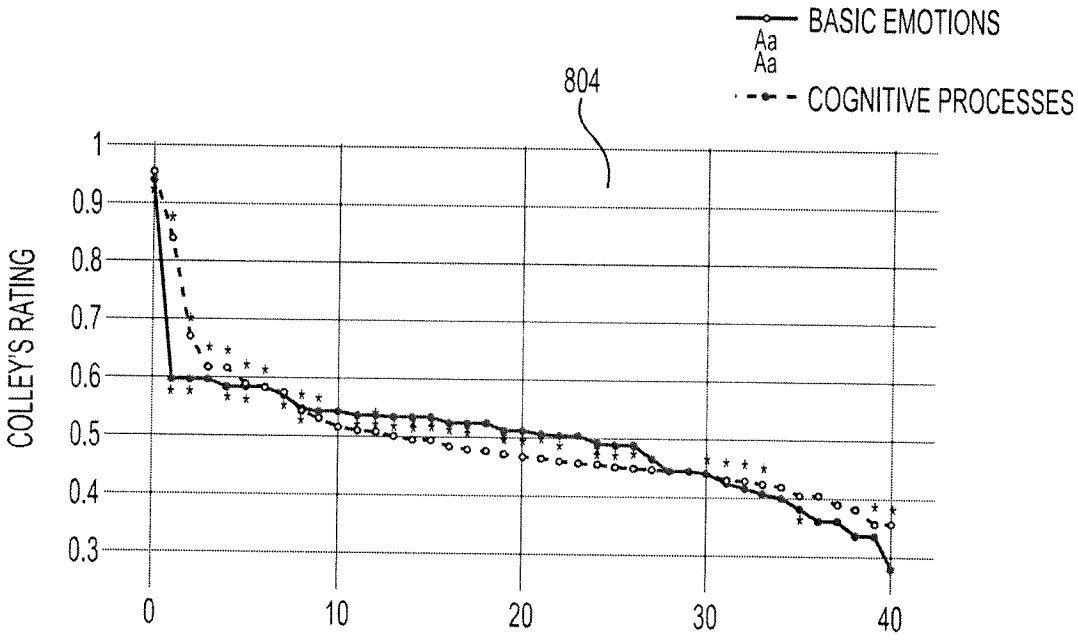

NA
causation
certainty
differentiation
discrepancy
insight
tentative
708
0.6
0.5
0.4
0.3
0.2
0.1
0
Steady State
zipper
tholt
sturm
shively
sherron
shankman
sanders
richy
mccarthy
martin
lewis
lavcrato
kean
hodge
fossum
farmer
ermis
doriand
davis
brawner
Persons
(d) Steady states probability distribution
of non-guilty

FIGURE 7D



(A) COLLEY'S RATING WITH PRIME EMOTIONS.



(B) COLLEY'S RATING WITH STEADY STATES.

FIG. 8

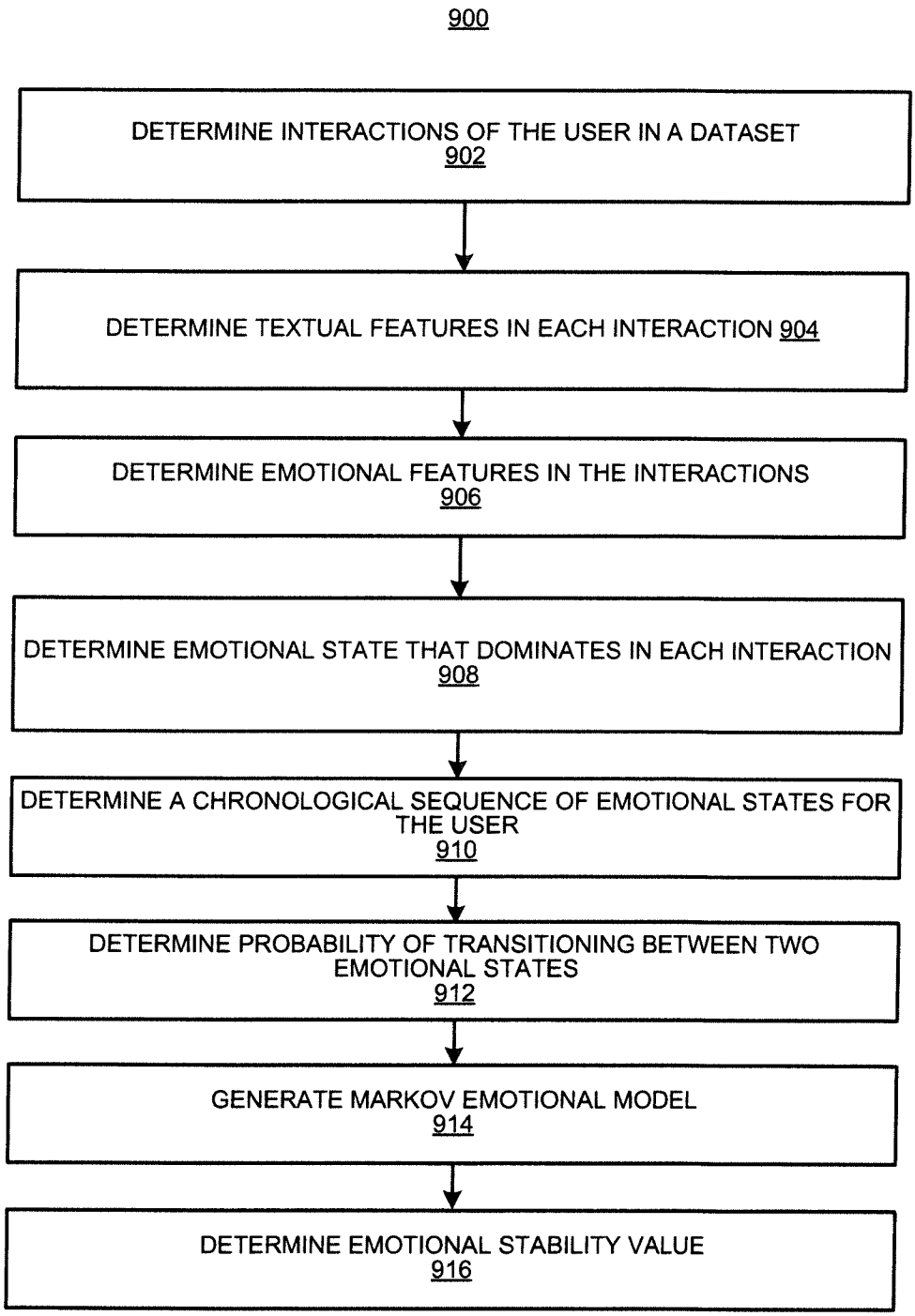

900
DETERMINE INTERACTIONS OF THE USER IN A DATASET
902
DETERMINE TEXTUAL FEATURES IN EACH INTERACTION 904
DETERMINE EMOTIONAL FEATURES IN THE INTERACTIONS
906
DETERMINE EMOTIONAL STATE THAT DOMINATES IN EACH INTERACTION
908
DETERMINE A CHRONOLOGICAL SEQUENCE OF EMOTIONAL STATES FOR THE USER
910
DETERMINE PROBABILITY OF TRANSITIONING BETWEEN TWO EMOTIONAL STATES
912
GENERATE MARKOV EMOTIONAL MODEL
914
DETERMINE EMOTIONAL STABILITY VALUE
916

FIGURE 9

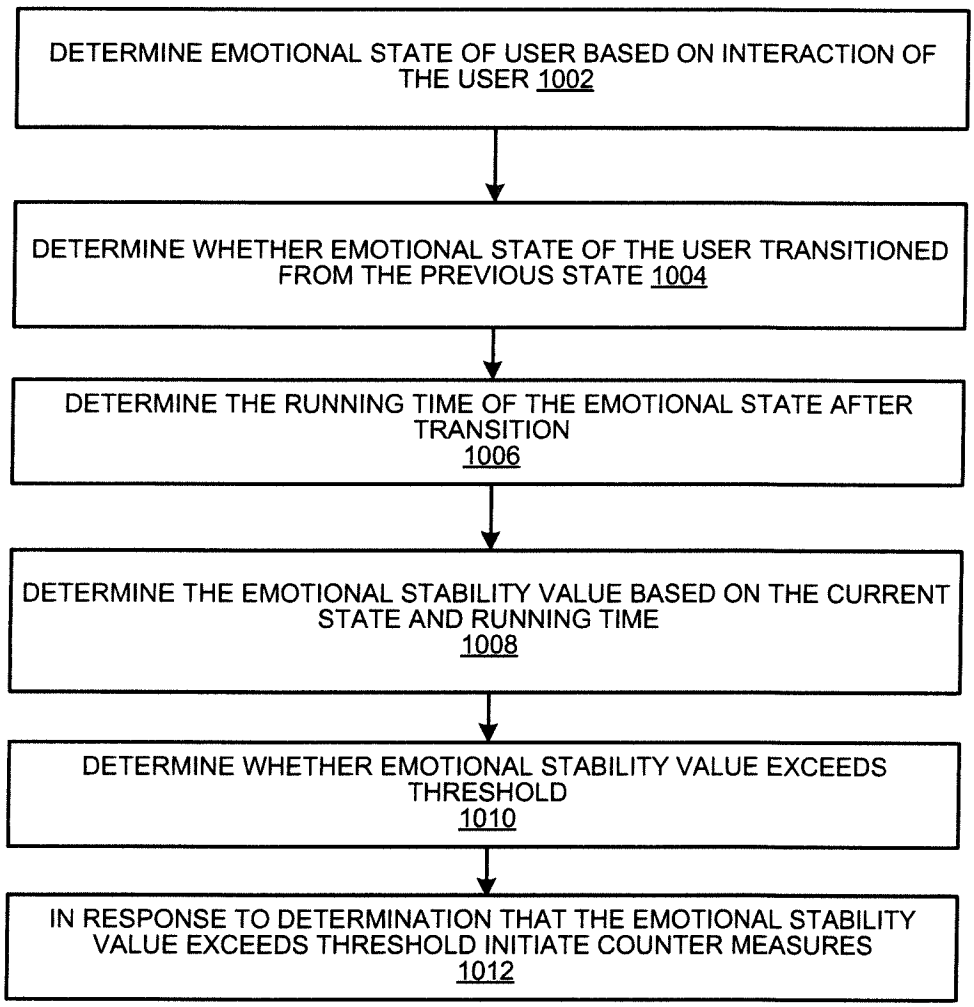

DETERMINE EMOTIONAL STATE OF USER BASED ON INTERACTION OF THE USER 1002
DETERMINE WHETHER EMOTIONAL STATE OF THE USER TRANSITIONED FROM THE PREVIOUS STATE 1004
DETERMINE THE RUNNING TIME OF THE EMOTIONAL STATE AFTER TRANSITION 1006
DETERMINE THE EMOTIONAL STABILITY VALUE BASED ON THE CURRENT STATE AND RUNNING TIME 1008
DETERMINE WHETHER EMOTIONAL STABILITY VALUE EXCEEDS THRESHOLD 1010
IN RESPONSE TO DETERMINATION THAT THE EMOTIONAL STABILITY VALUE EXCEEDS THRESHOLD INITIATE COUNTER MEASURES 1012

FIGURE 10