A mixed-method comparison of therapist and client language across four therapeutic approaches

Han Qiu

Department of English and Communication, the Hong Kong Polytechnic University

amy-han.qiu@connect.polyu.hk

Dennis Tay

Department of English and Communication, the Hong Kong Polytechnic University

dennis.tay@polyu.edu.hk

Abstract

This paper illustrates a methodological approach that combines computerized text analysis, quantitative analysis, and qualitative discourse analysis in comparing large bodies of therapeutic language. More specifically, it explores how language use in psychotherapy is associated with different therapeutic approaches and therapeutic roles (i.e., therapists and clients). The dataset consisted of 155 therapeutic sessions (over 1,057,000 words) that are illustrative of four approaches, i.e., psychoanalysis, humanistic therapy, Cognitive Behavioral Therapy (CBT), and eclectic therapy. The transcripts were divided according to therapeutic approaches and therapeutic roles and processed using Linguistic Inquiry Word Count (LIWC) in terms of four summary variables, i.e., analytical thinking, clout, emotional tones, and authenticity. A series of mixed-effects models with session as the random effect was fitted, and the statistical patterns were illustrated using linguistic examples and discussed from a discourse analytic perspective. The approach demonstrates methodological strengths in exploring large-scale data and expanding the research scope permitted by traditional discourse analysis. The findings underline professional knowledge and institutionalized roles as key factors influencing the use of therapeutic language, providing meaningful insights for the clinical understanding and future research into therapeutic language.

Keywords: linguistic features, therapeutic paradigms, therapist and client language, LIWC analysis

Introduction

Psychotherapy is defined as "the informed and intentional application of clinical methods and interpersonal stances derived from psychological principles for the purpose of assisting people to modify their behaviors, cognitions, emotions, and/or personal characteristics" (Norcross, 1990, p.218). The interventions could be practiced through various theoretical approaches, which differ considerably in philosophical foundations, theoretical and empirical concerns, intervention techniques, the formulation of specific therapeutic issues, and therapeutic processes (Prochaska & Norcross, 2014; Fernald, 2007; Kramer et al., 2009).

Take the three conventional therapeutic approaches (Wampold and Imel, 2015) as an example. The psychoanalytic approach concentrates primarily on the client's unconscious psychological and thought processes, which are believed to emanate from early childhood mental conflicts and re-appear in present life situations in subtle, disguised ways. Psychoanalytic interventions, therefore, aim to enhance clients' understanding of their current states of mind through the interpretation of historically-grounded thoughts and feelings (Kramer et al., 2009). Cognitive Behavioral Therapy (CBT) is problem-oriented and present-focused. The treatment focuses mainly on the client's unhelpful thoughts and beliefs that play out in dysfunctional behaviors and strategies. The major therapeutic goal is to assess and dispute the client's non-adaptive thoughts, emotions, and behaviors, and through the use of guided discovery and behavioral experiments, help the client develop more helpful and adaptive ways of thinking and behaving (Fenn & Byrne, 2013). By contrast, humanistic therapists view their clients as agents who are capable of self-awareness and self-determination and understand mental disorders as a result of disturbances in self-understanding and self-development. Seeing a supportive environment as the primary therapeutic vehicle, humanistic therapists' central goal is to "be fully

present with their clients" to derive a thorough understanding of their experiential worlds and to establish "a responsive, safe, and empathic therapeutic relationship" to facilitate clients' self-exploration and self-actualization (Watson et al., 2011, p.152). Apart from the three conventional approaches, there is also an increasing number of therapists who apply eclectic or integrative therapy (Norcross and Karpiak, 2012), which involves the integration of techniques and theories originating from different approaches or the combination of therapeutic factors that are common to all approaches (Norcross & Newman, 1992). The therapy focuses primarily on how the client's personal traits and the therapeutic relationship inform the practice of therapy, with the main emphasis on key elements of therapeutic changes such as therapeutic alliance and client motivation (Zarbo et al., 2015). The differences across the four approaches in theoretical and methodological stances are summarized in Table 1.

From the perspective of social constructionism, practitioners of different therapeutic approaches belong to different linguistic communities that have shared interests and goals. Their language use is largely dependent on specific socio-cultural contexts and therefore influenced by established behavior patterns, thinking modes, and prevalent values (Gergen, 1973). Through their interactions in and with the therapeutic community members (e.g., in school education, vocational training, and therapist supervision), therapists gradually take up established systems of knowledge, theoretical dispositions, and values, which will then sensitize them to certain aspects of the therapeutic context and influence the therapeutic process in significant ways. While previous therapeutic research has provided systematic accounts of the theoretical, methodological, and practical differences, whether and how the differences are encoded in the actual use of therapeutic language is much less explored.

In fact, there have been numerous theoretical works making a point about linguistic features of therapeutic approaches (e.g., Schaefer, 1976; Arkowitz & Hannah, 1989; Hill and Knox, 2002; Kramer et al., 2009; Prochaska & Norcross, 2014). However, the findings were mostly derived from the researchers' subjective impressions about therapeutic language in general rather than linguistic evidence drawn from authentic therapeutic contexts. Empirical studies on cross-approach differences in therapeutic language (e.g., Havens, 1986; Beutler & Mitchell, 1981; Hill et al., 1979; Essig & Russell, 1990; Mercier & Johnson, 1984) were mainly in-depth qualitative analyses of a small number of transcripts or selected excerpts. Partly driven by the appreciation of inherent idiosyncratic differences among clients and the nature of therapist-client interactions (Wohl, 1989) and partly due to logistic reasons, the analyses were often restricted to emerging linguistic properties that are only meaningful in the local therapeutic contexts and could be sensitive to researchers' subjective bias. As a result of technical and practical constraints, the few studies that employed computerized text analysis and quantitative analysis (e.g., Meara et al., 1979, 1981) were also restricted to a limited number of sessions and unvalidated linguistic variables. To what extent do the findings reveal systematic and psychologically meaningful patterns remains unclear. Furthermore, previous discussions of therapeutic language focused almost exclusively on therapist language. While therapists and clients have different background knowledge, institutionalized roles, and conversational intentions, the features of client language and their interaction with therapist language in the broader theoretical context are yet insufficiently understood.

To identify more generalizable patterns in therapist and client language, systematic analyses of large-scale linguistic data are needed. Building upon previous research that combined computerized text analysis and statistical analysis, the present study demonstrates a more

feasible approach for comparing larger bodies of therapeutic language. Computerized text analysis is combined with statistical methods to explore systematic cross-approach and between-speaker differences in well-validated composite variables. Qualitative discourse analysis is then adopted to further illustrate the patterns. More details about data selection, the selected variables, and research methods are given in the next section.

Methodology

Data Selection

Transcripts illustrative of psychoanalysis, CBT, humanistic therapy, and eclectic therapy were accessed from the *Counselling and Therapy* database hosted by Alexander Street Press (https://alexanderstreet.com). The database exemplifies a wide range of "therapy and counseling methods and approaches as practiced by experts in their field"[1]. All sessions were conducted in the English language and abided by the ethics guidelines established by the American Psychological Association (APA).

For the present study, 155 transcripts contributed by 38 therapeutic dyads (about 1,057,000 words) were collected. At the time of research, 35 CBT sessions were found from the database, and all were included in the analysis. While psychoanalysis, humanistic therapy, eclectic therapy had greater numbers of sessions (462, 124, and 133 respectively), 40 were randomly selected for each to achieve balance in terms of the number of sessions and total word count. The number of sessions, number of dyads (including the number of sessions contributed

[1] From https://search.alexanderstreet.com/counseling-therapy (accessed Nov 11, 2021).

by each dyad), and word count for each approach are presented in Table 2. Therapeutic approaches of the sessions were determined based on the labels provided by therapists who uploaded the transcripts (also see Table 2). Those that included two or more therapeutic approaches were categorized as eclectic sessions. All eclectic sessions incorporated psychoanalytic and cognitive-oriented techniques, and over two-thirds combined all three traditional approaches.

It is important to note that linguistic examples in this study were selected mainly based on their linguistic representativeness rather than therapeutic quality and representativeness. Therefore, this study does not make claims about proper language use in the concerning approaches. The purpose of using discourse analysis is instead to illustrate the linguistic patterns revealed by statistical analyses and provide an immediate sense of how the concerning variables are instantiated in authentic therapeutic language.

Linguistic Inquiry and Word Count (LIWC)

Computerized text analysis was accomplished using LIWC, a text analytic program that measures approximately 90 clearly delineated variables (Pennebaker et al., 2015). Its output includes lexical categories such as cognitive processes, emotion words, and personal concerns, and grammatical categories such as pronouns, prepositions, and articles. In addition, the program also measures four summary variables that reflect important socio-psychological constructs in written and spoken language, i.e., analytical thinking, clout, emotional tones, and authenticity. Each involves the meaningful combination of several word categories into a single socio-psychological dimension and is reported as a standardized score ranging from 0 to 100. The variables were developed based on well-validated algorithms (Pennebaker et al., 2015) and have

been successfully applied in the context of psychotherapy (e.g., Huston et al., 2019; Tay, 2020). Since the content of therapeutic language might vary according to clients' mental disorders and the topics under discussion, this study focuses on the four summary variables rather than specific word categories. Defining categories of the four variables are summarized in Table 3.

Analytical thinking refers to the speakers' tendency to use formal, precise, and structured linguistic expressions compared to informal, vague, and less-structured language. It is calculated based on the speakers' preference for articles and prepositions and the relative lack of pronouns, auxiliary verbs, conjunctions, adverbs, and negation words (Pennebaker et al., 2014). Getting a high analytical thinking score means the speaker is more inclined to engage in logical and hierarchical thinking, whereas getting a low score suggests a casual and narrative way of speaking.

Clout refers to the expression of expertise and confidence versus the use of less definite and less authoritative language. It shows the speaker's tendency to focus on the other or the self. According to Kacewicz et al. (2014), clout is constructed through the use of first-person plural pronouns, second-person pronouns, and tentative expressions like *perhaps,* and *maybe.* Getting a higher score means the speaker is more inclined to focus on the other and maintain an authoritative image, whereas getting a low score indicates a stronger tendency to focus on the self and a humble, tentative tone.

Emotional tone measures the proportion of positive emotion words to negative emotion words (Cohn et al., 2004). As the score grows from 0 to 100, the speaker's emotional tone shifts from the most negative to the most positive. An emotional tone score higher than 50 suggests that the speaker focused more on positive rather than negative emotions, and a score lower than

50 means the speaker is more inclined to adopt a pessimistic, depressing tone. The score falling around 50 indicates a neutral tone or a lack of emotionality.

Authenticity measured by LIWC indicates the speaker's tendency to reveal about themselves. The scores are calculated based on the frequency of first-person singular pronouns, third-person pronouns, differentiation words like *except* and *without*, and negative emotion words and motion verbs (Newman et al., 2003). It is important to note that LIWC authenticity should not be interpreted as the notion of authenticity in the clinical sense, i.e., the therapist's moment-to-moment responsiveness to the client's thoughts, feelings, and conceptions of the therapeutic relationship (Miller et al., 2004), or the humanistic definition of authenticity (Rogers, 1966). The notion is also broader than the therapeutic notions of *therapist self-disclosure* and *immediacy*, which refer to therapists' self-revelation about private experiences "outside of therapy" and the discussion of the "here-and-now" therapeutic relationship, respectively (Hill et al., 2018, p.446). Apart from intentional self-revelations, authenticity measured by LIWC also includes non-intentional and unconscious information about the self, which is of no less therapeutic significance than the intentional, conscious facet (Essig & Russell, 1990). Instead, LIWC authenticity scores reflect the speaker's tendency of self-expression in general: a high authenticity score indicates a generally open and active attitude toward self-expression, and a low score reveals a more conservative and withdrawn mindset.

Research Methods

LIWC scores calculated for each speaker in each session formed the basis for subsequent statistical analysis and discourse analysis. A series of mixed-effects models were fitted. Speaker and approach were chosen as fixed effects to explore cross-approach and between-speaker

differences in linguistic styles. While the use of small sample sizes might raise concerns about homogeneity among dyad and session language, we used dyad and session as the random effects respectively to account for potential clustering effects (see the next section for more details).

Considering that computerized text analysis based on predefined coding schemes might sometimes miss genuine linguistic differences between groups (Iliev et al., 2015), the patterns highlighted by mixed-effects model analyses will also be illustrated using genuine linguistic examples to capture qualitative differences in concerning approaches. Contextual cues of therapists' and clients' personal information were removed for the sake of confidentiality.

Results and Findings

Both mixed-effects models explain substantial and comparable amounts of variances, which means the dyads and sessions selected by this study show noticeably distinct features in terms of the four variables. Statistics show that models with session as the random effect generally provide better fits, which means session-level clustering better explains the variance in the data. For this reason, models with session as the random effect are selected for further analysis. Findings about the four variables will then be presented in turn.

Analytical thinking

Main indicators of the analytical thinking model (R^2-marginal =0.218, R^2-conditional =0.355, ICC of random components=0.175) confirm the need to include session as the random factor. Both speakers $F(1,151)=58.04$, $p<.001$ and therapeutic approach $F(3,151)=9.67$, $p<.001$ have a significant effect on speakers' use of analytical language. This suggests that therapists and clients

differ significantly in their analytical thinking level regardless of their therapeutic approaches; speakers from different approaches also show distinct inclinations toward the use of analytical language. The interaction between speaker and approach is not statistically significant $F(3,151)=1.53$, $p=0.210$, which means therapists and clients from the same approach show relatively concordant patterns in analytical thinking. LIWC analytical thinking scores for different speakers and approaches are plotted in Figure 1.

Therapists of all four approaches show higher levels of analytical thinking (M=13.14, SD=7.19) than their clients (M=8.54, SD=4.81), indicating a more formal, logical, and precise way of speaking of the former, and a more personal, narrative, and obscure style of the latter. This pattern is consistent with the client's institutionalized role as a teller of their personal experience and the therapist as a professional who provides interpretive readings and instructive feedback based on the information provided by the client.

Therapists and clients in the same approach are quite attuned in their use of analytical language; one speaker choosing a formal or informal language style often prompts the other to talk back in a similar manner. However, speakers' analytical thinking scores vary significantly across the four approaches. Those in psychoanalytic sessions exhibit the highest level of analytical thinking. Their average score (M=13.22, SD=8.08) is not significantly different from that of eclectic therapy speakers (M=12.12, SD=6.05), but significantly higher than that of CBT dyads (M=8.94, SD=4.46) ($p<.001$) and that of humanistic dyads (M=8.84, SD=5.72) (both ps$<.001$). The score of eclectic therapy speakers is also significantly higher than that of humanistic speakers ($p=.008$) and that of CBT speakers (p=.015). Humanistic speakers' average score is not significantly different from that of CBT speakers.

The linguistic style observed in psychoanalytic sessions is consistent with the overall therapeutic impression that psychoanalysts often use impersonal and highly structured language (Schaefer, 1976; Hansen, 2000). Seeing psychological symptoms as indirectly but causally related to unconscious conflicts between different structures and functions of personality (Hansen, 2000), the primary task of psychoanalysts is to guide their clients to explore the complexity of these structures and functions and gain insights into the meanings, relationships, and causes of relevant experiences (Appelbaum, 1973). Therefore, psychoanalysts often encourage their clients to think beyond the facts and to explore their meanings, relationships, and particular importance in their life (Fernald, 2007). This style is illustrated by Extract 1, in which the client tells the therapist about his/her immediate feelings in a crisis moment when the therapist was not available. The therapist then guides the client to re-experience the feelings of being abandoned and work toward the emotional core of the feelings. The analytical thinking scores for the therapist and the client are 27.99 and 13.44, respectively (linguistic markers of the variable are set in bold).

Extract 1

CLIENT: […] it's **like** I have known what's going **on since the** weekend and have been able **to** see it very clearly, but I haven't been able to do anything. So I've been completely engulfed **by** this state **for the** last 48 hours or so.

THERAPIST: Yeah, and **like** part **of** what you're saying there is that although **on** one hand, **in** a way, I was not being unreasonable.

CLIENT: No, I wasn't

THERAPIST: **On** another hand, it was another abandonment **at a** moment of some crisis, when it really would have made **a** difference **to** have not been abandoned, **at the** very least. And it could have been helpful **to** really have **a** talk.

CLIENT: Yep. Yep. So…

THERAPIST: Is there more you can say **about**? […] I'm asking because I think **the** feelings it stirs **up** are the feelings we're talking **about across the** board. Being kind of more **in** touch **with** those...
CLIENT: […] So I think that was **a** train **of** thought. […] I think that strikes me **as a** kind of annoyed reaction, more **than a** sense **of** despair **of the** sort that you're describing.

We can see the linguistic style in this conversation is quite formal and logical. Both the therapist and the client make frequent use of articles and prepositions when making connections and distinctions between different categories (*like,* part *of*) and in establishing logical relationships (*at the* very least, *along the* lines *of*). The expressions also provide the structural frame for precise descriptions of delicate feelings and abstract thought processes (more *than a* sense *of* despair *of the* sort).

Compared with speakers from psychoanalysis and eclectic therapy, CBT speakers rely less heavily on the use of analytical language. This might be a result of CBT interventions being more attendant to observable and concrete aspects of mind and here-and-now experiences. Although both CBT and psychoanalysis set their operational focus on the client's maladaptive behaviors and thoughts, CBT therapists are more concerned with the identification and resolution of problematic cognitions than with the original causes and onsets of emotions (Depreeuw et al., 2017) and are thus more likely to address their clients in an informal, narrative manner. This style is reflected by Extract 2. The conversation starts with the client telling the therapist about his/her maladaptive thinking. The therapist then encourages the client to elaborate on the in-the-moment feelings and identify the problematic way of thinking. The therapist's and the client's analytical thinking scores are 17.90 and 8.49, respectively.

Extract 2
CLIENT: **Can I just** tell **you that** at **this** moment, by the way, **because this is very** important, the whole time **you're** speaking **I'm** saying "**I should have** listened to **you**

better." "**I should have** taken notes." **This is what my** head **is** saying right **now**. "**I should have been** more thorough." "**I should have** gotten **it**." […]
THERAPIST: **And while you're** telling **yourself those** "should"s, **what are you** feeling?
CLIENT: Terrible. **I don't** know.
THERAPIST: **What does** "terrible" mean? **What's** the emotion?
CLIENT: Guilty.
THERAPIST: **And isn't that your** easy tendency?
CLIENT: Yes.
THERAPIST: **And do you** want to feel **this** way for the rest of **your** life?
CLIENT: **No. I just wasn't** aware, **so no**. […] **I don't. This is not what I** want.

Different from the preceding psychoanalytic extract, this conversation focuses on factual and experiential details in the client's here-and-now thoughts and feelings. As a result, both the therapist and the client used casual and colloquial language. We can find frequent use of personal pronouns, adverbs, and auxiliary verbs, especially during the exploration of irrational thoughts (*what are you* feeling*, I should have, while you are* telling *yourself*). The frequencies of prepositions and articles were relatively lower compared with Extract 1.

Therapists and clients from humanistic sessions manifested an even more casual and narrative style. Understanding their clients as whole persons in a broader context rather than from the perspective of non-adaptive behaviors and thoughts, humanistic therapists are more likely to encourage their clients to freely explore their thoughts and feelings and construct their own self-narratives to make sense of their experiences (Fernald, 2007). Different from the reductionist view of mind held by CBT and psychoanalysis, the focus of humanistic interventions is more on the client's uniqueness and individuality (Hansen, 2000) than on the objective or universal aspects of the mind. The humanistic style is illustrated by Extract 3. After the client tells the therapist about his/her reflections on interpersonal relationships, the therapist

clarifies and accentuates the client's unexpressed feelings to reinforce the positive insights. The analytical thinking scores for the therapist and the client are 4.07 and 3.59.

> Extract 3
> CLIENT: […] **but I** think, like **I** see **this** going on, **I** think **being** envious of all **these** different people, **if I hadn't** sort of solved **my** own self **or something**... like **my** own little problems, **which were** looking at **everybody** else **and** thinking, "Wow, **they're really** got a good **thing** going **and where am I**?"
> THERAPIST: **So it** sounds, and **I'm not clear**. **It** sort of sounds like **you** think two **things. So it** happens for **you and** the one **is,** like **you don't** find **your** little self saying **so often**, "Hey, **where am I**?" **And** the **other thing that** happens **is, you don't** put **those** people on a pedestal, some of t**hose** people **you** know.
> CLIENT: **No, that's** right **and this really** makes **you** feel much better **about everything. I** mean, **I can't** even remember **how I** felt. **But I** know I didn't feel **as** good **as I do now**.
> THERAPIST: **You're so** different **that you can't even** make contact with **what you were** like.
> CLIENT: **I** know **I must be** out of **here. I'm very** happy. **I** mean, **I'm** seeing **that they're not really very** happy **and what did I** think **they had**?

We can see that language use in this extract is even less structured and more colloquial than Extracts 1 and 2. The style is characterized by the high occurrence rates of conjunctions, auxiliary verbs, and negation words in both speakers' language (*and, but, doesn't*). While the client is reflecting on the changes in his/her spontaneous feelings, the therapist follows closely in a mild and empathic way. Instead of providing a professional interpretation of the client's experience, more efforts were made to deepen the client's understanding of his/her own feelings. This is in part realized by the frequent use of third-person impersonal singular pronouns (*It* sort of sounds like, *it* happens for you). According to Havens (1986), such expressions reflect the therapist's attempt to take on the client's frame of reference and express empathic understanding.

Although all eclectic sessions in the dataset include psychoanalytic and CBT techniques and over two-thirds also incorporate humanistic techniques, their preference for analytical language goes far beyond the average of the components approaches, which might indicate greater influence from psychoanalysis than from the other two approaches. Nevertheless, since eclectic therapy might also vary across different forms of integration, i.e., the integration of theories, techniques, common factors (Norcross & Newman, 1992), and the weight assigned to each component, the findings need to be verified by future research.

Clout

Main indicators of the clout model (R^2-marginal=0.811, R^2-conditional=0.852, ICC of the random component=0.213) suggest the distinctiveness of different sessions to be an important random factor affecting the variation of clout scores. Both the effects of speaker $F(1,151)=1629.65$, $p<.001$ and approach $F(3,151)=3.17$, $p=.026$ are statistically significant, indicating distinct linguistic styles between the two therapeutic roles and among the four approaches. The interaction effect between speaker and approach is also significant $F(3,151)=22.28$, $p<.001$, which means between-speaker differences are not consistent across approaches. The distribution of clout scores is shown in Figure 2.

Differences between therapists and clients are significant across all four approaches (all ps<.001). Therapists generally pay greater attention to clients' expressions and the ongoing therapeutic process. They also tend to express a higher degree of certainty and confidence. By contrast, clients are more likely to generate tentative accounts about their own experiences, thoughts, and feelings. This pattern is congruent with the institutional setting of psychotherapy, in which the therapist is supposed to use their professional expertise to assist the client with their

problems. It also corroborates previous discussions about the inherently imbalanced power-relations in psychotherapy (Perlin, 1991; Boyd, 1996; Harrison, 2013).

Therapists practicing different approaches exhibit contrasting inclinations in terms of clout expression. The greatest level of clout is observed for CBT therapists. Their average score (M=89.59, SD=7.30) is significantly higher than that of humanistic therapists (M=76.68, SD=15.08) and that of psychoanalytic therapists (M=70.76, SD=15.14) (both *p*s<.001). The score is not significantly different from that obtained by eclectic therapists (M=88.26, SD=5.63), whose average score is also significantly higher than those of humanistic therapists (*p*=.003) and psychoanalysts (*p*<.001). The score obtained by humanistic therapists is not significantly different from that of psychoanalysts. Cross-approach differences among clients are not statistically significant, suggesting the low level of clout to be a general feature of the client population.

Adopting an objective and educational stance (Knapp & Beck, 2008), CBT therapists' expressions can be quite definite and directive in the linguistic sense, especially when giving therapeutic tasks for informative, questioning, or confrontational purposes (Kramer et al., 2009). The between-speaker contrast in CBT sessions, with a mean difference of 64.41, is the most evident among all four approaches. This asymmetric style of clout expression is illustrated by Extract 4, in which the therapist is guiding the client to explore a non-adaptive thinking mode associated with Obsessive-Compulsive Disorder (OCD). While the therapist gets a high clout score of 76.84, the client scores only 17.10.

> Extract 4
> CLIENT: So for me, more, **you** know, it **kind of** goes back to the… Like "Oh gosh, why do I do this? Why do I have these thoughts? […]. I shouldn't even be, like, bothered **if** she says, […]".

> THERAPIST: Sure. But, **you** know, **we** want to be careful about that response. Like, "Oh, I shouldn't even have that response." Well, then **we're kind of …**
> CLIENT: That's what I was thinking.
> THERAPIST: … **kind of** pushing it down. So **you** want to go, "Okay, well that's interesting I just had that response. I don't need to get all worked up like this, but there's that pattern again." […] **You** know, **you** don't want to degrade **yourself** about it because, again, that squelches any kind of creative intelligence about the problem. So, **you** know, **you** want to go, like, "Okay, this is it. Now what do **we** do?" As opposed to, "Oh, why does this always happen?" Right? And that's what **you're** doing at work when they make that change. […]
> CLIENT: […] it's **kind of** a fine line between not **kind of** squelching a feeling **or** thought that comes up. […] **if** things pops up. I'm just like…
> THERAPIST: Absolutely. […] **We're** not going to get anywhere when that comes in, so **you** have to quiet that in order to see what else is around.

As the therapeutic goal is to reduce the frequency and intensity of obsessive-compulsive thoughts, the therapist's language is quite client-focused and directive. This is reflected by the overall lack of tentative expressions, the frequent use of second-person pronouns in questioning and confrontational statements (*you* want to go, how *you're* doing it), and the use of first-person plural pronouns for informative purposes (*we* want to, *we're* not going to). The client's language, however, shows the opposite trend. We can find extensive use of tentative expressions such as *kind of* and *if,* and second-person pronouns and first-person plural pronouns are rarely used to address the therapist directly or comment on the therapeutic relationship. These features together reveal a self-focusing tendency and a relative lack of certainty.

Between-speaker differences in clout expression are much smaller and not significantly different in humanistic therapy and psychoanalysis (M=43.65 and 38.75, respectively). According to Kramer et al. (2009), humanistic therapists are more inclined to see their clients as equals and treat them as experts on their own experiences. Acknowledging clients' potential of self-understanding and self-determination, humanistic therapists are encouraged to "bracket their

assumptions" (Watson et al. 2011, 152) and accentuate their clients' personal understanding of the events. This could be an important reason why humanistic therapists generate fewer directives but more tentative expressions. The average score obtained by psychoanalysts is not significantly different from that of humanistic therapists, which means the same style also applies to psychoanalysis. According to Freud (1912), a psychoanalytic therapist is supposed to function as a "blank screen" or a "mirror" (p.118) that reflects the client's unconscious in a neutral and non-interfering manner, and the therapist staying anonymous in therapy is believed to facilitate the client's re-experiencing of emotional events and the foregrounding of materials that require further interpretation. This style is exemplified by Extract 5. The conversation occurs near the beginning of a psychoanalytic session. Following the client's description of an extremely depressing life situation, the therapist guides the client to re-experience the feelings and dig deeper into the potential causes. The therapist's and the client's clout scores are 55.84 and 13.37, respectively.

> Extract 5
> THERAPIST: What were **your** thoughts about that?
> CLIENT: That **if** I were getting better, I'd feel a **lot** more secure about it. But, it just **seems** like these problems recur very easily.
> THERAPIST: Yeah, a **lot** of this stuff that **you're** describing […] sounds like it's to do with productivity, I mean feeling **kind of** jealous, **I** imagine, **sort** of bad by comparison to her and bad about not having gotten, **you** know, stuff done, **you** wanted to get done. And I think **maybe you** had a memory like not having the job start, like, I don't know […] this was **something** else **you** were **trying** to do and are **usually** competent at, and I **guess,** I **wondered if you** feel like **you'd** screwed it up. […]
> CLIENT: Yeah, I got frustrated, and also I just felt very sick afterward. […] eating has been frustrating since it's just, **some** things that, like, **usually** can be **sort** of a nice break. […]

Similar to the CBT client in Extract 4, the psychoanalytic client also focuses exclusively on

his/her own feelings and makes frequent use of tentative words. However, the psychoanalytic therapist appears to be more cautious than the CBT therapist when inferring about the client's thoughts and feelings. This style can be discerned from the consecutive use of tentative expressions (*sort* of*,* I *wondered if you*) in single sentences. Although the process unavoidably involves direct references to the client using second-person pronouns, it is mainly exercised in the *I-you* bilateral relationship rather than the collective unit of "*we*".

The average clout score obtained by eclectic therapists is only slightly lower than that of cognitive therapists (M=88.26, SD=5.63) but significantly higher than that of psychoanalytic therapists ($p<.001$) and that of humanistic therapists ($p=.003$). Eclectic therapists express a higher level of clout than their clients (M=25.84, SD=14.96), and the between-speaker difference (M=62.42) is only slightly lower than that in CBT sessions. While this seems to indicate that eclectic therapists are more susceptible to the influence of CBT in terms of clout expression, the potential influence of integration forms and the proportions of different components needs to be further examined.

Emotional tones

Main indicators of the emotional tone model (R^2-marginal=0.196, R^2-conditional=0.406, ICC of the random component=0.261) confirm the necessity of including session as the random effect. Both speakers $F(1,151)=39.12$, $p<.001$ and that of therapeutic approach $F(3,151)=9.32$, $p<.001$ have a significant impact on their use of emotional expressions. There is also a significant speaker-approach interaction $F(3,151)=5.48$, $p<.001$, which means therapists and clients from different approaches tend to adopt distinct emotional tones. The distribution of emotional tones scores is shown in Figure 3.

Therapists' emotional tone is generally more positive than that of clients, and the between-speaker differences are statistically significant in CBT (p<.001), psychoanalysis (p<.001), eclectic therapy (p=.007). Therapists' preferences of emotional tones differ further across the four approaches. CBT therapists are found with the most positive tone (M=66.47, SD=20.38), and their average score is significantly higher than that of psychoanalytic therapists (M=52.16, SD=27.7) (p=.041). CBT therapists' average score was also significantly higher than that of humanistic therapists (M=43.14, SD=16.37) (p<.001), which is the lowest among all four approaches. Probably shadowed by the generally positive orientation of cognitive-oriented techniques, the average score of eclectic therapists (M=63.27, SD=18.83) is not significantly different from that of CBT therapists but significantly higher than that of humanistic therapists (p<.001). While clients usually enter therapy with great distress, their emotional tones were mostly negative to neutral, with no significant differences across the four approaches. Nevertheless, the tone adopted by psychoanalytic clients seems to be more depressing (M=36.03, SD=19.42) than those detected among the others, with its difference from that of eclectic clients trending toward significance (p=.054).

Speakers from CBT and eclectic therapy tend to adopt more positive tones than their counterparts in the other two approaches. Unlike psychoanalytic therapists who guide their clients to re-experience the emotional feelings and humanistic therapists who encourage their clients to freely explore the meaning of emotions, cognitive-oriented therapies offer detailed instructions to help their clients understand their distorted, negative cognitions and develop more adaptive and rational thinking. Probably influenced by the guided discovery, clients in CBT and eclectic therapy also produce a nearly balanced proportion of positive and negative emotion words (M=48.28 and 49.48 respectively). This linguistic style is reflected by Extract 6, in which

a CBT therapist is guiding the client to explore his/her unhelpful thoughts that eventually led to substance abuse. The therapist's and the client's scores are 69.14 and 58.51, respectively.

Extract 6

Therapist: […] the way people like me practice psychology, we believe that people have **hostility** or **bad tempers** are often trying to mask the ...

Client: Their **true** feelings.

Therapist: Yeah, a lot of **hurt**, a lot of **anxiety**, a lot of **pain**. I can believe that about you. The question for you is, at this point, […] are the **advantages good** enough that you are going to keep using that strategy. […]

Client: No. Like I say it was more so where I guess it was an excuse. […]

Therapist: **Well,** it sounds to me like you don't have **good** coping strategies. It's hard for you to cope effectively.

Client: Yeah, I'll go along with that.

Therapist: And so the default methods you use, **violence**, drinking, alcohol, using cocaine, those default strategies, those are just getting you deeper and deeper in **trouble.**

Client: Right.

[…]

Therapist: You said "I am an analytic or a person who can analyze people". I wonder what would happen if you developed the belief that you have the skills to be **happy** without using.

[…]

Client: I would probably have a **better** life. I would probably have a **better** life. I've been thinking about going back to school […]

In this conversation, the therapist summarizes the client's non-adaptive behaviors (*hostility, violence, bad tempers*), connects them to his/her inability to cope with negative emotions (*hurt, anxiety, pain*), and points out the adverse consequence of the behaviors (getting you deeper and deeper in *trouble*). After establishing the cause-effect link, the therapist invites the client to consider a more optimistic way of life that could happen without substance abuse, which then triggers a series of positive expressions from the client (have a *better* life).

The between-speaker difference is also statistically significant in psychoanalytic sessions, but the emotional tone is relatively gloomy. Consistent with Freud's (1912) "blank screen" view of the therapist, psychoanalysts are more inclined to adopt an impassive and objective tone to facilitate clients' re-experience of "affectively painful but ingrained scenarios" in their past experiences (Binder & Strupp, 1984, p.35). Therefore, it is conceivable that their clients were more pessimistic than their counterparts in other types of therapy. The contrast is exemplified by Extract 7. After the client tells the therapist about a recent emotional breakdown, the therapist guides him/her to elaborate on the feelings in relation to other life events and explore the underlying causal relationship. The emotional tone scores obtained by the therapist and the client are 58.90 and 16.63, respectively.

> Extract 7
> CLIENT: I'm pretty **miserable**. Yesterday I was pretty **anxious** all day long... And I'm just **frustrated** with everything […] Things just don't seem to be getting **better**, but it seems to be getting **worse** […]
> THERAPIST: Yes I imagined you're probably about **ready** to feel like you're getting something from just persevering with everything.
> CLIENT: Getting something?
> THERAPIST: Getting something back for just sticking with it […].
> CLIENT: I was talking to my dad […] it's like everything that happens, nothing is making it any **easier** on me, everything is just adding to it […] But I can't say anything […] I don't know how he **missed** her. And so she runs off, the woman from the shop is all **freaked** out, you know, it just like, you know.
> THERAPIST: I wonder if you were like **anxious** because you were **worried,** knowing what was going to happen?

Here the psychoanalytic client uses a series of negative words to elaborate on his/her emotional feelings (*miserable, frustrated*), establishing a pessimistic style that is distinctly different from the preceding extract. Although the therapist aims to guide the client to re-experience the

negative emotions and explore the underlying mechanisms, he/she adopts a relatively neutral and detached strategy when responding to the client's emotions. Vague and abstract expressions like "getting something" are employed to avoid potentially judgemental or subjective interpretations. Emotion words are used only in direct citations of the client's expressions or when the emotional tone has been firmly established.

Although all therapeutic interventions aim to address the client's emotional disturbances, humanistic psychology is particularly concerned with the subjective or the feeling side of experiences (Fernald, 2007). Probably influenced by the belief that the complete understanding and unconditional acceptance will help the clients obtain a more comprehensive understanding of self, the emotional language used by humanistic therapists is the closest to that of clients. In fact, humanistic therapy is the only case where therapists' emotional tone was not significantly different from that of clients (p=.998); therapists' average score is even slightly lower than their clients' (M=45.15, SD=15.11). This tendency could be observed from Extract 8. After the client expresses his/her confusion about staying in the therapy, the therapist follows up with empathic interpretations to help the client better realize and understand the feelings. While the client gets a high emotional tone score of 65.17, the therapist scores only 32.16.

Extract 8
CLIENT: No I don't know what to expect. I don't see that it can be that **beneficial.**
THERAPIST: You're feeling **apprehensive**, you're-
CLIENT: Yes. I do. Because you know, people will think it's utterly a **shock** […] I've just never told anybody that there's anything **wrong** with me...
THERAPIST: Yeah. It sounds like…
CLIENT: It's a little **embarrassing.**
THERAPIST: It's **embarrassing** and **uncomfortable** to be here and to say, "There's something **wrong** with me."
CLIENT: Yes.

THERAPIST: And you **don't like** that.
CLIENT: No I don't. […] I've never really thought too much about what was **wrong** with me.

Different from the psychoanalytic therapist in Extract 7, the humanistic therapist offered more instant emotional support. He/she not only acknowledges the client's feelings in an explicit manner (*apprehensive*, *uncomfortable*) but also conveys an empathic understanding of the client's inner activities (you *don't like* that). Unlike the CBT therapist in Extract 6, the humanistic therapist seldom goes beyond what the client had expressed for informative or educational purposes. The use of emotion words largely follows the client's narration, and the major purpose is to express acceptance and empathy rather than to elicit an alternative, rational response from the client.

Authenticity

The random effect of session on authenticity is the greatest among all four variables (R^2-marginal=0.525, R^2-conditional=0.764, ICC of the random component=0.502), suggesting remarkable cross-session variance in the speakers' inclinations toward self-expression. Both the effect of speakers $F(1,151)=642.689$, $p<.001$ and the speaker-approach interaction $F(3,151)=14.758$, $p<.001$ are statistically significant, which means therapists and clients have contrastive self-expressing behaviors, and the between-speaker differences are not consistent across different therapeutic approaches. The effect of approaches is not significant $F(3,151)=0.236$, $p=.871$, suggesting theoretical underpinnings to be a less powerful factor influencing self-expression. Figure 4 shows the distribution of authenticity scores.

Therapists and clients show significant differences in self-expressive behaviors (all *p*s<.001), with clients generally holding an open and honest attitude and therapists being more distanced and withdrawn. Given therapists' active attention and unconditional empathy, the therapeutic relationship creates a safe environment for clients to freely express their thoughts and feelings, without fearing that the relationship would be disrupted by the discussion of difficult topics (Wampold, 2015) or being restricted by the rules of normal social interactions (Kahn, 1991). Consistent with the findings of Hill et al. (2018), therapists refer to their personal experiences, feelings, and opinions only on an infrequent basis.

Cross-approach differences in self-expression are only significant among therapists but not among clients. Despite their endeavors to remain detached and anonymous in therapy, psychoanalytic therapists show the most active self-referencing and self-expressing behaviors (M=56.37, SD=19.60). Their average score is significantly higher than that of humanistic therapists (M=45.13, SD=19.37) (*p*=.041), which is the lowest among all. However, neither of the scores differ significantly from that of CBT therapists (M=47.45, SD=12.98) and that of eclectic therapists (M=46.06, SD=17.18), which means the boundary between high and low self-expression is somewhat unclear. Extract 9 is illustrative of the high authenticity style in psychoanalytic sessions. When the therapist prompts the client to reflect on his/her understanding of financial difficulties, the client provides a brief explanation but soon shifts to other irrelevant issues. The therapist notices the change of topic as a potential sign of unconscious activity and points it out right away. The therapist's and the client's authenticity scores are 78.84 and 89.66, respectively.

Extract 9

THERAPIST: You had said that you never succeeded at anything, **but I** think that's kind of **not** true. **Actually** you certainly were making money and staying busy for a while there.

CLIENT: […] When **I** was a kid **I** wanted to be a major league baseball player and that never happened. **I didn't** even make the high school team; **or** a rock and roll star and then **I** wouldn't practice. **I** guess it's all **my** fault. Why are some people driven and **I'm not?**
THERAPIST: What do you think?
CLIENT: **I** don't know. **I'm** a lazy procrastinator. **I'm** just **not** sure. **I** guess **I** worked hard in law school. **I** worked hard closing all those loans. […] **I** want a day **I** can just sleep late and **I haven't** had that in a while. **I** look **really** tired. [...] It's **not** like **I'm not** getting eight hours of sleep.
THERAPIST: **I** have the sense that sometimes you are aware and sometimes you're **not** aware of how quickly you change the subject. You posed some, at least it seems to **me**, quite important questions about why things have been so hard for you […]

Both speakers in this conversation make frequent use of first-person singular pronouns and differentiation words when stating their personal opinions and distinguishing different entities and ideas. While the client provides great details about his/her personal experiences using first-person singular pronouns (*I didn't, I'm not* getting), the therapist is more concerned with the client's subconscious avoidant behaviors, and self-expressions (*I* have the sense, it seems to *me*) are mainly devoted to reflections on the ongoing therapeutic activity, i.e., how the client switches to another unrelated topic.

The psychoanalytic style of self-expression contrasts sharply with the tendency observed for humanistic therapists, illustrated by Extract 10. As the client expresses mixed feelings toward his/her grandmother, the therapist focuses exclusively on the client's inner experience but provides only sparse annotations to his/her thoughts and behaviors. While the client gets a high score of 77.04, the therapist scores only 30.42.

Extract 10
CLIENT: Because **I** was so sorry for **her** that **she wasn't** able to be happy […] **I** was angry with **my** grandmother for what **she** was doing to my mother, **I** was sorry for **her** too. There were all sorts of mixed up emotions, **really** too much for a child.

> THERAPIST: Almost feel as **though** all those mixed feelings of anger for your grandmother and sorrow for **her** and feeling kind of worried about and responsible for your mother, almost robbed you of any real childhood.
> CLIENT: **I'm** thinking that maybe there may be a feeling of resentment that **I** may have had **without my** knowing […]
> THERAPIST: Did you feel that perhaps there was sort of an undercurrent of resentment toward **her** on the basis of, "Why doesn't **she** settle this thing? Why doesn't **she** set limits as to how submission **she** will be or something?"
> CLIENT: […] **I** don't know, may have given **me** a lack of belief in adults and because it seemed to be such a mess and it resulted in such awful experiences for **me** […]
> THERAPIST: Uh, huh. Am **I** getting this right? That you felt that **if he** dropped out of the situation then […]

Like the psychoanalytic client in the preceding extract, the humanistic client also shows an open attitude toward self-expression, which can be discerned from the frequent use of first-person singular pronouns, third-person pronouns, and differentiation words. The therapist's language, nevertheless, deviates from the psychoanalytic style. Instead of marking the therapist's professional opinions, self-references are used mainly for confirmation purposes (Am *I* getting this right?). Meanwhile, active attempts are made to adopt the client's frame of reference, as reflected by the repetitive use of second-person pronouns and frequent references to the client's negative emotions.

The contrast in authenticity styles is generally consistent with the methodological stances taken by psychoanalytic therapists and humanistic therapists. Focusing on the implicit links between the unconscious and current behavioral modes, psychoanalytic therapists take the therapist-client relationship as the primary subject of examination and use interpretation as the major intervention technique (Prochaska & Norcross, 2014). Therefore, an important task of psychoanalytic therapists is to provide professional feedback on clients' behaviors, thoughts,

feelings, and the ongoing therapeutic interaction. By contrast, humanistic therapists seldom interpret clients' experiences from an external perspective or inform them about specific courses of action. As they are more inclined to adopt their clients' referential frameworks and facilitate therapeutic changes from the inside out, references to the self or professional opinions can be less frequent.

Summary

The findings of mixed-effects models reveal distinct linguistic profiles of therapists and clients across four different therapeutic approaches (see Table 4). Main effects for speakers are significant in all four variables (all *p*s<.001), revealing contrasting linguistic habits for therapists and clients. Therapists are more likely to organize their language in a logical, formal, and confident way. Their expressions are mostly client-focused, and the emotional tones are generally neutral to positive. By contrast, clients are more inclined to use informal, narrative, and tentative language; they also hold a more open mindset toward self-disclosure, especially when expressing negative emotions. Main effects of therapeutic approaches are significant for all variables except for authenticity. This means the four approaches are characterized by distinct patterns of analytical thinking, clout expression, and emotional communication, whereas the use of self-expressive language is much less likely to vary across approaches.

The patterns of speaker-approach interaction differ remarkably across the four linguistic variables. Therapists from different approaches show divergent preferences in the use of analytical language, and their linguistic styles are very often mirrored by their clients. By comparison, the two speakers' expressions of clout, emotional tones, and authenticity show more differences than similarities at the approach level. While therapist language manifests profound

and theoretically meaningful cross-approach differences, client language shows less discernible patterns. As the matching in therapist and client language has been identified as an important indicator of therapeutic alliance and treatment outcome (Borelli et al., 2019), the present study points to the need for future research to zoom in on more nuanced contextual factors and their impact on therapist-client interaction.

The different interaction patterns also highlight speakers' professional knowledge and conversational roles as key factors in the construction of therapeutic language. Therapist language exhibits interesting variations at the approach level. Psychoanalytic therapists show a strong preference for formal and structured expressions; although they are the most active in expressing therapeutic opinions, their language is largely structured in a non-intrusive and emotionally neutral style. CBT therapists tend to use more casual, colloquial, and positive expressions, although their language can be more confident and definite than that of other therapists. Humanistic therapists are found with the least formal and the least emotionally positive language. Following the non-directive and non-intrusive strategy, they are more inclined to stay with their clients' emotional feelings and less motivated to express their understandings and opinions. The linguistic style of eclectic therapy is not simply an average of their component approaches; featuring a high degree of analytical thinking, a high level of clout, and also a particularly optimistic emotional tone, language use of eclectic therapists shows a peculiar pattern that is different from that of other approaches. Consistent with the findings of Meara et al. (1981), client language shows more similarities than differences. This suggests clients' linguistic behaviors could be more influenced by their perceived institutionalized roles than by specific therapeutic approaches.

Conclusion

This study illustrates how the combination of LIWC-based mixed-method analysis could generate meaningful insights for the study of therapeutic language. LIWC-based mixed-method analysis manifests methodological strengths in expanding the research scope permitted by traditional discourse analysis. The use of LIWC provides a feasible and replicable approach for investigating psychologically meaningful differences in large bodies of therapeutic language. The incorporation of statistical analysis and discourse analysis further allows the exploration of macro linguistic patterns without losing sight of the dynamic linguistic processes and qualitative differences at the micro level. The use of mixed-effects model also enables a more precise account of clustering effects, which are commonly seen in human-subject research such as psychological and educational studies (McNeish and Kelley, 2019).

Taking the four LIWC variables as entry points, this study points toward the potential for therapist language to vary across therapeutic approaches; it also reveals the contrasts between therapist and client language and how the differences vary across therapeutic approaches. While previous attempts to integrate existing therapeutic approaches into a common therapeutic language (e.g., Borgo et al., 2018) mainly focused on explicit differences in specific therapeutic procedures and terminologies, the present study reveals how speakers' theoretical dispositions and practical concerns can be systematically encoded in structural aspects of language, highlighting the need for future research to account for more nuanced differences at the linguistic level. The findings also hold implications for future research into therapeutic language and therapists' self-reflection.

The present study has a number of limitations that need to be addressed by future research. Firstly, transcripts examined by this study were accessed from a database; their

therapeutic approaches were identified based on self-reports of the therapists, and no external assessment of therapy quality and representativeness was available. Future research could incorporate more rigorous quality evaluations to investigate linguistic features that are justifiably representative of the approaches. Secondly, this study only examined a limited sample size and a specific range of subbranches of the approaches, which makes it difficult to generalize the findings to the larger population of therapists. To identify more generalizable patterns, the methods need to be replicated on a larger number of dyads and a wider range of approaches and subbranches. Thirdly, while this study focused on cross-approach and between-speaker linguistic features in single sessions, it would also be interesting to model the patterns in consecutive sessions using time series analytic methods (Tay, 2019). This would add to existing knowledge about the potential influence of more specific therapeutic factors, such as different types of therapeutic alliance and the effect of specific treatment techniques. Lastly, LIWC-based analysis does not take figurative language such as metaphors into account. While figurative language has been found to play an important role in the therapeutic process (Ferrara, 1994; Tay, 2013; Stott et al., 2010), its variation across different therapeutic approaches remains to be explored.

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